

# XL Kansantaloustieteen päivät

Finnish Economic Association XL Annual Meeting

Turku  
8.-9.2.2018

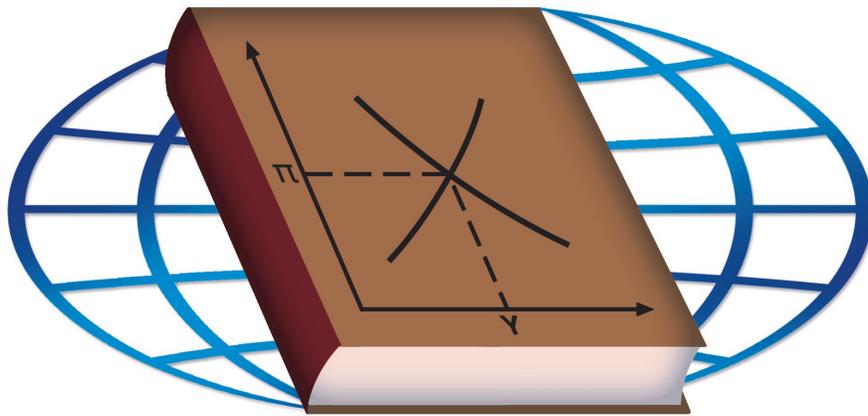
Programme

Thursday 8.2.2018

- 9:30-17:00 Registration
- 10:00-11:30 Parallel Sessions I
- 1a: Financial and macroeconometrics
  - 1b: Labour 1
  - 1c: Exchange rates
  - 1d: Consumer credit and stock market investment
  - 1e: Microtheory
  - 1f: Public policies and labour supply
  - 1g: Education 1
  - 1h: Empirical microeconomics
- 11:30-12:30 Lunch Break
- 12:30-14:00 Parallel Sessions II
- 2a: Monetary policy
  - 2b: Forecasting
  - 2c: Dynamic games
  - 2d: Taxation
  - 2e: Education 2
  - 2f: Labour supply and participation
- 14:00-14:25 Break (Coffee & Tea)
- 14:25-14:30 Opening words, Lecture Hall Osuuskauppa
- 14:30-15:45 **Plenary lecture by Gilles Saint-Paul** (Paris School of Economics), Lecture Hall Osuuskauppa  
*Title of the presentation: "Secular Satiation"*
- 16:00-18:00 Parallel Sessions III
- 3a: Empirical macroeconomics
  - 3b: Regional and municipal economics
  - 3c: Firms and firm level data
  - 3d: Labour 3
  - 3e: Game theory
  - 3f: International economics
  - 3g: Health
- 19.00- Welcome reception & Conference dinner at Restaurant Koulu

Friday 9.2.2018

- 10:00-11:30 **Special session organized by Economic Policy Council** in Lecture Hall Osuuskauppa  
Allan Seuri (Economic Policy Council): *Financing Finnish Universities*  
Otto Toivanen (Aalto University): *Finnish Innovation Policy*
- 11:30-12:30 Lunch Break
- 12:30-14:30 Parallel Sessions IV
- 4a: Inequality
  - 4b: Housing
  - 4c: External positions and current accounts
  - 4d: Environment
  - 4e: Innovation and cybersecurity
  - 4f: Labour 4
  - 4g: Banking



Taloustieteellinen Yhdistys  
Finnish Economic Association

The Finnish Economic Association would like to thank the University of Turku and the city of Turku for hosting the conference and the reception. The association also acknowledges the financial support from the Bank of Finland, Liikesivistysrahasto, Tieteellisten Seurain Valtuuskunta and Yrjö Jahnssoon Foundation.

# Important locations

## Main Conference Venue

University of Turku, Turku School of Economics  
Street address: Rehtorinpellonkatu 3, 20500 Turku

