

# 42. Kansantaloustieteen päivät

Finnish Economic Association 42<sup>nd</sup> Annual Meeting

Tampere  
6.-7.2.2020

Programme

Thursday 6.2.2020

- 9:00-10:30 Registration (Main lobby, Tampere University Main Building, Kalevantie 4)
- 10:00-12:00 **Parallel Sessions I**  
1a: Forecasting and Nowcasting (Pääatalo B05 Kahveri kokoushuone)  
1b: Health (Pääatalo A4 luentosali)  
1c: Financial Market Regularisation and Fiscal Rules (Pääatalo A3 luentosali)  
1d: Growth, Productivity and Market Power (Pääatalo A2a auditorio)  
1e: Gender (Pääatalo C9 luentosali)  
1f: Micro Theory (Pääatalo B09 kokoushuone 3)
- 12:00-13:00 Lunch Break (registration desk open)
- 13:00-14:30 **Parallel Sessions II**  
2a: Applied Theory (Pääatalo B05 Kahveri kokoushuone)  
2b: Firms 2 (Pääatalo A4 luentosali)  
2c: Children (Pääatalo A3 luentosali)  
2d: Monetary Policy 2 (Pääatalo A2a auditorio)  
2e: Public Economics 1 (Pääatalo C9 luentosali)  
2f: Labour Mobility (Pääatalo B09 kokoushuone 3)
- 14:30-15:00 Coffee break (registration desk open)
- 15:00-16:30 **Parallel Sessions III**  
3a: Environment 1 (Pääatalo B05 Kahveri kokoushuone)  
3b: Firms 1 (Pääatalo A4 luentosali)  
3c: Household Finance and Consumption (Pääatalo A3 luentosali)  
3d: Monetary Policy 1 (Pääatalo A2a auditorio)  
3e: Public Economics 2 (Pääatalo C9 luentosali)  
3f: Data Analysis (Pääatalo B09 kokoushuone 3)
- 16:30 -16:45 Registration desk open
- 16:45-18:00 Opening words by Chairperson Juuso Vanhala and plenary lecture by Professor John Hassler (Stockholm University, Institute for International Economic Studies) (Pääatalo A1 auditorio)
- 19:00-20:15 Welcome reception by the City of Tampere\* (Museum Centre Vapriikki, Alaverstaanraitti 5, 33101 Tampere)
- 20:30- Conference dinner at Radisson Blu Grand Hotel Tammer (Satakunnankatu 13, 33100 Tampere)

Friday 7.2.2020

10:00-12:00 **Parallel Sessions IV**

4a: Economics of Education (Päättalo A4 luentosali)

4b: Computable General Equilibrium Models in Applied Economic Analysis (Päättalo A31 luentosali)

4c: Housing Economics (Päättalo A2a auditorio)

4d: Labour 1 (Päättalo A3 luentosali)

4e: Applied Economic Analysis (Päättalo A32 luentosali)

4f: Talouspolitiikan arviointineuvosto (Päättalo B09 kokoushuone 3)

12:00-13:00 Lunch Break

13:00-15:00 **Parallel Sessions V**

5a: Economic History and Politics (Päättalo A4 luentosali)

5b: Immigration and Neighbourhood (Päättalo A31 luentosali)

5c: Banking (Päättalo A2a auditorio)

5d: Applied Econometrics (Päättalo A3 luentosali)

5e: Labour 2 (Päättalo A32 luentosali)

5f: Environment 2 (Päättalo B09 kokoushuone 3)

### **Practical information**

The conference is held at Tampere University (Kalevantie 4, 33100 Tampere). There is free wifi available at the university (WLAN: UTAPAC): username: ssehsm@guest.uta.fi; password: fyHdgD. Please note that the wifi connection will work for two hours starting from the first time you register, so please do not use this username and password before the conference.

There are several potential lunch restaurants close to the conference venue. For example, in the main building, where the sessions are held, you can find the student restaurant Juvenes. In the PinniB building you can find the Fazer Minerva restaurant, and opposite the university in the Technopolis building you can find lunch restaurant Aleksis.

\*Please note that when you register for the conference and pick up your name badge, you will be given a separate invite to the welcome reception by the City of Tampere. Please bring this invitation with you to the reception, as without it you will not be able to attend. If you arrive after the registration in the morning has ended, you will be able to pick up your name badge and your invite to the welcome reception during the other breaks (see programme). During the welcome reception you will have the opportunity to see the Ostia - Gateway to Rome exhibit at Vapriikki. The reception venue is an easy 1 km walk from Scandic Tampere City through the city centre (1.5 km from Lapland Hotels Tampere). We will meet at the Scandic Tampere City lobby at 18:40 to walk to Vapriikki together. There is also a possibility to take a local bus part of the way.

This conference greatly acknowledges financial support from Tampere University, City of Tampere and Foundation for Economic Education.

Parallel sessions I: Thursday 6.2.2020 10:00-12:00

Päätalo  
B05  
Kahveri

Session 1a: Forecasting and Nowcasting

Chair: Annika Lindblad (Bank of Finland)

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**Forecasting Finnish inflation: a comparison of models using aggregate and disaggregate data**

**Harri Pönkä** (Bank of Finland)

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**Nowcasting and forecasting tourism flows to Finland**

**Paolo Fornaro** (ETLA), Henri Luomaranta, Ossi Nurmi

*Discussant: Annika Lindblad (Bank of Finland)*

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**Forecasting Finnish GDP using MIDAS models**

**Annika Lindblad** (Bank of Finland)

*Discussant: Paolo Fornaro (ETLA)*

Päätalo  
A4 ls

Session 1b: Health

Chair: Mika Haapanen (Jyväskylän yliopisto)

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**Retirement, Incentives and Health: Evidence from Finnish pension reform**

**Joonas Ollonqvist** (THL), Kaisa Kotakorpi, Jukka Pirttilä, Pekka Martikainen, Mikko Laaksonen, Lasse Tarkiainen

*Discussant: Mika Haapanen (Jyväskylän yliopisto)*

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**School, peers and mental health**

**Tiina Kuuppelomäki** (Tampereen yliopisto, Palkansaajien tutkimuslaitos)

*Discussant: Joonas Ollonqvist (THL)*

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**Labor market performance after first psychiatric admissions**

**Henri Salokangas** (Turun yliopisto)

*Discussant: Tiina Kuuppelomäki (Tampereen yliopisto, Palkansaajien tutkimuslaitos)*

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**Much Ado about Nothing? Minimum Legal Drinking Age and Morbidity**

**Mika Haapanen** (Jyväskylän yliopisto), Petri Böckerman, Christopher Jepsen

*Discussant: Henri Salokangas (Turun yliopisto)*

Parallel sessions I: Thursday 6.2.2020 10:00-12:00 (cont.)

Päätalo  
A3 ls

Session 1c: Financial Market Regularisation and Fiscal Rules

Chair: Jenni Kellokumpu (Valtiontalouden tarkastusvirasto)

**Are bank capital requirements optimally set? Evidence from researchers' views**

**Kim Ristolainen** (University of Turku), Gene Ambrocio, Iftekhar Hasan, Esa Jokivuolle

*Discussant: Jenni Kellokumpu (Valtiontalouden tarkastusvirasto)*

**Identification of fiscal SVARs in small open economies using trade partner forecast errors as instruments**

**Henri Keränen** (Palkansaajien tutkimuslaitos), Sakari Lähdemäki

*Discussant: Aino Silvo (Bank of Finland)*

**Macroprudential policies for a small open economy**

**Aino Silvo** (Bank of Finland), Fabio Verona

*Discussant: Henri Keränen (Palkansaajien tutkimuslaitos)*

**Changing EU's fiscal rules – what would it mean for Finland?**

**Jenni Kellokumpu** (Valtiontalouden tarkastusvirasto), Leena Savolainen

*Discussant: Arto Kokkinen (Bank of Finland)*

Päätalo

A2a audi-  
torio

Session 1d: Growth, Productivity and Market Power

Chair: Johan Willner (Åbo Akademi University)

**Public employment flows over the life cycle**

**Lauro Carnicelli** (Palkansaajien tutkimuslaitos)

*Discussant: Michaela Schmöller (Bank of Finland)*

**Stagnant Wages, Sectoral Misallocation and Slowing Productivity Growth**

**Michaela Schmöller** (Bank of Finland)

*Discussant: Lauro Carnicelli (Palkansaajien tutkimuslaitos)*

**Connecting the dots: A bibliometric analysis of the link between standardization and economic growth**

**Jussi Heikkilä** (JSBE and Nokia Technologies), Julius Rissanen

*Discussant: Johan Willner (Åbo Akademi University)*

**Growth and stagnation under conditions of oligopoly**

**Johan Willner** (Åbo Akademi University), Sonja Grönblom

*Discussant: Jussi Heikkilä (JSBE and Nokia Technologies)*

Parallel sessions I: Thursday 6.2.2020 10:00-12:00 (cont.)

Päätalo  
C9 1s

Session 1e: Gender

Chair: Tolga Benzer (Aalto University)

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**Firm premiums, individual performance and the gender wage-gap**  
**Aspasia Bizopoulou** (VATT), Tuomas Pekkarinen

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**Do girls choose science when exposed to female science teachers?**  
**Aino-Maija Aalto** (SOFI, Stockholm universitet)  
*Discussant: Tolga Benzer (Aalto University)*

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**Islamic Schools and Female Education**  
**Tolga Benzer** (Aalto University)  
*Discussant: Aino-Maija Aalto (SOFI, Stockholm universitet)*

Päätalo  
B09 kh 3

Session 1f: Micro Theory

Chair: Andrey Zhukov (Aalto University)

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**On the choice between price and quantity instrument under endogenous lobby formation**  
**Pauli Lappi** (Helsingin yliopisto)  
*Discussant: Hannu Huuki (Suomen ympäristökeskus (SYKE))*

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**Unobserved preferences and expectations in dynamic platform pricing**  
**Hannu Huuki** (Suomen ympäristökeskus (SYKE)), Rauli Svento  
*Discussant: Pauli Lappi (Helsingin yliopisto)*

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**Networks and Walrasian Equilibria**  
**Hannu Salonen** (Turun yliopisto)  
*Discussant: Andrey Zhukov (Aalto University)*

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**Optimal search for the best alternative with agency**  
**Andrey Zhukov** (Aalto University)  
*Discussant: Hannu Salonen (Turun yliopisto)*

Parallel sessions II: Thursday 6.2.2020 13:00-14:30

Päätalo  
B05  
Kahveri

Session 2a: Applied Theory

Chair: Daniel Hauser (Aalto University)

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**Market inefficiency, entry order and coordination**

**Yi Zheng** (University of Helsinki), Klaus Kultti

*Discussant: Tuomas Takalo (Bank of Finland and VATT)*

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**Staged equity financing – who, when and why?**

**Tuomas Takalo** (Bank of Finland and VATT), Magnus Blomkvist, Timo Korkeamäki

*Discussant: Daniel Hauser (Aalto University)*

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**Censorship and Reputation**

**Daniel Hauser** (Aalto University)

*Discussant: Yi Zheng (University of Helsinki)*

Päätalo  
A4 ls

Session 2b: Firms 2

Chair: Anna-Maija Juuso (University of Oulu)

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**Entry in Public Procurement: Evidence from Finland**

**Jan Jääskeläinen** (Aalto University)

*Discussant: Anna-Maija Juuso (University of Oulu)*

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**Dependencies, firm size, growth and exports**

**Ilkka Kiema** (Palkansaajien tutkimuslaitos), Sakari Lähdemäki, Hannu Karhunen

*Discussant: Jan Jääskeläinen (Aalto University)*

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**Investments in information security**

**Anna-Maija Juuso** (University of Oulu), Rauli Svento

*Discussant: Saara Vaahtoniemi (Vaasan yliopisto)*

Parallel sessions II: Thursday 6.2.2020 13:00-14:30 (cont.)

Päätalo  
A3 ls

Session 2c: Children

Chair: Kristiina Huttunen (VATT and Aalto University)

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**Maternal Age and Child Outcomes**

**Kristiina Huttunen** (VATT and Aalto University), Peter Fredriksson, Björn Öckert

*Discussant: Claudia Troccoli (Aalto University)*

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**The effects of early maternity leave reforms in Finland**

**Claudia Troccoli** (Aalto University)

*Discussant: Tuomas Pekkarinen (VATT)*

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**Does healthy lifestyle in childhood improve education outcomes? Evidence from randomized intervention**

**Jutta Viinikainen** (Jyväskylän yliopisto)

*Discussant: Kristiina Huttunen (VATT and Aalto University)*

Päätalo  
A2a  
auditorio

Session 2d: Monetary Policy 2

Chair: Samu Kärkkäinen (Jyväskylän yliopisto)

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**Monetary policy with heterogeneous financial markets**

**Adam Gulan** (Bank of Finland)

*Discussant: Samu Kärkkäinen (Jyväskylän yliopisto)*

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**Does my model predict a forward guidance puzzle?**

**Nigel McClung** (Bank of Finland)

*Discussant: Adam Gulan (Bank of Finland)*

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**Monetary policy autonomy in a small open economy: Evidence from some inflation-targeting countries**

**Samu Kärkkäinen** (Jyväskylän yliopisto), Kari Heimonen

*Discussant: Nigel McClung (Bank of Finland)*

Parallel sessions II: Thursday 6.2.2020 13:00-14:30 (cont.)

Päätalo  
C9 1s

Session 2e: Public Economics 1

Chair: Matti Hovi (Tampereen yliopisto)

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**The effect of reporting institutions on tax evasion: Evidence from the lab**

**Satu Metsälampi** (University of Turku), Kaisa Kotakorpi, Topi Miettinen, Tuomas Nurminen

*Discussant: Matti Hovi (Tampereen yliopisto)*

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**Equity aspects of business income tax complexity: is complexity progressive or regressive?**

**Aliisa Koivisto** (VATT, University of Helsinki)

*Discussant: Satu Metsälampi (University of Turku)*

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**Income, Aspirations and Subjective Well-being: International Evidence**

**Matti Hovi** (Tampereen yliopisto), Jani-Petri Laamanen

*Discussant: Aliisa Koivisto (VATT, University of Helsinki)*

Päätalo  
B09 kh 3

Session 2f: Labour Mobility

Chair: Jaakko Simonen (Oulun yliopiston kauppakorkeakoulu)

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**Labour mobility – The role of joint work history with colleagues**

**Jukka Perttunen** (Oulun yliopiston kauppakorkeakoulu), Santtu Karhinen, Jaakko Simonen, Rauli Svento

*Discussant: Jaakko Simonen (Oulun yliopiston kauppakorkeakoulu)*

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**Multiple job holding in the changing labour market**

**Merja Kauhanen** (Labour Institute for Economic Research)

*Discussant: Jukka Perttunen (Oulun yliopiston kauppakorkeakoulu)*

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**The drivers of intra- and inter-regional labour mobility over the industry life-cycle**

**Jaakko Simonen** (Oulun yliopiston kauppakorkeakoulu), Santtu Karhinen, Rauli Svento, Philip McCann

*Discussant: Merja Kauhanen (Labour Institute for Economic Research)*

Parallel sessions III: Thursday 7.2.2019 15:00-16:30 (cont.)

Päätalo  
B05  
Kahveri

Session 3a: Environment 1

Chair: Jouni Räihä (Oulu Business School)

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**The net costs of the Finnish feed-in tariff system for wind power**

**Santtu Karhinen** (Suomen ympäristökeskus), Ludi Wang

*Discussant: Anna Sahari (VATT)*

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**Split incentives in heating technology investments**

**Anna Sahari** (VATT)

*Discussant: Jouni Räihä (Oulu Business School)*

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**Determinants of innovative supplementary heating system choice and the level of adoption consideration**

**Jouni Räihä** (Oulu Business School), Enni Ruokamo

*Discussant: Santtu Karhinen (Suomen ympäristökeskus)*

Päätalo  
A4 ls

Session 3b: Firms 1

Chair: Sakari Lähdemäki (Palkansaajien tutkimuslaitos)

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**Short-term impacts of GDPR on firm performance**

**Heli Koski** (ETLA)

*Discussant: Sakari Lähdemäki (Palkansaajien tutkimuslaitos)*

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**The Impact of Stock Market Development on Private Sector R&D**

**Martina Baumann** (Institute for Employment Research Nuremberg )

*Discussant: Heli Koski (ETLA)*

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**Privatization in competitive environment: evidence from Finland's manufacturing sector**

**Sakari Lähdemäki** (Palkansaajien tutkimuslaitos)

*Discussant: Martina Baumann (Institute for Employment Research Nuremberg)*

Parallel sessions III: Thursday 7.2.2019 15:00-16:30 (cont.)

Päätalo  
A3 ls

Session 3c: Household Finance and Consumption

Chair: Teemu Meriläinen (Suomen Ympäristökeskus SYKE, Oulun yliopisto)

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**Drivers of household consumption expenditure and carbon footprint in Finland**

**Hannu Savolainen** (Suomen ympäristökeskus), Marja Salo, Santtu Karhinen, Ari Nissinen

*Discussant: Teemu Meriläinen (Suomen Ympäristökeskus SYKE, Oulun yliopisto)*

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**Households, credit-scoring and social exclusion – an empirical analysis of the access to finance in Europe**

**Ilja Kristian Kavonius** (Centre for Consumer Society Research, University of Helsinki), Päivi Timonen, Juha Honkkila

*Discussant: Hannu Savolainen (Suomen ympäristökeskus)*

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**The Effect of Information Nudges on Energy Saving: Observations from a Randomized Field Experiment in Finland**

**Teemu Meriläinen** (Suomen Ympäristökeskus SYKE, Oulun yliopisto), Santtu Karhinen, Enni Ruokamo, Rauli Svento

*Discussant: Ilja Kristian Kavonius (Centre for Consumer Society Research, University of Helsinki)*

Päätalo  
A2a  
auditorio

Session 3d: Monetary Policy 1

Chair: Jaakko Nelimarkka (Valtiovarainministeriö)

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**The Effect of QE in Euro Area**

**Mika Kortelainen** (Bank of Finland)

*Discussant: Jaakko Nelimarkka (Valtiovarainministeriö)*

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**Monetary policy regimes and financial market uncertainty**

**Annika Kuusela** (Jyväskylän yliopiston kauppakorkeakoulu), Juha Junntila

*Discussant: Mika Kortelainen (Bank of Finland)*

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**Structural vector autoregression for the study of conventional and unconventional monetary policy**

**Jaakko Nelimarkka** (Valtiovarainministeriö), Tomi Kortela

*Discussant: Annika Kuusela (Jyväskylän yliopiston kauppakorkeakoulu)*

Parallel sessions III: Thursday 7.2.2019 15:00-16:30 (cont.)

Päätalo  
C9 1s

Session 3e: Public Economics 2

Chair: Annika Nivala (Turun yliopisto, VATT)

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**Self-Selection of Emigrants: Role of Returns to Skills and Taxation**

**Ilpo Kauppinen** (VATT), Salla Kalin, Kaisa Kotakorpi, Jukka Pirttilä

*Discussant: Annika Nivala (Turun yliopisto, VATT)*

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**The impact of local property taxation on firm growth and location: evidence from Flanders**

**Sander Ramboer** (VATT, KU Leuven)

*Discussant: Ilpo Kauppinen (VATT)*

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**Firms and tax audits - Evidence from risk based tax audits in Finland**

**Annika Nivala** (Turun yliopisto, VATT), Jarkko Harju, Kaisa Kotakorpi, Tuomas Matikka

*Discussant: Sander Ramboer (VATT, KU Leuven)*

Päätalo  
B09 kh 3

Session 3f: Data Analysis

Chair: Marja-Liisa Halko (University of Helsinki)

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**Partisanship in political speech: Text-based analysis of Finnish parliamentary debates 1907-2018**

**Salla Simola** (Aalto-yliopisto)

*Discussant: Marja-Liisa Halko (University of Helsinki)*

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**A Machine Learning Analysis of Geographic Localization of Knowledge Flows**

**Mikko Packalen** (University of Waterloo), Joel Blit

*Discussant: Salla Simola (Aalto-yliopisto)*

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**Do non-choice data reveal economic preferences? Evidence from simple biometric data and compensation-scheme choice**

**Marja-Liisa Halko** (University of Helsinki), Olli Lappalainen, Lauri Sääksvuori

*Discussant: Mikko Packalen (University of Waterloo)*

Parallel sessions IV: Friday 7.2.2020 10:00-12:00

Päätalo  
A4 ls

Session 4a: Economics of Education

Chair: Juho Jokinen (University of Jyväskylä)

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**Sibling spillovers in post-compulsory education**

**Hanna Virtanen** (ETLA), Mikko Silliman

*Discussant: Andres Barrios-Fernandez (VATT)*

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**Siblings' Effects on College and Major Choices: Evidence from Chile, Croatia and Sweden**

**Andres Barrios-Fernandez** (VATT), Adam Altmejd, Marin Drlje, Christopher Neilson, Dejan Kovac

*Discussant: Hanna Virtanen (ETLA)*

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**The Effects of Game-Based Financial Education: New Survey Evidence from Lower Secondary School Students in Finland**

**Jaana Rahko** (Vaasan yliopisto), Panu Kalmi

*Discussant: Juho Jokinen (University of Jyväskylä)*

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**Cognitive skills and personality as determinants of university major and subsequent earnings**

**Juho Jokinen** (University of Jyväskylä), Tuomo Suhonen

*Discussant: Panu Kalmi (Vaasan yliopisto)*

Päätalo  
A31 ls

Session 4b: Computable General Equilibrium Models in Applied Economic Analysis

Chair: Olli-Pekka Ruuskanen (Pellervon Taloustutkimus PTT ry)

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**Regionalization of Input-Output Tables Using CGE-modelling with Paucity of Data**

**Naufal Alimov** (Pellervon Taloustutkimus PTT ry), Olli-Pekka Ruuskanen, Janne Huovari, Juha Honkatukia

*Discussant: Jouko Kinnunen (Ålands statistik- och utredningsbyrå)*

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**Evaluating Climate Policies with the help of CGE-models**

**Juha Honkatukia** (THL)

*Discussant: Saara Tamminen (VATT)*

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**Ahvenanmaan kasvun mahdollisuudet – CGE-analyysi makrotrendien luomista mahdollisuuksista ja haasteista**

**Jouko Kinnunen** (Ålands statistik- och utredningsbyrå)

*Discussant: Juha Honkatukia (THL)*

Parallel sessions IV: Friday 7.2.2020 10:00-12:00 (cont.)

Päätalo

A2a auditorio Session 4c: Housing Economics

Chair: Tuukka Saarimaa (Aalto University)

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**Who benefits from the Hitas System?**

**Oskari Harjunen** (VATT), Teemu Lyytikäinen, Tuukka Saarimaa

*Discussant: Tuuli Vanhapelto (Toulouse School of Economics)*

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**Housing allowance, housing demand and rents**

**Teemu Lyytikäinen** (VATT), Essi Eerola, Tuukka Saarimaa

*Discussant: Oskari Harjunen (VATT)*

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**Public Housing: Tenants, housing careers and neighborhoods**

**Essi Eerola** (VATT), Oskari Harjunen, Tuukka Saarimaa

*Discussant: Teemu Lyytikäinen (VATT)*

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**Housing search and liquidity in the cross-section of market segments**

**Tuuli Vanhapelto** (Toulouse School of Economics), Thierry Magnac

*Discussant: Essi Eerola (VATT)*

Päätalo

A3 ls

Session 4d: Labour 1

Chair: Jani-Petri Laamanen (Tampereen yliopisto)

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**Aktiivimallin arvioinnin tuloksia**

**Hanna Pesola** (VATT), Tomi Kyyrä, Roope Uusitalo

*Discussant: Jani-Petri Laamanen (Tampereen yliopisto)*

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**Displacement and entrepreneurial income**

**Sami Remes** (Tampereen yliopisto)

*Discussant: Hanna Pesola (VATT)*

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**Removing welfare traps: Evidence from the Finnish Basic Income experiment**

**Jouko Verho** (VATT), Kari Hämäläinen, Ohto Kanninen

*Discussant: Sami Remes (Tampereen yliopisto)*

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**Once or Twice a Month? The Impact of Payment Frequency on Consumption Patterns**

**Jani-Petri Laamanen** (Tampereen yliopisto), Tuomas Matikka, Tuuli Paukkeri

*Discussant: Jouko Verho (VATT)*

Parallel sessions IV: Friday 7.2.2020 10:00-12:00 (cont.)

Päätalo  
A32 ls

Session 4e: Applied Economic Analysis

Chair: Anustup Kundu (University of Helsinki, UNU-WIDER)

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**Using Valuation Ratios in Detecting Stock Market Bubbles, Crises and Exuberance in the S&P Composite Index**

**Hannu Kahra** (Estonian Business School)

*Discussant: Anustup Kundu (University of Helsinki, UNU-WIDER)*

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**The role of financial development in the relationship between income inequality and economic growth: an empirical approach using cross-country panel data**

**Toni Juuti** (Jyväskylän yliopisto)

*Discussant: Hannu Kahra (Estonian Business School)*

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**The role of wealth and shocks in preference (in)stability - Experimental evidence from India**

**Anustup Kundu** (University of Helsinki, UNU-WIDER)

*Discussant: Toni Juuti (Jyväskylän yliopisto)*

Päätalo  
B09 kh 3

Session 4f: Talouspolitiikan arviointineuvosto (session in Finnish)

Chair: Seppo Orjasniemi

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**Economic Policy Council Report 2019**

**Jari Vainiomäki** (Tampere University)

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**Unemployment assistance and unemployment exits**

**Tomi Kyyrä** (VATT)

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**Evaluation of employment effects of flexible care allowance**

**Juha Tuomala** (VATT), Tuomas Pekkarinen

Parallel sessions V: Friday 7.2.2020 13:00-15:00

Päätalo  
A4 ls

Session 5a: Economic History and Politics

Chair: Pekka Tiainen (Helsingin yliopisto)

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**The history of financial crises and their lessons for crisis anticipation**

**Tuomas Malinen** (Helsingin yliopisto, GnS Economics)

*Discussant: Vesa Kannianen (Helsingin yliopisto)*

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**Suomen Nato-jäsenyys: hyöty-kustannusanalyysi**

**Vesa Kannianen** (Helsingin yliopisto), Staffan Ringbom

*Discussant: Tuomas Malinen (Helsingin yliopisto, GnS Economics)*

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**Sattumaa ja johdatusta: 150 vuotta teollisuusmaiden BKT:n kasvuerojen kehitystä**

**Paavo Peisa**

*Discussant: Pekka Tiainen (Helsingin yliopisto)*

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**Ulosottoloukun poistaminen oikeudenmukaisuuden ja työllisyyden edistämiseksi**

**Pekka Tiainen** (Helsingin yliopisto)

*Discussant: Paavo Peisa*

Päätalo  
A31 ls

Session 5b: Immigration and Neighbourhood

Chair: Elias Oikarinen (Aalto-yliopisto & Turun yliopisto)

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**How Does Refugee Immigration Influence Redistribution Politics? Evidence from Finland**

**Janne Tukiainen** (Turun yliopisto), Konstantinos Matakos, Riikka Savolainen

*Discussant: Cristina Bratu (Aalto University)*

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**Age at immigration and residential integration**

**Cristina Bratu** (Aalto University), Matz Dahlberg, Madhinee Valeyatheepillay

*Discussant: Janne Tukiainen (Turun yliopisto)*

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**Love Thy (Elected) Neighbor?**

**Tuukka Saarimaa** (Aalto University), Oskari Harjunen, Janne Tukiainen

*Discussant: Elias Oikarinen (Aalto-yliopisto & Turun yliopisto)*

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**Search costs and anchoring in the housing market**

**Elias Oikarinen** (Aalto-yliopisto & Turun yliopisto), Heidi Falkenbach

*Discussant: Tuukka Saarimaa (Aalto University)*

Parallel sessions V: Friday 8.2.2019 13:00-15:00 (cont.)

Päätalo

A2a audi-  
torio Session 5c: Banking

Chair: Karlo Kauko (Bank of Finland)

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**Bank type and employees' wages in Finland: Cooperative, savings and commercial banks**

**Saara Vaahtoniemi** (University of Vaasa), Panu Kalmi

*Discussant: Kim Ristolainen (University of Turku)*

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**The relationship between credit ratings and asset liquidity: Evidence from Western European banks**

**Jari-Mikko Meriläinen** (University of Jyväskylä), Juha Junntila

*Discussant: Katja Ahoniemi (Bank of Finland)*

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**Does experience of banking crises affect trust in banks?**

**Zuzana Fungáčová** (Bank of Finland), Eeva Kerola, Laurent Weill

*Discussant: Juha Junntila (University of Jyväskylä)*

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**Mind the Basel Gap**

**Petri Jylhä** (Aalto University), Matthijs Lof

*Discussant: Ilkka Kiema (Labour Institute for Economic Research)*

Päätalo

A3 ls Session 5d: Applied Econometrics

Chair: Markku Lehmus (ETLA)

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**Empirical Monte Carlo Evidence on Estimation of Timing-of-Events Models**

**Stefano Lombardi** (VATT), Gerard J. van den Berg, Johan Vikström

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**Estimation of the potential output by using the Sequential Monte Carlo**

**Markku Lehmus** (ETLA), Tero Kuusi

*Discussant: Stefano Lombardi (VATT)*

Parallel sessions V: Friday 8.2.2019 13:00-15:00 (cont.)