*Conference registration in the lobby*

## Conference hotels

*Scandic Julia*  
Eerikinkatu 4, 20100 Turku

## Plenary Lecture and Special Session

Lecture hall Osuuskauppa

*Original Sokos Hotel Hamburger Börs*  
Kauppiaskatu 6, 20100 Turku

## Conference Dinner

Panimoravintola Koulu  
Eerikinkatu 18, 20100 Turku

## Lunch Restaurants near the conference venue

University restaurant: *Juvenes Monttu*

*Trattoria Romana*  
Hämeenkatu 9, 20500 Turku

*Kuori*  
Hämeenkatu 8, 20500 Turku

*Delhi Darbar*  
Hämeenkatu 8, 20500 Turku

*M Kitchen & Cafe*  
Itäinen Rantakatu 4-6, 20700 Turku

*Tårget*  
Linnankatu 3 A, 20100 Turku

*Mami*  
Linnankatu 3, 20100 Turku

*Hus Lindman*  
Piispankatu 15, 20500 Turku

## Transportation:

From direction Helsinki, the closest train station is **Kupittaa** (distance app. 1km)  
From the **central train station** or **bus station** distance to conference venue is app. 1.4 km

Buses between the conference venue and the center :  
2, 2A, 2B, 2C, 6, 32A, 50, 51, 53, 54, 55, 55A, 56, 60, 221, 610, 709  
bus stop "Turun yliopisto (TYKS U-sairaala)" in Hämeenkatu

Parallel sessions I: Thursday 8.2.2018 10:00-11:30 (1.5h)

Room  
Ls02

Session 1a: Financial and macroeconometrics

Chair: Henri Nyberg (University of Turku)

**Recession forecasting with big data**

**Lauri Nevasalmi** (University of Turku)

*Discussant: Henri Nyberg (University of Turku)*

**Business cycle transmission from large countries to a small open economy**

**Harri Pönkä** (Ministry of Finance), Henri Nyberg

*Discussant: Lauri Nevasalmi (University of Turku)*

**Taking zero lower bound seriously: A structural vector autoregression containing positive-valued components**

**Henri Nyberg**

*Discussant: Harri Pönkä (Ministry of Finance)*

Room  
Ls12

Session 1b: Labour 1

Chair: Tomi Kyyrä (VATT)

**Employment effects of a funding liability reform**

**Viveka Tschamurov** (Social Insurance Institution)

*Discussant: Salla Simola (Aalto University)*

**The impact of employer liabilities for disability insurance on hiring**

**Salla Simola** (Aalto University), Amelia Hawkins

*Discussant: Tomi Kyyrä (VATT)*

**The effects of employer liabilities in disability and unemployment insurance on job exits**

**Tomi Kyyrä** (VATT), Juha Tuomala

*Discussant: Viveka Tschamurov (Social Insurance Institution)*

Room  
Ls04

Session 1c: Exchange rates

Chair: Annika Lindblad (HECER, University of Helsinki)

**Sentiments and exchange rates**

**Kari Heimonen** (University of Jyväskylä), Heikki Lehkonen, Kuntara Punkthuanthong

*Discussant: Malin Gardberg (Erasmus University Rotterdam / Tinbergen Institute)*

**Linking Net Foreign Portfolio Debt and Equity to Exchange Rate Movements**

**Malin Gardberg** (Erasmus University Rotterdam / Tinbergen Institute)

*Discussant: Annika Lindblad (HECER, University of Helsinki)*

**Economic drivers of the dynamic correlation between the exchange rate and stock returns**

**Annika Lindblad** (HECER, University of Helsinki)

*Discussant: Kari Heimonen (University of Jyväskylä)*

Parallel sessions I: Thursday 8.2.2018 10:00-11:30 (1.5h) (cont.)

Room  
Ls08

Session 1d: Consumer credit and stock market investment

Chair: Erkki Vihriälä (Oxford University)

**Take-up of joint and individual liability loans: an analysis with laboratory experiments**

**Susmita Baulia** (University of Turku)

*Discussant: Andrew Conlin (Oulu Business School)*

**From cradle to the stock market: early health status and stock market participation**

**Andrew Conlin** (Oulu Business School), Petri Böckerman, Rauli Svento

*Discussant: Heikki Kauppi (University of Turku)*

**Serendipitous relief or unwelcome temptation - mortgagor response to a new credit offer**

**Erkki Vihriälä** (Oxford University)

*Discussant: Susmita Baulia (University of Turku)*

Room  
Ls35

Session 1e: Microtheory

Chair: Michele Crescenzi (University of Helsinki)