Päätalo  
A32 ls

Session 5e: Labour 2

Chair: Tapio Räsänen (Kela)

**Optimal default regime and labor supply**

**Ohto Kanninen** (Palkansaajien tutkimuslaitos), Hannu Karhunen, Terhi Maczulskij

*Discussant: Tapio Räsänen (Kela)*

**Why Finnish polytechnics reject top applicants**

**Kristian Koerselman** (JYU)

*Discussant: Ohto Kanninen (Palkansaajien tutkimuslaitos)*

**Parenthood and career development: Evidence from Finland**

**Cecilia Borgman** (Hanken)

*Discussant: Kristian Koerselman (JYU)*

**Does subsidizing private ECEC generate expenditure savings at the cost of equity? Evidence from Finland**

**Tapio Räsänen** (Kela), Eva Österbacka

*Discussant: Cecilia Borgman (Hanken)*

Päätalo  
B09 kh 3

Session 5f: Environment 2

Chair: Simone Maxand (University of Helsinki)

**On the extraction of a non-renewable resource with amenity value**

**Jussi Uusivuori** (Luke), Janne Rämö

*Discussant: Simone Maxand (University of Helsinki)*

**The Relevance of Wholesale Electricity Market Places: The Nordic Case**

**Kimmo Ollikka** (VATT), Petr Spodniak, Samuli Honkapuro

*Discussant: Jussi Uusivuori (Luke)*

**Energy, emissions and growth in Sub-Saharan Africa: Evidence from statistically identified panel SVECMs**

**Simone Maxand** (University of Helsinki)

*Discussant: Kimmo Ollikka (VATT)*

#### **Forecasting Finnish inflation: a comparison of models using aggregate and disaggregate data** **Harri Pönkä** (Bank of Finland)

In the academic literature on forecasting inflation, the majority of models are models that aim to forecast headline inflation directly. However, there is no consensus whether inflation is best modelled by aggregating forecasts made for parts of the total consumer price index or if it is better to forecast aggregate inflation directly. Many practical forecasters use disaggregated data in their forecasts. This work aims to compare the forecast efficiency of different types of methodologies applied to Finnish consumer inflation.

#### **Nowcasting and forecasting tourism flows to Finland** **Paolo Fornaro** (Etna), Henri Luomaranta, Ossi Nurmi

We construct a framework to provide flash estimates and short-term forecasts (up to 6 month-ahead) of overnight stays in Finland by tourists, analyzing different countries of origin separately. To do this, we rely on different data sources, depending on the target predictions. For the flash estimates, we use a hotel-level datasets where we can simulate realistically the accumulation of information over time to impute missing data for the month of interest and compute a simple aggregate of overnight stays for different groups of tourists. For the forecasts, we use a dataset describing flight booking patterns in combination with statistical models and machine learning techniques that can handle large dimensional datasets. The results indicate the potential of using these data sources and models to obtain predictions of tourism flows, providing relatively good forecasting and nowcasting accuracy.

#### **Forecasting Finnish GDP using MIDAS models** **Annika Lindblad** (Bank of Finland)

I examine the forecasting gains from a MIDAS (mixed data sampling) regression model compared to traditional simple regression models with aggregated data when forecasting Finnish GDP. The resulting forecast combinations (i.e., bridge models) are also studied. The aim is to uncover the lead-lag relationships between monthly macroeconomic indicators and GDP, and consider whether using monthly data can provide more accurate and timely forecasts than data aggregated to the quarterly frequency.

#### **Retirement, Incentives and Health: Evidence from Finnish pension reform**

**Joonas Ollonqvist** (THL), Kaisa Kotakorpi, Jukka Pirttilä, Pekka Martikainen, Mikko Laaksonen, Lasse Tarkiainen

We analyze the link between health and retirement decisions, and in particular individual reactions to changes in retirement incentives. We study these issues in the context of the Finnish pension reform of 2005, utilizing detailed individual-level register data on health together with register data on retirement decisions. Our results indicate that economic incentives matter for the retirement decisions. Our preliminary results do not indicate clear differences between population groups defined e.g. according to health status

#### **School, peers and mental health**

**Tiina Kuuppelomäki** (Tampereen yliopisto, Palkansaajien tutkimuslaitos)

So far, the literature studying the causal educational effects has mainly focused on the pecuniary outcomes and other labor market outcomes, while little is known about the effects on other outcomes, such as mental health. In this paper I will explore causal effects of high school and relative ability on students' short- and medium-term mental health. The heterogeneity of the results is also studied, based on e.g. area of residency. In order to study the causal link between the school/peer effects on mental health, RD design is employed by using discontinuities on the admitted high school and peer group composition, at the high schools' admission cutoffs. Information needed for the RD set-up comes from Statistics Finland's Joint Upper Secondary Education Register and VATT Applications data set and includes information on applied high schools, entrance scores and acceptance. Meanwhile data on mental health outcomes comes from three different sources: data on inpatient care at health center wards comes from HILMO dataset, outpatient visits in primary health care from AVOHILMO data sets, while prescribed psychosis- and depression medication comes data from Kela's data set.

#### **Labor market performance after first psychiatric admissions**

**Henri Salokangas** (Turun yliopisto)

This paper provides new evidence on immediate changes in labor market outcomes following the first psychiatric admission to a health care facility. To reduce the confounding and to provide a plausible estimate of an effect, I exploit variation in the timing of the first psychiatric admission. Using Finnish administrative data, I find that psychiatric admissions lead to 1600 euros drop in earnings and 4 pp. in employment. The immediate change in labor market performance is greater in absolute terms for individuals with later age admissions, but these individuals also exhibit more promising signs of recovery.

## Abstracts

### Session 1b: Health (cont.)

#### **Much Ado about Nothing? Minimum Legal Drinking Age and Morbidity**

**Mika Haapanen** (Jyväskylän yliopisto), Petri Böckerman, Christopher Jepsen

This paper provides one of the first analyses of the relationship between the minimum legal drinking age (MLDA) and morbidity in the European context. Specifically, we use a regression discontinuity approach to model the effect of reaching the minimum legal drinking age on mortality and hospitalization in Finland. Our analysis uses comprehensive register data from death certificates and hospitalizations. Regression discontinuity results consistently show an increased all-cause mortality at age 18, the MLDA for beer and wine. The increase in mortality is due entirely to greater mortality for men. Although we find an increase in alcohol-related deaths for the MLDA for spirits at age 20 for men, we do not find consistent effects for other causes of death or for women. Further, we do not find any marked spillover effects on mortality or hospitalization for individuals when an older sibling reaches the MLDA.

#### **Are bank capital requirements optimally set? Evidence from researchers' views**

**Kim Ristolainen** (University of Turku), Gene Ambrocio, Iftekhar Hasan, Esa Jokivuolle

We survey 149 leading academic researchers mainly in Europe and North-America to form an assessment of the state of bank capital regulation. The median respondent prefers a 10% minimum non-risk weighted equity to assets ratio while there is a considerable skew to higher ratios, with the average at 15%; considerably higher than the current requirements. We find substantial support for the new components of bank regulation, such as liquidity requirements, brought about by the Basel III accord. 70% of experts would also support a market-based capital requirement. We document how these views are related to views on what capital requirements can achieve and what are their potential side-effects as well as experts' background characteristics. According to modal answers, the experts believe that a 5 %-point higher capital requirement would probably decrease both the likelihood and social cost of a crisis with minimal to no change to loan volumes and economic activity.

#### **Identification of fiscal SVARs in small open economies using trade partner forecast errors as instruments**

**Henri Keränen** (Palkansaajien tutkimuslaitos), Sakari Lähdemäki

We study fiscal policy with a SVAR model where identification of the relations between the model residuals and the exogenous shocks is achieved with the use of external instruments. We propose a novel instrument that enables the identification of the relation between government spending and GDP in a small open economy. We instrument the unexpected shocks in GDP with unexpected shocks in the economies of trade partners which we measure with corresponding forecast errors. Our identification strategy relies on two key assumptions. Firstly, the unexpected shocks in export countries affect the GDP of an open small economy. That is, the instrument is relevant. And secondly, we assume that the unexpected fiscal policy of a small open economy is unrelated with the unexpected shocks of its export countries. That is, the instrument is uncorrelated with fiscal shocks. We test our instrument by studying fiscal policy in two different countries, Canada and Finland and show that the instrument is valid in both cases. We argue that this type of an instrument can be constructed also for other small open economies and therefore it works more generally in the identification of SVARs.

#### **Macroprudential policies for a small open economy**

**Aino Silvo** (Bank of Finland), Fabio Verona

This paper uses Aino 3.0 – a small open economy dynamic stochastic general equilibrium (DSGE) model with a banking sector and multi-period mortgage loans – as a laboratory to study an array of macroprudential policies. Are dynamic adjustments (i.e. countercyclical capital buffers) more effective in stabilizing the economy than fixed capital requirements (i.e. higher mandatory capital)? Are borrower-based instruments (i.e. loan-to-value ratio) more effective in stabilizing the economy than capital-based tools (i.e. risk weights or capital buffers)? We show that domestic macroprudential policies provide additional stabilizing tools for a small member of a monetary union, but depending on the configuration, can also come at a cost of increasing output and inflation volatility if the focus is on stabilizing the credit cycle.

#### **Changing EU's fiscal rules – what would it mean for Finland?**

**Jenni Kellokumpu** (Valtiontalouden tarkastusvirasto (VTV)), Leena Savolainen

The poor design of the EU's fiscal rules has led to procyclical fiscal policy. As a result, rules have failed to allow governments to practice expansionary fiscal policy in downturns and bring down sovereign debt levels in upturns and building fiscal buffers for the next crisis. European Fiscal Board (EFB) have proposed reforming rules as follows: one fiscal anchor, namely debt ceiling at 60 % of GDP and expenditure benchmark as an operational indicator. Moreover, EFB proposes one escape clause replacing all existing flexibility provisions. In this paper, we simulate the effect of these proposed rules on Finland's fiscal policy for coming years.

#### **Public employment flows over the life cycle**

**Lauro Carnicelli** (Palkansaajien tutkimuslaitos)

This article estimates the life cycle transition probabilities among private employment, public employment, unemployment, and non-participation to answer whether transitions in and out of public employment are important in shaping life cycle work patterns. Results show that the flow from public to private employment is key in determining the different life-cycle profile of public and private employment. Furthermore, after the financial crisis, transitions into public employment remained constant however, the public employment separation increased.

#### **Stagnant Wages, Sectoral Misallocation and Slowing Productivity Growth**

**Michaela Schmöller** (Bank of Finland)

I propose a two-sector endogenous growth model with heterogeneous sectoral productivity and sector-specific, nonlinear hiring costs to analyse the link between sectoral resource allocation, low productivity growth and stagnant real wages. My results suggest that an upward shift in the labor supply, triggered for instance by a labor market reform, as among others implemented in Germany in 2003-2005, is beneficial in the long run as it raises growth of technology, labor productivity and real wages. I show, however, that in the immediate phase following the labor supply shock, labor productivity and real wages stagnate as employment gains are initially disproportionately allocated to low-productivity sectors, limiting the capacity for technology growth and depressing real wages and productivity. I demonstrate that due to the learning-by-doing growth externality in the high-productivity sector the competitive equilibrium is inefficient as firms fail to internalize the effect of their labor allocation on aggregate growth. Subsidies to high-productivity sector production can alleviate welfare losses along the transition path.

#### **Connecting the dots: A bibliometric analysis of the link between standardization and economic growth**

**Jussi Heikkilä** (JSBE, Nokia Technologies), Julius Rissanen

We analyze the attention that is allocated to the link between standardization and economic growth by systematically reviewing leading economics journals, leading economic growth researchers' articles and economic growth related books. The following observations are made: No article has analyzed the link between standardization and economic growth in top5 economic journals between 1996 and 2018. A (representative) sample of leading researchers of economic growth has allocated little attention to the link between standardization and economic growth. Typically, economic growth textbooks do not contain "standards" or "standardization" in their word indexes. To summarize, economic growth theory has, thus far, neglected the role of standardization.

#### **Growth and stagnation under conditions of oligopoly**

**Johan Willner** (Åbo Akademi University), Sonja Grönblom

We analyse economic growth as driven by process innovations generated by employed agents under conditions of asymmetric information and oligopoly. This approach is consistent with Krippendorff (2019) and others who emphasise the input of innovators within firms and other organisations rather than by entrepreneurs. We focus on a multi-period framework. The agents responsible for innovations are faced with two types of uncertainty. There is technical uncertainty related to the fact that the impact of efforts on cost efficiency is stochastic, but there is additional uncertainty related to the possibility of the work contract being terminated or to other forms of arbitrary punishments. The analysis is also extended to potential intrinsic motivation. The model suggests that markets with two or three firms (depending on the details of the model) generate the highest innovations-based growth, in line with Schumpeter (2003/1942) and Aghion et al (1995). Short-termism (as reflected by the discount factor) would reduce the incentives for a firm to pay for R&D. A similar effect would be caused by uncertain working conditions or arbitrary punishments that generate a climate of fear (such as in the case of Nokia; see Vuori and Huy, 2016). A third factor is associated with motivation crowding out, which may also become more likely under uncertain working conditions. However, an oligopolistic market would always underperform as compared to an ideal social planner.

#### **Firm premiums, individual performance and the gender wage-gap**

**Aspasia Bizopoulou** (VATT), Tuomas Pekkarinen

Firm-specific pay premiums are a source of wage inequality. Previous research shows that firm premiums contribute to the gender wage-gap (GWG) through i) women being less likely to work at high-paying firms and ii) women negotiating a smaller share of the firm rents than men. We replicate the results for Finland following the adaptation by Card, Cardoso and Klein (2016) of the Abowd, Kramarz and Margolis (1999) methodology. Identification is based on studying workers who move between firms. We subsequently extend the analysis to incorporate the role of the individual performance wage component available in Finland, to explain the contribution of firm-specific performance pay to the GWG.

#### **Do girls choose science when exposed to female science teachers?**

**Aino-Maija Aalto** (SOFI, Stockholm universitet)

Same-gender teachers may affect educational preferences by acting as role models for their students. I study the importance of the gender composition of teachers in math and science during lower secondary school on the likelihood to continue in math-intensive tracks in the next levels of education. I use population wide register data from Sweden and control for family fixed effects to account for sorting into schools. According to my results, the gender gap in graduating with a math-intensive track in upper secondary school would decrease by 16 percent if the share of female math and science teachers would be changed from none to all at lower secondary school. The gap in math-related university degrees would decrease by 22 percent from the same treatment. The performance is not affected by the higher share of female science teachers, only the likelihood to choose science, suggesting that the effects arise because female teachers serve as role models for female students.

#### **Islamic Schools and Female Education**

**Tolga Benzer** (Aalto University)

I study the impact of having access to religious education as an alternative to secular education on educational attainment and labor market outcomes of women. I exploit a ruling of the Council of State in 1976 that allows female students to attend religious schools in Turkey legally. Combining the differences in the religious school availability in district centers with differences in access to religious schools across cohorts, I find that educational attainment of cohorts in district centers with a religious school increased by 2.5 percentage points (8%) compared to cohorts in control district centers after the ruling. Subsequently, I study the labor market and fertility outcomes. Labor force participation increased, and the total number of births given at earlier ages decreased for the affected cohorts.

#### **On the choice between price and quantity instrument under endogenous lobby formation**

**Pauli Lappi** (Helsingin yliopisto)

The choice between emission tax and emission quotas and the choice over the level of the instrument is analysed in a political economy model with endogenous lobby formation. The regulated firms can influence the choice between the instruments in addition to the level of the instrument. The equilibrium of the multi-stage game is characterized. It is shown that if some of the firms do participate in the lobby group, then the level of either instrument is different from the level that results in the social optimum. Sufficient conditions for the existence of non-null lobby group are presented in addition to a condition that results in a group that consists of firms with the lowest participation costs. Furthermore, it is found in a special case of the general model, that the firms who expect to be lobbyists will unambiguously favour quotas over price, and can induce the regulator to choose quotas. This results in a welfare loss compared to social optimum.

#### **Unobserved preferences and expectations in dynamic platform pricing**

**Hannu Huuki** (Suomen ympäristökeskus (SYKE)), Rauli Svento

We study the dynamic optimization of platform pricing in industries with positive direct network externalities. The utility of the network for the consumer is modelled as a function of three components. Platform price and network size (participation rate) affect the consumer's decision to join the platform. The platform operator is assumed to know the consumer's sensitivities with respect to these components. In addition, consumer's utility is a function of other attributes such as network privacy policies and environmental effects of the service. We assume that the platform operator knows the distribution of these preferences in the potential customer base. Our modeling results concentrate on the role of these unobserved preferences in dynamic platform price setting. Both naïve and rational expectations with respect to the platform participation are presented. We show that the platform operator subsidizes the early participators. The platform operator can increase the initial pricing if it can affect the preferences or expectations.

#### **Networks and Walrasian Equilibria**

**Hannu Salonen** (Turun yliopisto)

Exchange economies can be viewed as undirected bimodal networks in which consumers and markets are the disjoint node sets, and a consumer is linked with those markets in which she acts either as a seller or a buyer. In case the link strengths are the Walrasian equilibrium prices, we show that the Bonacich centrality measures of consumers can be expressed as a weighted sum of equilibrium prices, when the weights are the Bonacich centrality measures of the markets. Conversely, the Bonacich centrality measure of a given market is the equilibrium price in that market times the sum of the Bonacich measures of consumers active in this market. Exchange economies can also be viewed as directed bimodal networks where consumers as sellers and consumers as buyers are represented as the disjoint node sets. If the link strength between a seller and a buyer is measured by the equilibrium flow of "money" between these agents, we show that the Bonacich centrality of a buyer (seller) can be expressed as a weighted sum these flows, where the weights are the Bonacich centrality measures of the sellers (buyers).

#### **Optimal search for the best alternative with agency**

**Andrey Zhukov** (Aalto University)

I study a model of optimal search for the best alternative as in Weitzman (1979). Contrary to Weitzman, there are boxes a decision-maker cannot open on her own, and therefore has to hire a particular agent to do it on her behalf. The agent's rents arise from non-observability of effort for which he must be reimbursed up-front. In the first-best, the decision-maker can inspect all the boxes on her own. Nonetheless, I find that eliminating agency and allowing the decision-maker to inspect a given box herself might have detrimental consequences for social welfare. I provide an example of such socially beneficial agency, and discuss necessary and sufficient conditions for the agency relationship to increase welfare.

#### **Market inefficiency, entry order and coordination**

**Yi Zheng** (University of Helsinki), Klaus Kultti

The causes of market inefficiency are many. We suggest an additional cause - buyers' random entry order. In a market where identical sellers compete for buyers of heterogeneous valuations, first come first served. Since all buyers choose the cheapest available good, a low-valuation buyer who enters the market late may find the remaining goods not affordable, which causes markets not to clear. We therefore propose a coordination solution to the market inefficiency problem. We find that in a market where all the high-valuation buyers enter first and all the low-valuation buyers enter afterwards, the market would clear effectively. Moreover, we find the inefficiency arising from buyers' entry order becomes less of a problem in larger economy and vanishes in the limit.

#### **Censorship and Reputation**

**Daniel Hauser** (Aalto University)

There is a large literature that studies how a firm's desire to manage its reputation creates incentives for investment in quality. An important aspect of this problem is how a firm can influence the information consumers see by manipulating the monitoring structure. I study a model where a firm invests in the quality of its product and can engage in costly censorship, preventing consumers from seeing negative information about its products. When the only way to prevent bad news is to produce a high quality product, the threat of bad news provides strong incentives for investment. In contrast, when the ability to censor is sufficiently cheap the firm loses these reputational incentives. In the unique equilibrium, the firm never invests in quality and eventually consumers are certain that it is selling a low quality product. On the other hand, a firm benefits from sufficiently expensive censorship. It can use censorship to avoid reputation traps, large losses in its reputation that are impossible to recover from. A sufficiently patient firm that has access to an expensive censorship technology obtains approximately the payoff it would receive if quality and investment were observable by consumers.

#### **Staged equity financing – who, when and why?**

**Tuomas Takalo** (Suomen Pankki, VATT), Magnus Blomkvist, Timo Korkeamäki

We examine the impact of valuation uncertainty on staged equity financing. We explain why a large number of firms choose to return to the equity market shortly after their initial public offering (IPO). We argue that hard to value firms conduct smaller IPOs, and that they return to the equity market if they receive positive information about their valuation from the stock market, in the form of positive post-IPO returns. We test the implications of this argument using a sample of 2,461 U.S. IPOs between 1.1.1981-31.12.2014. The results are in line with our expectations. Hard to value firms are more likely to return to the equity market within two years of their IPO. For those firms we find a strong relation between post-IPO alphas and the likelihood of a follow-on secondary equity offering.

#### **Entry in Public Procurement: Evidence from Finland**

**Jan Jääskeläinen** (Aalto University)

I analyze firms' entry decisions in public procurement using municipal procurement data from Finland. The main variable of interest is firms' decision to bid in a tender. I use a probit model to analyze which observable factors affect firms' decision to bid such as firm's size, experience in public procurement and distance to contracting authority. I supplement the reduced form analysis by applying structural models to the data.

#### **Dependencies, firm size, growth and exports**

**Ilkka Kiema** (Palkansaajien tutkimuslaitos), Sakari Lähdemäki, Hannu Karhunen

It has often been argued that most estimates of the role of small companies within the Finnish economy are exaggerated, since they view small firms which belong to corporate groups as separate economic entities. Utilizing Statistics Finland firm-level data on firms and corporate groups, we distinguish between two methods of correcting the bias from disregarding the role of corporate groups. The bias turns out quite significant while considering job creation, output growth, and exports of small firms. It turns out the role of independent small firms within the exports of services is almost negligible. Using more customary tools, we assess the relationship between firm size, job creation, and productivity, taking into account the dependency status of firms. Our analysis supports the familiar results that the net job growth is larger among small than large firms, and larger among independent than dependent firms. For small firms, productivity growth turns out to be larger for dependent than for independent firms. We also relate our results to the earlier empirical work by Fornaro and Luomaranta.

#### **Investments in information security**

**Anna-Maija Juuso** (Oulun yliopisto), Rauli Svento

Information security investments are economic decisions made by actors based on the information that is available to them. Often, this information is lacking and the uninformed decisions also have a negative impact on other actors. We conduct a survey to investigate how organizations invest in information security and to examine their willingness and ability to collaborate and engage in threat intelligence (TI) sharing. Despite the fact that the respondents mainly represent large organizations that are active in information security collaboration, the share of ICT and information security outsourcing is high and a quarter the respondents state that their organization has no internal information security team. Nevertheless, the majority of the respondents view threat intelligence sharing as a cost-effective means of improving information security. Our results show that information security investment models with dedicated security teams do not apply to the majority of organizations. We argue that in most organizations information security decisions are purchasing decisions. The organization's willingness to invest in information security is measured by their readiness to pay extra for more secure goods and services.

#### **Maternal Age and Child Outcomes**

**Kristiina Huttunen** (VATT, Aalto University), Peter Fredriksson, Björn Öckert

This paper analyses the effects of maternal age-at-birth on children's birth and long-term outcomes using Finnish register data. We exploit maternal school-starting-age rules to create exogenous variation in age-at-motherhood. School-starting-age increases age-at-motherhood, but it has no effect on maternal education, in the Finnish context. Age at motherhood reduces the birth weight of the child and gestation is shorter. There is no evidence suggesting that children's long-term outcomes, such as schooling, employment or criminal behavior, are affected, however. Moreover, there is no impact of age on maternal pre-birth behavioral outcomes, such as smoking. In general, there is strong selection into early motherhood.

#### **The effects of early maternity leave reforms in Finland**

**Claudia Troccoli** (Aalto University)

I study maternity leave reforms in Finland and their effects on children's education and future earnings, as well as long-term effects on mother's labour market outcomes. I focus on the 1964 introduction of a 9 week maternity leave and the 1974 reform that lengthened maternity leave from 12 to 29 weeks. The unique institutional framework allows me to compare effects at the extensive and the intensive margins. Treating exact birth dates as random, I implement a regression discontinuity design and compare children born just before and just after the introduction of the reform. Preliminary analysis of children outcomes shows that there were no clear positive effects of the introduction of the reform on children's probability of dropping out of high school, passing matriculation exam, obtaining a tertiary degree or on their earnings at age 35.

#### **Does healthy lifestyle in childhood improve education outcomes? Evidence from randomized intervention**

**Jutta Viinikainen** (Jyväskylän yliopisto)

Using a randomized controlled trial we examine how life-style intervention which started at infancy and continued for 20 years affects school performance and educational outcomes. We find that intervention led to better school performance and increased the probability to participate in university-level education among boys and children from lower socioeconomic backgrounds. In consequence, the intervention decreased gender and socioeconomic differences in educational attainment. We also study potential pathways through which the intervention may have led to better educational outcomes. We find that the intervention accelerated boys' pubertal development. Strikingly, we also find that the intervention decreased gender and socioeconomic differences in parental body mass index. As far as accelerated pubertal development enables boys to make appropriate educational decisions and reduced body mass promotes parental involvement in their children's lives these pathways may explain the reduced differences in educational outcomes between genders and socioeconomic groups. Our findings provide support for the perception that early interventions may promote equality of educational opportunity.

#### **Monetary policy with heterogeneous financial markets**

**Adam Gulan** (Bank of Finland)

We develop a dynamic stochastic general equilibrium model of a closed economy to study monetary policy transmission in an environment where firms have access to different forms of financing. Embedding financial frictions à la Holmström Tirole (QJE, 1997) allows us to create financial markets in which well-capitalized firms are financed through bond markets whereas less capitalized firms have to rely on more costly bank lending. Firms with least equity obtain no funding. This setup makes the financing structure endogenous and not only allows to study the financing mix but also the extensive margin. The framework naturally encompasses several monetary policy propagation channels studied in the empirical literature (e.g. the bank lending channel, broad credit channel). It allows to study the effectiveness of monetary propagation depending on the nature of the financial markets, relative size of the banking sector. It also allows to analyze consequences of building deep capital markets, like the Capital Markets Union, for the conduct of monetary policy.

#### **Does my model predict a forward guidance puzzle?**

**Nigel McClung** (Bank of Finland)

We provide sufficient conditions for when a rational expectations structural model predicts bounded responses of endogenous variables to forward guidance announcements. The conditions coincide with a special case of the well-known (E)xpectation-stability conditions that govern when agents can learn a Rational Expectations Equilibrium. Importantly, we show that the conditions are distinct from the determinacy conditions. We show how the conditions are useful for diagnosing the features of a model that contribute to the Forward Guidance Puzzle and reveal how to construct well-behaved forward guidance predictions in standard medium-scale DSGE models.

#### **Monetary policy autonomy in a small open economy: Evidence from some inflation-targeting countries**

**Samu Kärkkäinen** (Jyväskylän yliopisto), Kari Heimonen

We examine the monetary policy autonomy vis-à-vis the United States in several inflation-targeting, floating exchange rate economies, focusing on the pre-financial crisis period. We approach the issue from two distinctive angles. On the one hand, we consider the impact of the Federal Reserve policy rate on the domestic interest rates in a conventional Taylor rule framework. On the other hand, we aim to disentangle the dynamic effects of the U.S. monetary policy shocks on domestic policy instruments using the Local Projections approach following Jorda (2005). Both approaches yield results that lend support to the view that even countries with supposed monetary independence have faced a non-negligible constraint in the U.S. monetary policy. Finally, we also consider whether the central banks of interest have employed foreign exchange interventions as a tool to enhance their monetary autonomy with respect to the U.S.

**The effect of reporting institutions on tax evasion: Evidence from the lab****Satu Metsälampi** (University of Turku), Kaisa Kotakorpi, Topi Miettinen, Tuomas Nurminen

We study the effects of different tax reporting mechanisms in experimental double auction markets in the laboratory. The sales tax is paid by the seller, and we compare market outcomes in a no-tax condition to cases where (i) tax evasion is impossible, (ii) taxes can be evaded but there is an exogenous (low) audit probability, or (iii) there is double-reporting by both the buyer and the seller, and the seller's audit probability is endogenously increased if her tax report is inconsistent with the buyer's report. The latter case mimics the use of so called third-party reporting in tax enforcement. We find that third-party reporting effectively deters evasion, and deterrence also has real effects on market outcomes: market clearing prices, quantities and overall efficiency return to the levels observed when tax evasion was impossible. When reporting is costly to buyers, they report significantly less trades. Tax compliance by sellers however remains at a relatively high level, even though payoffs would be maximized for both parties if no trades were reported. This suggests that the mere possibility of the existence of third party information may be a fairly effective deterrent on tax evasion, and tax administrators might consider making their information sources more widely publicized.

**Equity aspects of business income tax complexity: is complexity progressive or regressive?****Aliisa Koivisto** (VATT, University of Helsinki)

When planning a tax code and interpreting its effects, the assumption that the tax payer understands the tax schedule is crucial. However, tax codes in many developed countries are highly complex. Especially, taxation of business owners is often very complicated. Usually, the complexity arises from policy aims to reduce distortions related to investment and effort, while including progressivity due to equity reasons. Therefore, the tax schedule may include many deductions, different tax bases and differences across corporate forms. Moreover, business owner's income is often a mix of returns to capital invested to the firm and reward on the labour inputs. Recent empirical research by Feldman et al (2016) and Zwick (2018) show that taxpayers, both firms and individuals, might not be fully aware of all the features of taxes and transfers. This raises the question; weather tax policies achieve their aims in a way usually expected in optimal tax research. One important target of tax policy is its distributional effects. A feature of good taxation: horizontal equality, is not achieved, if some manage to optimize their taxes while others do not, indeed this shown to happen in Feldman et al (2016) and Zwick (2018). However, it is also important to understand how tax complexity affects the vertical equity of taxation. Vertical equity is not as planned if tax complexity changes the progressivity of taxation. If wealthy owners of larger firms for example hire a better accountant, it may be that they optimize better, than entrepreneurs with lower income. On the other hand, it may be that lower income business owners find few extra euros saved by optimizing more valuable and hence optimize better. Given that not all business owners optimize perfectly it is likely that the complexity affects the progressivity of the schedule. This research studies how Finnish business owners succeed in optimizing their taxes and how complexity affects the progressivity of the tax schedule. This is first or one of the first studies to provide empirical evidence on the vertical equity concerns of tax complexity.