**Alliance Advantage and Free Riding Incentives in Uneven Wars of Attrition**

**Yi Zheng** (University of Helsinki)

*Discussant: Tuomas Laiho (University of Oslo)*

**Mobility and learning with big data**

**Saara Hämäläinen** (University of Helsinki), Vaiva Petrikaite

*Discussant: Yi Zheng (University of Helsinki)*

**Ambiguous language as a correlating device**

**Michele Crescenzi** (University of Helsinki)

*Discussant: Julia Salmi (Aalto University)*

Room  
Ls32

Session 1f: Public policies and labour supply

Chair: Kari E.O. Alho (ETLA)

**Tieto, kannusteet ja eläkeaikeet**

**Satu Nivalainen** (Finnish Centre for Pensions), Sanna Tenhunen

*Discussant: Pekka Tiainen (University of Helsinki, Ministry of Economic Affairs and Employment)*

**Suomen työllisyyspolitiikan kehityksen pääpiirteet 1800-luvulta työllisyydestä 2000 luvulle ja työttömyysturva**

**Pekka Tiainen** (University of Helsinki, Ministry of Economic Affairs and Employment)

*Discussant: Kari E.O. Alho (ETLA)*

**Employment, Unemployment and Labour Supply: An Analysis of the Effects of Tax and Benefit Policies in the Finnish Labour Market**

**Kari E.O. Alho** (ETLA)

*Discussant: Satu Nivalainen (Finnish Centre for Pensions)*

Parallel sessions I: Thursday 8.2.2018 10:00-11:30 (1.5h) (cont.)

Room  
Ls19

Session 1g: Education 1

Chair: Mika Kortelainen (VATT)

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**School Tracking and Mental Health: Evidence from Finnish Comprehensive School Reform**

**Mika Haapanen** (University of Jyväskylä), Petri Böckerman, Christopher Jepsen, Alexandra Roulet

*Discussant: Artturi Björk (Aalto University)*

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**Value of signals of ability: Evidence from discontinuities in high school exit exams**

**Artturi Björk** (Aalto University), Hannu Karhunen

*Discussant: Mika Kortelainen (VATT)*

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**Effects of elite high schools on university enrollment and field of study choices**

**Mika Kortelainen** (VATT), Ohto Kanninen, Lassi Tervonen

*Discussant: Mika Haapanen (University of Jyväskylä)*

Room  
Ls34

Session 1h: Empirical microeconomics

Chair: Visa Pitkänen (Social Insurance Institution)

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**The Lasting Well-being Effects of Macroeconomic Crises**

**Matti Hovi** (University of Tampere)

*Discussant: Ville Seppälä (University of Jyväskylä)*

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**The extended added worker effect - parents', siblings' and childrens' labor supply response on job displacement**

**Ville Seppälä** (University of Jyväskylä)

*Discussant: Krista Riukula (Aalto University)*

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**Quality and consumers' experience in their choice of provider: Evidence from a Finnish rehabilitation service**

**Visa Pitkänen** (Social Insurance Institution), Ismo Linnosmaa

*Discussant: Matti Hovi (University of Tampere)*

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Parallel sessions II: Thursday 8.2.2018 12:30-14:00 (1.5h)

Room  
Ls02

Session 2a: Monetary policy

Chair: Jaakko Nelimarkka (University of Helsinki)

**Financial market effects of unconventional monetary policy: a shadow rate and FAVAR approach**

**Annika Kuusela** (University of Jyväskylä)

*Discussant: Markus Haavio (Bank of Finland)*

**Natural rate of interest in the euro area**

**Markus Haavio** (Bank of Finland), Michel Juillard, Julien Matheron

*Discussant: Jaakko Nelimarkka (University of Helsinki)*

**Reconciling the identification of monetary policy shocks through proxies and non-normality**

**Jaakko Nelimarkka** (University of Helsinki)

*Discussant: Annika Kuusela (University of Jyväskylä)*

Room  
Ls06

Session 2b: Forecasting

Chair: Paolo Fornaro (ETLA)

**The equity risk premium and the low frequency of the term spread**

**Fabio Verona** (Bank of Finland), Goncalo Faria

*Discussant: Eleonora Granziera (Bank of Finland)*

**How to Predict your Next Forecasting Model: Conditional Predictive Ability Approach**

**Eleonora Granziera** (Bank of Finland), Tatevik Sekhposyan

*Discussant: Paolo Fornaro (ETLA)*

**Nowcasting Finnish Real Economic Activity: a Large Dimensional Approach**

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

*Discussant: Fabio Verona (Bank of Finland)*

Room  
Ls08

Session 2c: Dynamic Games

Chair: Julia Salmi (Aalto University)