#### **Coalition Formation and History Dependence**

**Matti Hovi** (Tampereen yliopisto), Jani-Petri Laamanen

Previous evidence from individual-level cross-sections from single countries suggest that well-being effects of rising incomes are at least partly offset by an associated rise in income aspirations. We extend the analysis to cover European countries. We use individual-level data on Europeans' subjective well-being, income and aspirations from year 2013 (EU-SILC well-being module) and individual panel data (EU-SILC longitudinal) on income and aspirations. Earlier findings on the negative role of income aspirations are shown to hold internationally. Further, a more elaborate analysis on how income aspirations are determined by income developments is conducted.

#### **Labour mobility – The role of joint work history with colleagues**

**Jukka Perttunen** (Oulun yliopiston kauppakorkeakoulu), Karhinen Santtu, Simonen Jaakko, Svento Rauli

The study aims to find out to what degree becoming employed in a firm depends on earlier collegial relationships with the current employees of the firm. The empirical data consists of workers (hereafter movers), who change their employer within the high-tech industry in a particular year. For each of these movers, alternative target firms (hereafter targets) are identified and included in the data as mover-specific observations. Next, separately for each of the targets, we identify all their current employees having a former common work history with the mover. The total number of former common work-years in a target is used as the measure of the degree of collegial relationships of the mover with a target firm. We distinguish the impact of different kinds of collegial relationships related, for example, to the occupational level and duration of the former common work history. A logistic regression model is used to explain the choice of the mover between the alternative targets by the degree of collegial relationships. As controls, we include number of variables, which should capture the probability of ending up to a target firm, with the background of the mover, without any earlier collegial relationships with the employers of the firm.

#### **Multiple job holding in the changing labour market**

**Merja Kauhanen** (Labour Institute for Economic Research)

Rapid technological transformation, globalisation, and demographic change are mega-trends that are transforming labour markets and the structure of employment. These mega-trends have also brought with them more diverse forms of work. Part of this diversification of work relationship is the rise of multi-activity at work: workers holding several jobs and multiple income sources at the same time. Multiple job holding has become more common also in Finland, but there is still only scarce research on the topic related to the Finnish labour market. The aim of the paper is to provide new research evidence on the determinants of multiple job holding as a whole and its different types and the persistence of multiple job holding. The data utilised in empirical analyses (statistical models) is Statistic Finland's register-based combined employee-employer data from 1995-2017. The preliminary results suggest that men, younger and more educated, professionals and service and sales workers are more likely to hold multiple jobs. There also exists considerable persistence in multiple job holding over time.

#### **The drivers of intra- and inter-regional labour mobility over the industry life-cycle**

**Jaakko Simonen** (Oulun yliopiston kauppakorkeakoulu), Karhinen Santtu, Svento Rauli, McCann Philip

One of the most important reasons for the emergence of industrial agglomeration are the benefits which local (skilled) labour pool provides for firms. The geographical proximity of many firms generally assumed to facilitate job-matching and employment switching. Labour mobility between firms is argued to be an important means of transferring knowledge and fostering innovation too. However, current literature provides very few empirical studies where labour mobility has been clearly linked to the spatial distribution of activities, especially over the industry life cycle. In this paper we analyse how regional features, e. g. regional amenities, industrial structures as well as individual characteristics of employees e.g. age, family status, previous movement affect regional labour mobility along the industry life-cycles of high technology sector. In order to do this, we employ panel data on the regional and industrial labour mobility of the Finnish high technology firms and regional economies. Our findings show that structure of the high technology sector as well as regional economic and amenity variables and individual characteristics of employees have an influence on the migration decisions of the high technology workers, although their roles vary in within-region and across-region mobility as well as at the different stages of the industry life-cycles. Moreover, the role of regional economic factors are analysed from the point of view of the origin and receiving region, as well as rising and declining industries.

#### **The net costs of the Finnish feed-in tariff system for wind power**

**Santtu Karhinen** (Suomen ympäristökeskus), Ludi Wang

The Finnish feed-in tariff system has been in place since 2011 to encourage wind power production. While the scheme has been successful in boosting wind power investments, it has also received criticism for being too generous in comparison to the actual investment costs. While this is true, a proper evaluation of the impacts of wind power in Finland remains missing. According to the existing literature from other countries, wind power has a dampening effect on the day-ahead market prices, indirectly benefiting final users. On the other hand, the intermittent nature of wind power output is likely to generate additional imbalance power costs. In this study, we make an empirical assessment of the monetary impacts of wind power in Finland. First, we estimate the impact of hourly wind power output on the day-ahead market prices with a system of Seemingly Unrelated Regressions. Next, we estimate the impact of wind power forecast errors on the imbalance power costs. Finally, we evaluate these price and cost impacts against the cost of the feed-in tariff system. Our results provide an important insight into policy design that properly accounts for market dynamics.

#### **Split incentives in heating technology investments**

**Anna Sahari** (VATT)

Investments into durable goods may not be cost-minimising when the purchase cost and the cost of use are faced by different actors. When constructing new dwellings, property developers may have an incentive to equip the building with structures and technology which are cheap to install but lead to high costs of use over time. Such behaviour is profitable if housing markets do not fully internalise the lifetime living costs specific to each house or if the quality of the structures and technology are difficult to assess. This paper examines this phenomenon in the context of heating systems installed into new houses in Finland. Heating systems are characterised by large differences in upfront costs and use costs which accrue over a long period of time. Use costs constitute most of the total cost of any heating system. If these costs are not capitalised into house prices, property developers may place a higher emphasis on the upfront cost of the system. This can result in a stock of heating systems that does not minimise total heating costs. Also, it may hinder installations of ground source heat pumps which utilise cheap, emission-free geothermal energy but have very high upfront costs. Using register data on detached residential houses built in Finland during 2000-2011, I find that a house is 15 percentage points more likely to be fitted with electric heating if the house is built by a private person who sells the house within 4 years of building. Houses that are built by private or limited companies are 33 percentage points more likely to have electric heating.

**Determinants of innovative supplementary heating system choice and the level of adoption consideration****Jouni Rähkä** (Oulu Business School), Enni Ruokamo

Space heating, cooling and domestic hot water represent nearly 80% of household energy consumption in the EU. Detached house owners could often make a meaningful contribution to cleaner production by adding an innovative supplementary heating system. However, underinvestment in energy efficiency improvements is pervasive due to numerous cognitive biases and uncertainties. Through randomly sampled survey answers given by 432 newly built detached house owners in Finland, we examine the determinants of adoption and level of consideration of adding at least one efficiency-improving supplementary heating system. The systems under study are the solar panel, solar thermal heater, air-source heat pump and water-circulating fireplace, with realized purchase decisions recorded from households. We employ logistic regression methods to examine the discrete choice and interpret the results vis-à-vis diffusion of innovations literature. We discover that house-specific factors, information channels and location all impact the adoption decision. Responses to hybrid heating claims strongly imply the lack of unbiased information. Receptiveness to hybrid generation is generally fair but varies among households. Thus, comparison tools and direct communication should be developed and promoted to address the potential knowledge gaps.

#### **Short-term impacts of GDPR on firm performance**

**Heli Koski** (Etila)

In May 2018, the General Data Protection Regulation (i.e., GDPR) came into force in all European Union countries. This regulation meant a drastic change in the European data privacy regulation by giving individuals a substantial control over their personal data. At the same time, it obliged any organization active in the area of European Union to ensure that they collect, store and process personal data in compliance with the GDPR. Achieving and maintaining compliance with the GDPR has increased the costs of companies dealing with EU citizens data – yet, it is not well understood what the actual magnitude of these effects is, and whether the effects vary across different types of firms and across different industries. Our empirical work using large dataset of over one million companies indicates that it has been, by and large, small and medium sized European companies that have been hit hard by the GDPR. This is reflected in their declining financial performance in comparison to their counterparts outside the EU area. Furthermore, particularly companies active in the data-intensive sectors have clearly faced higher financial burden than other companies due to GDPR.

#### **The Impact of Stock Market Development on Private Sector R&D**

**Martina Baumann** (Institute for Employment Research Nuremberg )

The aim of the paper is to shed light on the impact of stock market development, used as an index for equity market access, on corporate R&D activities of domestic and multinational firms. Easier access to equity finance should increase R&D investment by firms. Multinational affiliates should be less dependent on national stock market development than domestic firms, as they can make use of internal firm channels for financing R&D investments. I use rich panel data on patent applications to the European Patent Office (EPO) to proxy for R&D activities of multinationals and domestic firms in more than 25 countries and link the data to country level indices of financial market development. In order to account for the count nature of the dependent variable I estimate conditional Poisson models with fixed effects. Making use of different country level indices for the development of the national stock market, I, in line with previous studies, find that higher stock market development is associated with more R&D activity of multinational affiliates and domestic firms. Quantitatively an increase in stock market development by one standard deviation increases corporate R&D activities by around 8 percent. These results prevail in robustness checks that use an alternative proxy for financial market development and lag the explanatory variables.

#### **Privatization in competitive environment: evidence from Finland's manufacturing sector** **Sakari Lähdemäki** (Labour Institute for Economic Research)

I study the effects of privatization on establishments/plants that operate in a competitive environment. The focus is on the possible effect on the operating efficiency (sales/employment) in such establishments. Moreover, I focus on the establishments of companies that were state-owned and operate in Finnish manufacturing industries. My focus is on establishment/plant-level data and more so in establishments that exist the whole period I study. My sample consists of 83 such establishments which go through privatization (state ownership of the company the establishment belongs to drops below 50 %) during the 1988-2012 time period. For 60 of them I have data for the exact share of state ownership. Using this information, I also study the effects of any reduction in state ownership. I study the possible effects with event study design. Furthermore, a control group is formed by matching private establishment to form difference-in-difference estimates of the effects of privatization. The preliminary results indicate that privatization increases operating efficiency (sales/employment). Moreover, it seems that this increase is due to a decrease in employment after privatization. Since it seems that privatization reduces the employment level of establishments, I try to further address this aspect by studying how privatization might affect the average level of education, wage and age of workers in treated establishments.

#### **Drivers of household consumption expenditure and carbon footprint in Finland**

**Hannu Savolainen** (Suomen ympäristökeskus), Marja Salo, Santtu Karhinen, Ari Nissinen

Household consumption patterns pose a vast challenge for climate change mitigation. For instance, in Finland in 2015, 66% of the country's consumption-based greenhouse gas (GHG) emissions resulted from household expenditure. In order to curb the carbon footprint of household consumption, we need better understanding of patterns and drivers of household consumption expenditure and the derived carbon footprint. In this paper, we use regression analysis to explore the effects of various household characteristics on consumption expenditure and derived carbon footprint. We use the Finnish Household Budget Survey (HBS) 2016 data on household consumption expenditure. Carbon footprints are calculated by combining expenditure data and life-cycle GHG emission intensities derived from an environmentally extended input-output model. Two research questions guide the analysis of this study: 1) What are the drivers of household consumption expenditure and derived carbon footprints in Finland? and 2) How differences in consumption patterns and commodity bundles affect household carbon footprints? The paper complements earlier studies on carbon footprint assessments and contributes on exploring the drivers of household consumption (demographic, spatial, socio-economic etc.).

#### **Households, credit-scoring and social exclusion – an empirical analysis of the access to finance in Europe**

**Ilja Kristian Kavonius** (Centre for Consumer Society Research, University of Helsinki), Päivi Timonen, Juha Honkkila

The access to finance is one of the defining factors in participating in the modern society. The banks are increasingly using credit-scoring, which are based on the socio-demographic characteristics of a loan applicant. These credit-scoring criteria are not publicly available but they increasingly define social inclusion in the western societies: (1.) by actually declining credit applications; and (2.) by self-exclusion, i.e. by creating implicit thresholds for accessing to finance, i.e. creating barriers for households that they are not applying credit. This paper investigates these credit-scoring criteria in different European countries by analysing the Household Finance and Consumption Survey (HFCS). This is done in a simple fourfold analysis in relation to the different population groups in different European countries and finally, by clustering the different household types by using the Self-Organizing Maps (SOM). We conclude that the defining factor of access to finance is employment, which is followed by wealth, age, size of households and income. It is notable that in several countries, which had deep economic problems during the 2008 financial crisis, like Ireland and Spain, households have difficulties to access to finance. In Germany and France, which are not really crisis countries, seem to have considerable tighter financial markets than the other European countries.

## Abstracts

Room  
Tapuli

Session 3c: Household Finance and Consumption (cont.)

### **The Effect of Information Nudges on Energy Saving: Observations from a Randomized Field Experiment**

**Teemu Meriläinen** (Suomen Ympäristökeskus SYKE, Oulun yliopisto), Santtu Karhinen, Enni Ruokamo, Rauli Svento

Electricity remains a poorly understood area of spending among households. Due to this general lack of awareness households are likely to miss out on their energy saving potential. This is where information related behavioral interventions can have a meaningful role. This paper evaluates the impacts of information nudges on residential electricity consumption with a randomized field experiment. The aim is to find out whether i) energy saving tips, and ii) online service tool providing comparative electricity consumption information (i.e. social norm) influence households' electricity consumption. The data includes overall 671 treatment and control households from the Porvoo area in Finland. This opt-in experiment was conducted between November 2018 and December 2019. Information was administered via monthly e-mail newsletters and an online energy service platform. To estimate the effects different information treatments a difference-in-difference model is utilized. The results show a high seasonal variation in the treatment effects within the groups who were already registered users of an online energy service platform. Those with access to usage feedback and energy savings tips (without the social norm comparisons) reduced their electricity consumption around 4% in winter time. The results imply challenges in encouraging any energy saving behaviour within the non-registered group of households, to whom the energy related issues might be of less interest.

**The Effect of QE in Euro Area****Mika Kortelainen** (Bank of Finland)

We study the effectiveness of large scale asset purchases in Eurozone. We apply Chen, Cornea and Ferrero (2012) model that creates a financial friction to break Wallace's neutrality. We estimate this model with available euro area data. We calibrate a bond supply shock that corresponds to the observed change in the time premium in euro area when APP program was introduced. Our initial results suggest that the impact effect of asset purchase program increased output growth and inflation but only marginally so in an estimated general equilibrium model with financial frictions.

**Monetary policy regimes and financial market uncertainty****Annika Kuusela** (Jyväskylän yliopiston kauppakorkeakoulu), Juha Juntila

This paper investigates the interaction between monetary policy regimes and financial market uncertainty with U.S. and euro area data. We use Markov-switching generalized autoregressive conditional heteroskedasticity (MS-GARCH) model to identify different monetary policy regimes. Then we estimate a vector autoregressive (VAR) model to examine the impact of uncertainty shock in different monetary policy regimes. We find that both the Federal Reserve's (Fed) and the European Central Bank's (ECB) monetary policies can be described by three different monetary policy regimes. We show that our estimated monetary policy regimes follow the balance sheet expansions of the Fed and the ECB during the quantitative easing (QE) operations. We also find that uncertainty shock leads to easier stance of monetary policy in all of our estimated monetary policy regimes.

**Structural vector autoregression for the study of conventional and unconventional monetary policy****Jaakko Nelimarkka** (Valtiovarainministeriö)

After the Great Recession, the main evolution in monetary policy has been its attempts to affect the medium and the long term rates with instruments other than the policy rate. Consequently, measuring the stance of monetary policy by a single interest rate becomes problematic. We present a structural vector autoregression with three monetary policy shocks that influence the interest rates of different maturities. These shocks reflect various aspects of actions and communications of the central bank under conventional and unconventional monetary policy periods. During the era of unconventional monetary policy these shocks measure the effects of three policy instruments used by the European Central Bank: the asset purchase programmes, forward guidance and interest rate policy. According to the results, the macroeconomic effects of conventional interest rate policy, forward guidance and quantitative easing differ in how they affect output and prices.

#### **Self-Selection of Emigrants: Role of Returns to Skills and Taxation**

**Ilpo Kauppinen** (VATT), Salla Kalin, Kaisa Kotakorpi, Jukka Pirttilä

In this research project we use full population administrative data to study self-selection of emigrants from Finland. We also aim to study how cross-country differences in returns to skills and taxation explain the observed migration patterns. According to our preliminary analysis, Finnish emigrants are positively self-selected. Those with higher educational qualifications, as well as those working in managerial and professional positions are more prone to emigrate. Migrants from Finland also earn more than non-migrants, even though annual gross income is only weakly associated with emigration in the regressions controlling for socioeconomic background characteristics and education or occupational position. According to our econometric analysis, the estimates for the elasticity of migration to the net-of-tax rate in a potential destination are positive and statistically significant.

#### **The impact of local property taxation on firm growth and location: evidence from Flanders**

**Sander Ramboer** (VATT, KU Leuven), Diego Moreno

Determinants of firm growth and location patterns are many and often unobserved. Furthermore, their spatial variation is likely to swamp out the role played by local taxation. In this paper, we set out from this observation to causally identify the effect of property taxation on firms' employment and location decisions. By zooming in on firms and entrants clustered near municipal borders, local pull and push factors are accounted for through spatial differencing. This identification approach is enhanced by instrumental variables and by taking into account previously overlooked place-based policy, which is shown to otherwise bias the property tax effect. The results provide strong evidence for a negative impact of property taxation on employment growth and firm entry.

#### **Firms and tax audits - Evidence from risk based tax audits in Finland**

**Annika Nivala** (Turun yliopisto, VATT), Jarkko Harju, Kaisa Kotakorpi, Tuomas Matikka

This paper studies firm responses to tax audits using full population data on operational tax audits and tax returns in Finland. Studying risk based audits can provide important evidence for tax enforcement policy, as risk based audits are a central tool in firm tax enforcement. We first describe the type and behavior of the audited firms. Large firms, limited companies and some industries are more likely to be audited, and the audited firms first grow faster but start shrinking in size before the audit compared to firms that are not audited. We use matching to account for the observed differences in firm characteristics and trend to account for the selection into audit. Comparing the observationally similar audited firms to unaudited, we find the audited firms permanently increase reported profits after getting audited. This seems to come through an increase in reported turnover rather than a decrease in costs. Increase in reported labor costs and paid dividends of the audited firms may indicate there are also spillovers to individual tax compliance.

**Partisanship in political speech: Text-based analysis of Finnish parliamentary debates 1907-2018**  
**Salla Simola** (Aalto-yliopisto)

In this project, I study partisanship in political speech using transcripts of the debates in the Finnish parliament during 1907–2018. The measure of partisanship aims to capture how easy it is to guess a parliament member's party on the basis of a single utterance. Phrase-level partisanship measure is constructed from parties' relative phrase choice probabilities, which are contrasted with the phrase choice probabilities of speakers from other parties. The yearly measure of overall partisanship averages the phrase-level partisanship measure over all corpus phrases and active parties. To avoid finite sample bias that arises when the number of choices is very small relative to the number of alternatives, I use predicted probabilities from a LASSO-penalized multinomial logistic model. The estimation of the model becomes feasible when the parameters are computed using the conditional Poisson approximation for the multinomial logistic likelihood function. The paper provides new evidence on party differences in political speech in Finland for a period of more than 100 years.

**A Machine Learning Analysis of Geographic Localization of Knowledge Flows**  
**Mikko Packalen** (University of Waterloo), Joel Blit

We re-examine whether knowledge flows are localized by applying machine learning to patent texts to map the position of each patent in a vector space representation of the technology space. We first apply this new technology space representation to show that technology classification-based localization analyses are likely to yield biased results as we observe geographical agglomeration within patent classes and subclasses, thus contributing to the debate begun by Jaffe, Trajtenberg, and Henderson (1993) and Thompson and Fox-Kean (2005). We then apply the new technology space representation to re-examine knowledge flow localization. Our results continue to find support for localization. Thus, the bias present in earlier localization analyses was not the sole driver of the result.

**Do non-choice data reveal economic preferences? Evidence from simple biometric data and compensation-scheme choice****Marja-Liisa Halko** (Helsingin yliopisto), Olli Lappalainen, Lauri Sääksvuori

We characterize factors that predict self-selection into competitive and cooperative environments. Using choice data, we show that men are substantially more likely to enter a competitive compensation scheme than women in situations in which options to compete and cooperate coexist. Self-selection into a cooperative compensation scheme is largely guided by economic rationality. We employ a machine learning approach to assess whether simple biometric data acquired during sleep, naturally occurring daily chores and participation in an experiment predict individuals' choice of compensation scheme. We find that simple biometric data acquired using wearable devices enable equally accurate out-of-sample prediction for compensation-scheme choice as gender and performance. However, our results show that data recorded in naturally occurring environments during activities that are unrelated to the predicted outcome add little value to out-of-sample prediction. Our results suggest that the feasibility of inferring economic decisions from simple biometric data without observing past decisions depends on the data-acquisition environment and context.

#### **Sibling spillovers in post-compulsory education**

**Hanna Virtanen** (Etlä), Mikko Silliman

We study sibling spillovers to secondary education using a set of two related regression discontinuity designs that arise from the centralized admissions process to secondary school in Finland. As a result of the first discontinuity, older siblings who apply to both the general and vocational tracks of secondary education are pushed into one or another by chance. As a result of the second discontinuity, older siblings who fail to qualify for any of the schools they apply to are pushed out of secondary education altogether. When the older sibling is admitted to the more academic track of secondary school, their younger siblings are 6 percentage points more likely to rank the general (vs. vocational) track first in their applications. When it comes to admission, the magnitude of this effect shrinks by one third, and by graduation, the magnitude of this effect shrinks further and is indistinguishable from zero. When the older sibling is not admitted to any track of secondary education, younger siblings do not change their measured application preferences or admissions outcomes. Still, the younger sibling is nearly 6 percentage points less likely to graduate on time - and ever - from secondary education. Together, these results suggest that the economic significance of initial effects of sibling spillovers in education may be misleading. Further, by corroborating findings from distinct studies within a single national context, our research helps to provide a broad perspective from which to interpret sibling spillovers in education.

#### **Siblings' Effects on College and Major Choices: Evidence from Chile, Croatia and Sweden**

**Andres Barrios Fernandez** (VATT), Adam Altmejd, Marin Drlje, Christopher Neilson, Dejan Kovac

How are college choices shaped by siblings' experience in higher education? Using administrative data from Chile, Croatia and Sweden, this paper investigates how college applications and enrollment decisions are influenced by the path followed by older siblings in higher education. In these three countries, colleges select their students using deferred acceptance admission systems. We exploit the quasi-random variation generated by thousands of admission cutoffs and show that individuals are more likely to apply and enroll in both the college and the specific major of an older sibling. However, we find no spillovers in field of study choice. These results persist for siblings far apart in age, who are unlikely to attend higher education at the same time. We discuss three broad classes of mechanisms and present evidence consistent with the transmission of information being a relevant driver of spillovers. Spillovers are stronger in majors with better peers, lower dropout rates and in which graduates perform better in the labor market. Older siblings' experience in college also seems to be important, suggesting that individuals learn through their siblings if specific majors or colleges are a good match for them.

**Evaluating potential output and output gap in the presence of structural changes****Jaana Rahko** (Vaasan yliopisto), Panu Kalmi

Games have been identified as an important tool in learning economics and financial literacy. We study three game-based educational programs that are targeted to the 9th grade students of lower secondary schools in Finland (around 15 years old). We study the impact of game-based learning environments compared to regular classes. The students attend an obligatory course in economics every student is required to take. The learning outcomes include financial and economic literacy and a number of self-reported behaviors and attitudes, including saving behavior, planning ahead, impulse shopping and interest on economic and financial issues. A pre-intervention survey was conducted in autumn 2017 and a post-intervention survey in spring 2018. Moreover, we conducted parental and teacher surveys. We use data from 41 schools in 11 different towns. Even though more than 3000 students responded to both surveys, we had in the end 640 usable observations, the limitation being the lack of parental consent letters. We control for various biases this may introduce in the analysis. We estimate the effects of game-based environment on learning by using the difference-in-differences method and including a large number of covariates. Our results indicate that for students who participate in game-based interventions, economic and financial knowledge increases significantly more than for students who do not have access to the interventions. This result is robust with different definitions of treatment effects (ATE vs. ITT). There is also evidence that participating in two programs (instead of just one) produces better learning outcomes. The interest of students towards economics also increases more with the intervention group than with the control group. However, the effects of education on self-reported financial behaviors are weak. The findings strongly support pedagogical innovations aiming to involve students in active learning approaches and making studying economics simultaneously more practical and fun.

**Cognitive skills and personality as determinants of university major and subsequent earnings****Juho Jokinen** (University of Jyväskylä), Tuomo Suhonen

The choice of university major is known to significantly affect one's expected earnings, whereas it is unknown whether and how the returns to specific majors vary by one's cognitive ability and personality traits. Previous evidence on the relationship between skill endowments and the choice of major is also limited and based on small samples of university students. In this study, we merge full-population register data on Finnish male university graduates with the Finnish Defense Forces' cognitive and psychological tests to examine how the test results relate to the choice of major and earnings differences within and across majors. The results show that cognitive skills and personality traits (non-cognitive skills) are important predictors of major choice and major-specific earnings after graduation.

#### **Regionalization of Input-Output Tables Using CGE-modelling with Paucity of Data**

**Naufal Alimov** (Pellervon Taloustutkimus PTT ry), Olli-Pekka Ruuskanen, Janne Huovari, Juha Honkatukia

The paper reviews how to produce augmented regional accounts of the national economy by updating regional demand and supply tables, developing regional accounting matrices, and describing cross-sector income transfers. The paper discusses different ways to regionalize input-output datasets at the regional accounts level using TERM-process. The datasets derived is used to illustrate the changes in the regional production structures between 2008-2014 in Finland.

#### **Evaluating Climate Policies with the help of CGE-models**

**Juha Honkatukia** (THL)

The presentation covers the use of CGE models in constructing baseline and policy simulations for climate policy evaluations. We focus especially on the linking of different models covering agriculture forestry, land use and energy technologies, and the role economic modelling has played in the large, multidisciplinary evaluations that have come to characterize the research on climate policies.

#### **Ahvenanmaan kasvun mahdollisuudet – CGE-analyysi makrotrendien luomista mahdollisuuksista ja haasteista**

**Jouko Kinnunen** (Ålands statistik- och utredningsbyrå)

Ahvenanmaan talous ei ole viime vuosikymmenen aikana vielä toipunut finanssikriisin jälkeisestä romahduksesta. Ahvenanmaan väestö on kuitenkin jatkanut suhteellisen reipasta kasvua. Miltä Ahvenanmaan tulevaisuus näyttää katsottuna erilaisten makrotrendien näkökulmasta: luovatko tekninen kehitys, ikääntyminen, ilmastopolitiikka ja ilmaston muutos sekä globaalien voimasuhteiden muutokset enemmän haasteita vai mahdollisuuksia? Tutkimus nojautuu laajaan kyselyyn sekä fokusryhmähaastatteluihin maakunnan yritysten ja julkisen sektorin työnantajien keskuudessa, kirjallisuuskatsaukseen sekä CGE-mallianalyysiin.

#### **Who benefits from the Hitas System?**

**Oskari Harjunen** (VATT), Teemu Lyytikäinen, Tuukka Saarimaa

Hitas is a price- and quality-controlled housing system in Helsinki that was started in 1978. The aim of the system is to provide affordable owner-occupied housing by ensuring that the prices of new units are based on construction costs. Re-selling prices of Hitas units are regulated for 30 years after which prices can be determined freely in the market. At the same time, the Hitas units can be rented out freely and the rents are not regulated. We analyze what type of households benefit from the Hitas system and whether the characteristics of the beneficiaries have changed over time. We do this by exploiting unique register data covering the entire population of Helsinki for a period of thirty years. The data contain exact location of each household and information, which allows us to identify Hitas buildings from free market and public housing buildings. Detailed location information also allows us to analyze whether Hitas residents differ from the residents of nearest unregulated free market buildings. We also study whether the socioeconomic distribution of the residents in a particular building changes after the Hitas price regulation ends. Finally, we study to what extent Hitas units are rented out and how this depends on the price level of the neighborhood.

#### **Housing allowance, housing demand and rents**

**Teemu Lyytikäinen** (University of Helsinki), Essi Eerola, Tuukka Saarimaa

This paper studies the effects of housing allowance for low-income households on housing demand and rents. We utilize a housing allowance reform that made the allowance more generous for small apartments as a quasi-experimental setting. Our preliminary findings suggest that housing allowance recipients did not respond to the incentive to choose smaller housing units. Rents of small units relative to larger ones were unaffected.

#### **Public Housing: Tenants, housing careers and neighborhoods**

**Essi Eerola** (VATT), Oskari Harjunen, Tuukka Saarimaa

Most developed countries have sizable public housing programs. Their main aim is to guarantee affordable rental housing for low-income households. Often the programs also have other objectives, such as, prevention of segregation or increasing housing quality of low-income families with children. These place-based programs are often considered problematic because the subsidy the households receive is by design targeted to specific geographic locations. This may lead to high concentrations of low-income households in certain neighborhoods and buildings. At the same time, it may be possible to mitigate this concentration by locating the buildings to sought-after neighborhoods and by applying suitable tenant selection rules. Despite the scale of these programs little is known of their long-term impacts on tenants and neighborhoods. This paper aims to fill this gap by analyzing a large public housing program in Finland. We exploit unique register data covering the entire Finnish population for a period of thirty years. The data contain exact location of each household and information on their housing conditions. We use the data to describe the tenants, their housing careers and their neighborhoods. In particular, we analyze the degree of neighborhood segregation using different measures and describe how it has changed over the period of thirty years. We will also analyze to what extent these changes can be attributed to changes differential income developments and to public housing policy.