**Dynamic lemon market with disclosures**

**Andrey Zhukov** (Aalto University), Julia Salmi

*Discussant: Saara Hämäläinen (University of Helsinki)*

**Durable goods and learning about product quality**

**Tuomas Laiho** (University of Oslo), Julia Salmi

*Discussant: Andrey Zhukov (Aalto University)*

**Exogenous exit in repeated games**

**Julia Salmi** (Aalto University)

*Discussant: Michele Crescenzi (University of Helsinki)*

Parallel sessions II: Thursday 8.2.2018 12:30-14:00 (1.5h) (cont.)

Room  
Ls09

Session 2d: Taxation

Chair: Seppo Kari (VATT)

**Allowance for Growth and Investment (AGI) as a Driver of Investment Incentives in the Common Consolidated Corporate Tax Base (CCCTB)**

**Olli Ropponen** (VATT), Seppo Kari, Jussi Laitila

*Discussant: Jukka Ilomäki (University of Tampere)*

**Capital, Bequest and Wage Taxation in a General Equilibrium**

**Jukka Ilomäki** (University of Tampere), Hannu Laurila

*Discussant: Seppo Kari (VATT)*

**Interest limitation rules and investment incentives: Fixed ratio rule is less fixed but still matters**

**Seppo Kari** (VATT), Olli Ropponen

*Discussant: Janne Huovari (PTT)*

Room  
Ls18

Session 2e: Education 2

Chair: Antti Kauhanen (ETLA)

**Predicted performance and optimal selection of university students**

**Antti Sieppi** (University of Jyväskylä)

*Discussant: Antti Kauhanen (ETLA)*

**The Effects of an Education-Leave Program on Educational Attainment and Labor-Market Outcomes**

**Antti Kauhanen** (ETLA)

*Discussant: Antti Sieppi (University of Jyväskylä)*

Room  
Ls19

Session 2f: Labour supply and participation

Chair: Ohto Kanninen (Labour Institute for Economic Research)

**Stay home and stay married? The effect of child home care allowance on marital stability**

**Krista Riukula** (Aalto University)

*Discussant: Tuomo Virkola (European University Institute)*

**Internships and Labour Market Entry**

**Tuomo Virkola** (European University Institute)

*Discussant: Ohto Kanninen (Labour Institute for Economic Research)*

**The Effect of Relabeling and Incentives on Retirement: Evidence from a Pension Reform**

**Ohto Kanninen** (Labour Institute for Economic Research), Jon Gruber, Satu Niivalainen, Terhi Ravaska, Roope Uusitalo

*Discussant: Tuomas Kosonen (Labour Institute for Economic Research)*

Parallel sessions III: Thursday 8.2.2018 16:00-18:00 (2h)

Room  
Ls03

Session 3a: Empirical macroeconomics

Chair: Hannu Koskinen (University of Tampere)

**What does “below, but close to, two percent” mean? Assessing the ECB’s reaction function with real time data**

**Maritta Paloviita** (Bank of Finland), Markus Haavio, Pirkka Jalasjoki, Juha Kilponen  
*Discussant: Markku Lehmus (ETLA)*

**The long-term unemployed adjusted NAWRU series for Selected European countries**

**Markku Lehmus** (ETLA)  
*Discussant: Tuomas Malinen (University of Helsinki)*

**Secular stagnation: Is there a role for income inequality in saving and speculative investing?**

**Tuomas Malinen** (University of Helsinki), Alexandra D’Onofrio, Luiss Guido Carli  
*Discussant: Hannu Koskinen (University of Tampere)*

**Implications for Aggregate Inflation of Sectoral Asymmetries: an empirical application**

**Hannu Koskinen** (University of Tampere), Jouko Vilmunen  
*Discussant: Maritta Paloviita (Bank of Finland)*

Room  
Ls06

Session 3b: Regional and municipal economics

Chair: Sakari Lähdemäki (Labour Institute for Economic Research)

**The Effects of Municipal Mergers on Voter Turnout**

**Simon Lapointe** (VATT), Tuukka Saarimaa, Janne Tukiainen  
*Discussant: Susanna Kujala (University of Helsinki, Ruralia-institute)*