#### **Housing search and liquidity in the cross-section of market segments**

**Tuuli Vanhapelto** (Toulouse School of Economics), Thierry Magnac

We develop an equilibrium search model to study the variation of housing market liquidity in the cross-section of multiple interconnected market segments. Segments are connected because buyers can choose where to search, and we model the inter-segment sorting using a spatial equilibrium condition. House prices and sales times are different across market segments because the segments differ in matching technologies and the distribution of housing quality. We provide a way for identifying a parameter vector describing these features for each segment as nonlinear transforms of segment-level data on prices, sales times and market tightness. We also provide a way to do counterfactual analyses even in the case where house searchers will re-sort differently across segments in the counterfactual equilibrium. We estimate the model using data from Finland and use the framework to study the potential impacts of an increase in a uniform property tax. Our findings suggest that a tax increase would lower prices everywhere but by different magnitudes: a 10% tax would decrease prices by 10-17% depending on the market, and price divergence would increase.

**Aktiivimallin arvioinnin tuloksia****Hanna Pesola** (VATT), Tomi Kyyrä, Roope Uusitalo

Arvioimme vuoden 2018 alussa käyttöön otetun aktiivimallin vaikutuksia työttömiin. Mallin tavoitteena oli lisätä työllisyyttä kannustamalla työttömiä aktiivisuuteen ja omatoimisuuteen työnhaussa koko työttömyysjakson ajan. Aktiivimallin voimaantumisen jälkeen työttömän etuutta on alennettu, jos hän ei kolmen kuukauden tarkastelujakson aikana työskennellyt tai osallistunut työllistymistä edistäviin palveluihin riittävän aktiivisesti. Rekisteritietojen mukaan aktiivimalli leikkasi työttömyysetuutta ensimmäisen tarkastelujakson jälkeen reilulta kolmannekselta työttömistä. Vuoden 2018 alussa kokonaan työttömänä olleista työttömyysetuutta pienennettiin yli puolelta. Työttömyysetuutta pienennettiin usein vanhimilta työttömiltä ja erityisen usein työttömyysturvan lisäpäiväetuuksia saavilta. Alueelliset erot olivat kaiken kaikkiaan pienet, joskin Etelä-Pohjanmaalla työttömyysetuuksia alennettiin tavallista harvemmin. Aktiivimallin käyttöönoton jälkeen työllistymistä edistäviin palveluihin osallistuminen kasvoi sekä Kelan etuuksia että ansiopäivärahaa saavien työttömien joukossa. Palveluihin osallistuminen kasvoi erityisesti vanhimmissa ikäryhmissä, joissa työllistyminen avoimille työmarkkinoille on harvinaisempaa. Ansioturvan saajien keskuudessa eniten kasvoi lyhyisiin, juuri aktiivimallin ehdot täyttäviin palveluihin osallistuminen. Työttömyyden aikaisen työnteon ja työttömyydestä poistumisen osalta tulokset ovat epäselvempiä. Sekä työttömyyden aikainen työskentely että työttömyysturvalta poistuminen lisääntyivät aktiivimallin käyttöönoton jälkeen varsinkin ansioturva saavien joukossa. Kelan työttömyysetuuksia saavien työttömien osalta kasvua oli lähinnä työttömyysaikaisessa työssäkäynnissä. Työllistymisen kasvussa on osittain kyse työllisyystilanteen paranemisen vaikutuksesta. Kokonaan työttömiä ansiosidonnaisen päivärahan saajia ja aktiivisuusvelvoitteesta vapautettuja lomautettuja vertailevat laskelmat viittaavat siihen, että aktiivimalli on saattanut lisätä myös työttömyyden päättymisen todennäköisyyttä ansioturvan saajien joukossa. Pitkäaikaisemmat vaikutukset työllisyyteen riippuvat myös siitä, edistääkö työllistymistä edistäviin palveluihin osallistuminen työllistymistä. Aktiivimalli toimii siinä mielessä, että se lisäsi palveluihin osallistumista, mutta vaikutus työllisyyteen edellyttäisi vielä, että palveluilla on työllistymiseen vaikutusta.

**Displacement and entrepreneurial income****Sami Remes** (Tampereen yliopisto)

We examine the effect of displacement on entrepreneurship entry and following income development. We use register-based Finnish micro-level data to identify individuals that has been subject to mass layoff or plant closure in the previous workplace. In the previous literature, there has been a consensus that displacement decreases employment earnings, and on the other hand, that displacement increases entrepreneurship entry due to lower reservation option. Using the register-based panel data spanning from 2004 to 2016, we compare the earnings of the forced (push) entrepreneurs to entrepreneurs with no displacement background, and outcomes between entrepreneurship and employment following displacement.

#### **Removing welfare traps: Evidence from the Finnish Basic Income experiment**

**Jouko Verho** (VATT), Kari Hämäläinen, Ohto Kanninen

This paper shows that replacing minimum unemployment benefits with basic income (BI) of equal size has no employment effects. We examine an experiment in Finland, in which 2,000 benefit recipients were randomized to a monthly BI. The experiment lowered participation tax rates by 23pp for full-time employment. The treatment also simplified benefit payments and removed all obligations that the labor administration sets to the unemployed. Despite the large increase in incentives and unconditionality of BI, the participation in activation services remained high and days in non-subsidized employment remained unchanged in the first year of the experiment.

#### **Once or Twice a Month? The Impact of Payment Frequency on Consumption Patterns**

**Jani-Petri Laamanen** (Tampereen yliopisto), Tuomas Matikka, Tuuli Paukkeri

We study how the number of benefit payments within a month affect spending patterns of benefit recipients. In Finland, the payment dates of national pension benefits were based on the initial of the recipients last name. This generates as-good-as-random variation in payment dates over the month, providing a clear and robust setup to analyze consumption patterns. Using detailed consumption survey data, we find more within-month variation in expenditures for those who received most of their incomes in the beginning of the month, compared to a smoother consumption pattern for those who received their income in a more dispersed manner. There are similar patterns in expenditures both on nondurable goods and on a broader group of goods. Our results imply that two benefit payments, instead of just one, over the month can lead to smoother consumption patterns among benefit recipients.

**Using Valuation Ratios in Detecting Stock Market Bubbles, Crises and Exuberance in the S&P Composite Index****Hannu Kahra** (Estonian Business School)

This paper applies an econometric bubble detection method using a recursive unit root test pioneered by Phillips, Wu, and Yu (2011) and refined by Phillips, Shi, and Yu (2015), commonly referred to the PWY (Phillips-Wu-Yu) method. The method is applied in testing and dating periods of explosive dynamics (exuberance) in Robert Shiller's monthly Standard & Poor's data from January 1881 to December 2019. While previous studies detect bubbles and crises in price-dividend ratios, this paper detects them also in two price-earnings ratios. The procedure applies three valuation ratios: the price-dividend ratio, Shiller's cyclically adjusted price-earnings ratio (CAPE) and Shiller's cyclically adjusted total return price-earnings ratio (TRCAPE) that takes into account the changes in corporate payout policy (i.e. share repurchases rather than dividends). All three valuation ratios detect the two well-known stock market bubbles of the 20th century and several crises and exuberance periods in the data. Present high valuation ratios do not imply a bubble – instead they predict many years of poor stock returns.

**The role of financial development in the relationship between income inequality and economic growth: an empirical approach using cross-country panel data****Toni Juuti** (Jyväskylän yliopisto)

The study complements the existing literature on the role of credit constraints in the interplay between income inequality and economic growth. The question "what type of financial development matters for inequality-growth relationship" is answered empirically by adopting a multi-dimensional index of financial development. The analysis covers 35 OECD member countries and 34 non-OECD economies starting from the year 1980 with varying coverage across countries. The results of the panel estimation techniques suggest that in the non-OECD countries, income inequality is positively associated with subsequent growth of per capita GDP under sufficiently developed financial markets. If the markets are poorly developed, the partial correlation between inequality and growth is statistically insignificant. For OECD countries, the association seems to be non-existent although weak evidence for growth-dampening inequality is found if both the level of inequality is high and the financial markets are highly developed. The results imply that promoting the development of financial markets - rather than institutions - may alleviate the adverse effects of income inequality on economic growth in under-developed countries.

**The role of wealth and shocks in preference (in)stability - Experimental evidence from India**  
**Anustup Kundu** (University of Helsinki, UNU-WIDER)

The proclamation in general economic theory is that preferences are stable and any instability in preferences can be attributed to changes in prices and income. However, recent empirical literature using experiments sheds light on the matter that it might not be entirely the case. In light of this ongoing discussion, we provide empirical evidence from India. We use experimental panel data collected from five rural villages in India to look into risk preference, time preference and preference stability. Preliminary findings suggest that a vast majority of the subjects are not only risk averse but also loss averse and that they exhibit present bias nature.

#### **Unemployment assistance and unemployment exits**

**Tomi Kyyrä (VATT)**

Many European countries have adopted a two-tiered unemployment compensation system which consists of unemployment insurance (UI) and unemployment assistance (UA) benefits. The UI benefits are paid for a limited period to unemployed job seekers who meet eligibility conditions regarding the past employment and contribution history. The UA benefits are paid to job seekers who have exhausted their UI benefits and those entering the labor market without sufficient employment and contribution history. A large body of literature has studied the effects of UI benefits, but much less is known about the effects of UA benefits. This paper studies the effect of UA benefits on unemployment exits using data for Finland and a reform in 2012 that increased the benefit level by 21.8 percent, 121 Euros per month.

#### **Evaluation of employment effects of flexible care allowance**

**Juha Tuomala (VATT), Tuomas Pekkarinen**

This paper evaluates the effects flexible care allowance implemented in 2014. Flexible care allowance is paid for those parents of small children under the age of 3 who work 30 hours or less and take care of child for rest of the time. One of the aims of the flexible care allowance is to encourage parents of small children to work part-time and to return to working life more rapidly. In order to identify employment effects of flexible care allowance we utilize difference-in-differences method and large micro level data sets. We compare employment trends of mothers and fathers of small children to those parents who were not affected by the reform. According to the results take-up of flexible allowance care increased considerable due to the reform among parents of small children. We also find smaller positive effects for employment days and working part-time. However, the results concerning employment effects vary among different groups of mothers and fathers.

#### **The history of financial crises and their lessons for crisis anticipation**

**Tuomas Malinen** (Helsingin yliopisto, GnS Economics)

Economists and investors owe great gratitude to economic historians and their work. The lessons that can be learned from past crises are crucial for understanding how future crises may come to be. The history of crises is centuries old. The earliest known sovereign debt crisis was the default of thirteen city-states of Greece on the debt they owed to the Temple of Delos (with 80% loss of the principal) in 377 B.C. The first documented financial crisis was the crash of banks owned by the families Peruzzi and the Bardi in 1343 and 1346. Both had lend heavily to King Edward the III as he prepared for a conflict with France, which turned to Hundred Year's War. However, crises of the past 100 years provide the best lessons for forecasting the future ones, because they include the modern structure of the financial markets and central banking. That's why they are the main concern here. The main finding is that while crises may spawn due to different factors, their vulnerabilities tend to come from the same sources. This is simply how economies work. Every crisis comes with their own, mostly cultural markings, but the same economic logic and rules apply everywhere. These include the inability to grow debt faster than income indefinitely, to 'conjure' money without inflation in asset and/or commodity prices and the fact that losses need to be covered by someone.

#### **Ulosottoloukun poistaminen oikeudenmukaisuuden ja työllisyyden edistämiseksi**

**Pekka Tiainen** (Helsingin yliopisto)

Ensiapuna ulosoton suojaosuuden nostaminen takuueläkkeen tasolle hallitusohjelman mukaisesti. Vuosi 2018 Suomen taloushistorian pahin ulosottovuosi keskeisillä mittareilla: 1) Uusia ulosottoja tuli 5,1 miljardia euro (lisäystä 23,5 %). Kahdessa vuodessa lisäystä oli 84 %. Vuonna 2016 2,8 miljardia euroa, v. 2017 4 miljardia euroa (lisäystä 49,5 %); 2) Ulosotossa oli 577 000 henkilöä, joista yksityishenkilöitä 520 000 90 %; V. 2018 lopussa ulosotossa 300 000 henkilöä. Lukua nosti veropalautusten aiennus; 4) Luottohäiriömerkinnät 430 000:lla, joista 382 000 yksityishenkilöitä. Vuoden 2019 alussa oli edelleen kasvua.

Tilanne on eri mittareilla pahentunut vuoden 2008 ulosottokaaren aikana, 2010-luvulla, valtakunnanvoudin viraston perustamisesta vuonna 2010 ja maanlaajuisen erikoisperinnän käynnistämisestä keväällä 2011. Tilanne paheni erityisesti 2017-2018 talouden nousussa ja työllisyyden vahvasti lisääntyessä. Mitä tapahtuu jos talous heikkenee? Hallitusohjelman ulosoton suojaosuuden nosto takuueläkkeen tasolle keino työllisyyttä jarruttavan ulosottoloukun purkamisessa ensiapuna. Esitelmässä tarkastellaan reformimahdollisuuksia keskittymien ulosoton kannustinloukkujen purkamiseen työllisyyden edistämiseksi kuten kysymykseen suojaosuuden nostamisesta, asteikon muutoksiin ja tulojen saamista edistävien menojen ottamiseen huomioon ulosottoa vähentävänä.

#### **Suomen Nato-jäsenyys: hyöty-kustannusanalyysi**

**Vesa Kanniainen** (Helsingin yliopisto)

Esitelmässä formuloidaan optimaalisen vero- ja puolustuspolitiikan ongelma, joka ratkaistaan rationaalisen jäsenyyspäätöksen suhteen tarjolla olevassa puolustusliitossa. Lähestymistapa on hyöty-kustannusteoreettinen. Hyötyjä ovat saavutettavissa oleva turvallisuuslisä. Kustannuksia ovat jäsenyyteen liittyvä sitoutumisvaatimus artikla 5:een ja mahdollisen vihollisen kosto. Malliin on sisään rakennettu vapaamatkustajuuskannustin. Jäsenyysoption matemaattinen arvo ratkaistaan kuin myös puolustusliiton laajuus ja jäsenyyteen liittyvä kustannus tasapainossa.

#### **Sattumaa ja johdatusta: 150 vuotta teollisuusmaiden BKT:n kasvuerojen kehitystä**

**Paavo Peisa** (Åbo Akademi)

21 OECD-maan aikasarja-poikkileikkausaineisto vuosilta 1870-2020 vahvistaa aikaisemmat havainnot teollisuusmaiden henkeä kohti lasketun BKT:n prosentuaalisten erojen kaventumisesta. Tämä on usein tulkittu tuloerojen hitaaksi sopeutumiseksi kohti pitkän aikavälin tasapainoa. Selvityksessä pohditaan, voidaanko muutokset selittää vaihtoehtoisesti sattumaksi. Tätä varten kumulatiivisten kasvuerojen empiirisiä trendejä verrataan yksinkertaisen satunnaiskulkumallin teoreettisiin trendeihin. Satunnaiskulkumallia voi pitää teollisuusmaiden suhteellisen tulotason pitkän aikavälin muutosten kohtuullisen hyvänä kuvauksena, ainakin jos ottaa huomioon mallin yksinkertaisuuden. Lyhyitä, vain vuosia tai vuosikymmeniä kestäviä vaihteluja malli selittää huonosti. Erityisesti toisen maailmansodan aikana ja välittömästi sen jälkeen syntyneet suuret tuloerot palautuivat mallin vastaisesti ennalleen parissa vuosikymmenessä.

**How Does Refugee Immigration Influence Redistribution Politics? Evidence from Finland**  
**Janne Tukiainen** (VATT), Konstantinos Matakos ja Riikka Savolainen

We study whether establishing new asylum seeker centres influences the redistribution related policy positions of candidates in local elections in Finland - a country where municipalities have significant control over fiscal policies. The sudden and unprecedentedly large inflow of the asylum seekers in autumn 2015 and the resulting establishment of asylum centres facilitates a difference-in-differences research design. We focus on the supply side of politics and find that on average candidates do not respond to the presence of the centres by proposing less (or more) redistribution in a voting aid application survey. Our estimates are precise enough to rule out even fairly small effects both for all the candidates and the elected ones. In contrast, there is evidence of various voter responses on average suggesting that electoral politics may limit to some extent the impact of voter preferences on policies. However, in the very smallest municipalities where there are many refugees per capita also the candidates become less favourable towards redistribution. Moreover, a similar result obtains for the ethnically most homogeneous municipalities.

**Age at immigration and residential integration****Cristina Bratu** (Aalto University), Matz Dahlberg, Madhinee Valeyatheepillay

We study residential integration patterns in adulthood for children of immigrants who arrive in Sweden before the age of 16. We take a novel, data-driven approach in defining neighborhoods. Using geo-coded information on the residential location of each individual in Sweden, we construct individualized k-nearest neighborhoods, for values of k as small as 50 and as high as 1000. We further characterize these neighborhoods along four dimensions: share of natives, high earners, highly-educated and share receiving social assistance. We find that, at age 30, children arriving later live in neighborhoods with a lower share of high earners and highly-educated and a higher share of people receiving social assistance. These results hold regardless of the value of k. However, age at arrival does not matter for the ethnic composition of neighborhoods, especially at high values of k. For low values of k, arriving later means living around fewer natives, but the point estimates are small. Previous literature has shown that immigrant children arriving at an earlier age have better labor market and educational outcomes. We see these outcomes reflected in the socio-economic composition of the neighborhoods where they live in as adults. However, we rule out the possibility that arriving earlier also results in residential integration with the dominant majority.

#### **Love Thy (Elected) Neighbor?**

**Tuukka Saarimaa** (Aalto University), Oskari Harjunen, Janne Tukiainen

Political representation is unequal geographically which may lead to unequal geographic distribution of local public services. However, causal evidence on this issue is still largely absent from the literature. In this paper, we study the effects of local political representation on the prevalence of an important local public service in a neighborhood, namely elementary schools. The analysis is facilitated by geo-coded data on the residential location of the universe of municipal election candidates spanning three municipal elections in Finland together with information on the exact location of elementary schools. Using election outcomes decided by a lottery - fairly abundant in the Finnish open-list local elections - for causal identification, we document that increasing local representation increases the probability that a local school is not closed in a time period when the overall number of elementary schools decreased by roughly 30%. Moreover, we document, using difference-in-differences methods, that voters value local schools, as in the subsequent elections they punish incumbent candidates that had a nearby school close down during their term.

#### **Islamic Schools and Female Education**

**Tolga Benzer** (Aalto University)

I study the impact of having access to religious education as an alternative to secular education on educational attainment and labor market outcomes of women. I exploit a ruling of the Council of State in 1976 that allows female students to attend religious schools in Turkey legally. Combining the differences in the religious school availability in district centers with differences in access to religious schools across cohorts, I find that educational attainment of cohorts in district centers with a religious school increased by 2.5 percentage points (8%) compared to cohorts in control district centers after the ruling. Subsequently, I study the labor market and fertility outcomes. Labor force participation increased, and the total number of births given at earlier ages decreased for the affected cohorts.

**Does Experience of Banking Crises Affect Trust in Banks?****Zuzana Fungacova** (Suomen Pankki), Eeva Kerola, Laurent Weill

This paper investigates how past experience with banking crises influences an individual's trust in banks. We combine data on banking crises for the period 1970–2014 with individual data on trust in banks for 52 countries. We find that experiencing a banking crisis diminishes a person's trust in banks, and that high exposure to banking crises is negatively related to trust in banks. An individual's age at the time of the crisis is important, and significant for individuals between 41 and 60 years of age at the time of the banking crisis. Both severe and mild crises diminish trust in banks, but a severe banking crisis hits also young people's trust, while less severe banking crises mainly degrade trust of more mature people. The detrimental effect for trust in banks seems to be connected specifically to systemic banking crises. Other types of financial crises incur a less significant effect. Overall, our results indicate that banking crises generate previously unrecognized costs for the economy in the form of a lasting reduction of trust in banks.

**The relationship between credit ratings and asset liquidity: Evidence from Western European banks****Jari-Mikko Meriläinen** (Jyväskylä University School of Business and Economics), Juha Juntila

This study examines the role of asset liquidity in Western European banks' credit rating down/upgrades over the 2005–2017 period. The results suggest that changes in banks' credit ratings have been more favorable for banks that have a liquid asset portfolio. Furthermore, asset liquidity has a stronger effect on credit ratings of the banks that already have an illiquid asset portfolio. As opposed to this, the effect is significantly smaller or non-existent for the most liquid banks. These results imply that the new liquidity regulation introduced by the Basel III requirements will improve the stability, and hence, decrease the fragility of the European banking sector. Furthermore, the benefits are the highest for the most illiquid banks. In addition, the sovereign credit rating pass-through effect is the strongest for the illiquid banks.

#### **Bank type and employees wages in Finland: Cooperative, savings and commercial banks** **Saara Vaahtoniemi** (Vaasan yliopisto), Panu Kalmi

In the Finnish banking sector, commercial banks pay higher base wages as well as bonuses to their employees than both cooperative or savings banks do. However, the share of workers receiving bonus payments in cooperative banks is over 70 percent at all hierarchy levels, whereas commercial banks pay out bonuses to about one quarter of the employees, with the largest share of bonus payments at the top manager level positions. In prior literature, non-profit organizations have been shown to have lower wages than their for-profit counterparts. The explanation offered in the literature is related to worker motivation. Workers in non-profits may accept a lower wage if they get part of their utility from serving a cause. Another hypothesis on worker cooperatives claims that wages in these organizations should be higher than in conventional firms because of profit sharing. However, empirical results have shown the case to be the opposite, thus leaving the reasons explaining the lower wages in still unclear. This paper aims to answer whether these hypotheses applied to worker cooperatives and non-profits can explain the wage differences between the different types of banks in Finland.

#### **Mind the Basel Gap**

**Petri Jylhä** (Aalto-yliopisto), Matthijs Lof

The Basel gap, the difference between a country's credit-to-GDP ratio and its estimated long-term trend, is used as a basis for setting the countercyclical regulatory capital buffers under the Basel III regulatory framework. Using data for 44 countries from the BIS, we show that the Basel gap, estimated by a seemingly sophisticated recursive filtration method, is nearly equivalent to a naive 16-quarter change in the credit-to-GDP ratio. We show analytically that this equivalence follows mechanically from the fact that the credit-to-GDP ratio follows a unit root process. We therefore conclude that the estimation procedure underlying the Basel gap is unnecessarily complicated.

**Empirical Monte Carlo Evidence on Estimation of Timing-of-Events Models****Stefano Lombardi** (VATT), Gerard J. van den Berg, Johan Vikström

This paper uses an Empirical Monte Carlo simulation approach to study the estimation of Timing-of-Events (ToE) models. We exploit rich Swedish data of jobseekers with information on participation in a training program to simulate placebo treatment durations. We first use these simulations to examine which covariates are major confounding variables to be included in selection models. We show that the joint inclusion of specific types of short-term employment history variables (notably, the share of time spent in employment), together with baseline socio-economic characteristics, regional and inflow timing information, is able to remove a significant part of the selection bias. Next, we omit sets of variables and estimate ToE models with discrete distributions for the ensuing systematic unobserved heterogeneity. In many cases the ToE approach provides accurate effect estimates, especially if time-varying variation in the unemployment rate of the local labor market is taken into account. However, assuming too many or too few support points for the unobserved heterogeneity may lead to large biases. We show that information criteria, in particular those penalizing parameter abundance, are useful to select the number of support points.

**Estimation of the potential output by using the Sequential Monte Carlo****Markku Lehmus** (Etila), Tero Kuusi

We apply the SMC (Sequential Monte Carlo) method to estimate the NAWRU and the labor force participation rate as well as their covariation for Finland. One of the aims of the paper is to improve the European Commission (EC) production function methodology. The results are similar with the EC estimates during the last years, but smoother during the Finnish Great Depression. We find that especially the estimates of NAWRU and the potential labor-augmenting productivity are very sensitive to the real-time uncertainty.

#### **Optimal default regime and labor supply**

**Ohto Kanninen** (Palkansaajien tutkimuslaitos), Hannu Karhunen, Terhi Maczulskij

This paper examines whether wage garnishment affects labor supply. We utilize total register data on enforcements from 2004 to 2015 collected by the National Administrative Office for Enforcement. These data are matched to the total Finnish population data from Statistics Finland which include register-based information on individual's income, family and labor market status. As a general rule, one-third of net income that exceeds the substance level is garnished. In the empirical approach, we thus utilize the discontinuities caused by the protected portion. The debt enforcement payment policy rule may affect debtor's incentives to work less if a higher portion of the net income is garnished. Our preliminary results show clear evidence of bunching around the kink point of the protected portion.

#### **Why Finnish polytechnics reject top applicants**

**Kristian Koerselman** (University of Jyväskylä)

I use a panel of higher education clearinghouse data to study the centralized assignment of applicants to Finnish polytechnics. I show that on a yearly basis, large numbers of top applicants unnecessarily remain unassigned to any program. There are programs which rejected applicants would find acceptable, but the assignment mechanism both discourages applicants from applying, and stops programs from admitting those who do. A mechanism which would admit each year's most eligible applicants has the potential to substantially reduce re-applications, thereby shortening the long queues into Finnish higher education.

#### **Parenthood and career development: Evidence from Finland**

**Cecilia Borgman** (Hanken), Jarkko Harju, Tuomas Matikka, Lauri Ojala

I study women's career development and earnings around the time when they have children. More precisely, the aim is to measure differences in promotions between men and women. The analysis is based on Finnish registry data for years 1995-2013 and I observe the parents 5 years before and 10 years after the birth of their first child. The analysis is carried out by using an event study approach. The study contributes to the existing literature by studying differences in career developments as a possible explanation for the documented negative effect that the birth of the first child has on women's earnings.

#### **Does subsidizing private ECEC generate expenditure savings at the cost of equity? Evidence from Finland**

**Tapio Räsänen** (Kansaneläkelaitos), Eva Österbacka

Subsidized private ECEC services creates potential equity issues while reducing public ECEC expenditure when universal day care is available. We identify the effects of private ECEC subsidies on demand for private ECEC services by exploiting variation in private ECEC subsidies. We estimate causal effects with differences-in-differences with continuous treatment variable. First, we estimate the average effect of the subsidies on demand of ECEC services. Second, we estimate heterogeneous treatment effect by household income quintile. Last, we estimate the employment effects and crowding out from public day care. Data are drawn from administrative registers with accurate prices, income and demographic variables. The main dataset include linked employer-employee data and family benefits with information on private ECEC subsidies from 2000 to 2009. We find that higher allowances increased the demand for private ECEC services, but high-income households increase the use of services more than low-income households do. In contrast to low take-up levels, varying from 2 to 4 percent, the take-up of center based private day care increased by 0.3 to 0.7 percentage points per 100 euro higher subsidy depending on the age of the children. Overall, private ECEC services crowded out municipal services while having no effect on employment rate of women with small children. Subsidized private ECEC service reduce expenditure while increasing out-of-pocket cost of the families in comparison to public day care services.

**On the extraction of a non-renewable resource with amenity value****Jussi Uusivuori** (Luke)

This paper deals with the question of finding a solution to a dynamic extraction problem of an exhaustible resource, such as a tropical rainforest. In part we build on the classical models by Ramsey (1928), Cass (1965) and Koopmans (1965) who analyzed closed-economy growth models with intertemporally maximizing, infinitely-lived dynasties exhibiting an assumed population growth rate. In the discrete-time model presented here utility is obtained from periodic consumption levels produced with the use of a fixed-rate capital and the depletion of the resource, as well as from periodic amenity values of the natural resource stock. Thus, in the present model the resource contributes to both consumptive and amenity utilities. In the present model, generations are interconnected by intergenerational altruism. Furthermore, we integrate into the analysis the impacts of ownership structure by assuming that the resource is a common-pool resource, for which both the spatial and dynamic allocation is designed by a benevolent social planner. This feature allows us to incorporate intra-generational inequity issues along with studying inter-generational properties. We show that the optimal allocation of the resource becomes dependent on population growth, wealth level, wealth inequality, ecological vulnerability of the resource and rivalry on the amenity value of the resource. The results help understand, for example, the mechanisms of landownership in the management of rainforests.

**The Relevance of Wholesale Electricity Market Places: The Nordic Case****Kimmo Ollikka** (VATT), Petr Spodniak, Samuli Honkapuro

Electricity wholesale markets are undergoing rapid transformation due to the increasing share of distributed and variable renewable energy sources (vRES) penetrating the market. The increasing shares of stochastic wind generation bring along greater deviations between the real time power generation and the day-ahead forecasts of power supply. It is therefore reasonable to assume that trading activity is shifting more from the traditionally dominant day-ahead market into the intra-day and regulating power markets. This is because predicting vRES power generation closer to the actual delivery is more reliable and because power generators are motivated to avoid high imbalance costs. We study price spreads between day-ahead, intra-day and regulating power markets in three Nordic countries (Denmark, Sweden and Finland) during 2013-2017. We estimate vector autoregressive (VAR) models to study the interrelationships between the price spreads and the effects of wind forecast and demand forecast errors, and other exogenous variables, such as transmission congestions and hydrological conditions, on price spreads in different Nord Pool bidding areas. We use the variation in the shares of wind power between bidding areas to analyse the impacts of increased shares of wind power on different market places. We find that wind forecast errors do affect price spreads in areas with large shares of wind power generation. Moreover, demand forecast errors have an impact on almost all price spreads, except in areas with relatively low consumption. Our results indicate that increasing shares of wind power are, indeed, changing the relevance of different market places. Markets closer to real time are playing more important role than in the past.

#### **Energy, emissions and growth in Sub-Saharan Africa: Evidence from statistically identified panel SVECMs**

**Simone Maxand** (University of Helsinki)

In the light of intensifying discussions on climate risks, the detection of global and local causal structures between economic and environmental variables becomes increasingly interesting. In this respect, the outcome of this paper is twofold. First, we advance panel VECM methodologies by statistical identification techniques. On different cross-section levels this allows for the interpretation of either country- or region-specific structural shocks while taking long-run relations into account. In a second step, these panel SVECM techniques provide a powerful tool to derive new insights on the interconnection of economic growth, energy consumption and carbon emissions. We focus on Sub-Saharan Africa as an example. For this country group we can quantify an emission window per growth caused by fossil energy use. This more precise quantification of interconnections helps to formulate global and local policy suggestions.