**Regional economic effects of Seinäjoki University of Applied Sciences in 1992–2017**

**Susanna Kujala** (University of Helsinki, Ruralia-institute), Jouko Kinnunen, Outi Hakala, Hannu Törmä  
*Discussant: Risto Peltola (National Land Survey of Finland)*

**Veropohjan arvostus maapohjan verotuksen haasteena**

**Risto Peltola** (National Land Survey of Finland)  
*Discussant: Sakari Lähdemäki (Labour Institute for Economic Research)*

**Mapping the Two Faces of Geography: Compensation and Agglomeration**

**Sakari Lähdemäki** (Labour Institute for Economic Research), Eero Lehto, Eero Mäkynen  
*Discussant: Simone Lapointe (VATT)*

Parallel sessions III: Thursday 8.2.2018 16:00-18:00 (2h) (cont.)

Room  
Ls07

Session 3c: Firms and firm level data

Chair: Kristine Koponen (University of Helsinki)

**Firm growth and congestion from unprofitable firms - Evidence from firm-level data**

**Juuso Vanhala** (Bank of Finland), Satu Nurmi, Matti Virén

*Discussant: Sanna Kurronen (University of Helsinki)*

**Oil price collapse and firm leverage in resource-dependent countries**

**Sanna Kurronen** (University of Helsinki)

*Discussant: Satu Nurmi (Statistics Finland)*

**Female entrepreneurs, firm performance and gender pay gap**

**Satu Nurmi** (Statistics Finland), Alexander Kritikos, Mika Maliranta

*Discussant: Kristine Koponen (University of Helsinki)*

**Financial Crisis and Firm Entry in Small Open Economies**

**Kristine Koponen**

*Discussant: Juuso Vanhala (Bank of Finland)*

Room  
Ls08

Session 3d: Labour 3

Chair: Porjai Chalermsook (University of Utah & Aalto University)

**Firm profitability and the gender difference in profit sharing**

**Matthias Strifler** (University of Jyväskylä)

*Discussant: Tuomas Pekkarinen (Aalto University & VATT)*

**What happened to piece rates? Job complexity and the changing compensation contract: Evidence from Finland, 1980 to 2012**

**Tuomas Pekkarinen** (Aalto University & VATT), Thomas Lemieux, Chris Riddell

*Discussant: Terhi Maczulskij (Labour Institute for Economic Research)*

**Where have workers from routine jobs gone? Evidence from the 1970s**

**Terhi Maczulskij** (Labour Institute for Economic Research), Mika Maliranta, Sari Pekkala Kerr

*Discussant: Porjai Chalermsook (Aalto University)*

**The Impact of International Trade on Wage Inequality in Finnish Manufacturing Firms**

**Porjai Chalermsook** (Aalto University)

*Discussant: Matthias Strifler (University of Jyväskylä)*

Parallel sessions III: Thursday 8.2.2018 16:00-18:00 (2h)

Room  
Ls010

Session 3e: Game theory

Chair: Mitri Kitti (University of Turku)

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**Strategic Short-termism: Implications for the Management and Acquisition of Customer Relationships**

**Topi Miettinen** (Hanken), Rune Stenbacka

*Discussant: Hannu Salonen (University of Turku)*

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**Recursive Clustering Methods for Network Analysis**

**Hannu Salonen** (University of Turku), Mitri Kitti, Matti Pihlava

*Discussant: Ville Korpela (University of Turku)*

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**Optimal Bayesian Mechanisms Without Monetary Transfers: A Solution to the Two-Person Implementation Problem**

**Ville Korpela** (University of Turku), Michele Lombardi

*Discussant: Mitri Kitti (University of Turku)*

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**Mechanisms for allocating rights to forge blocks**

**Mitri Kitti** (University of Turku)

*Discussant: Topi Miettinen (Hanken)*

Room  
Ls12

Session 3f: International economics

Chair: Mika Nieminen (University of Jyväskylä)

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**Habit persistence and structure of food imports – a cross-country expenditure system**

**Janne Niemi** (VATT)

*Discussant: Svetlana Ledyeva (Aalto University)*

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**Third-country effects of export incentives**

**Svetlana Ledyeva** (Aalto University)

*Discussant: Vesa Soini (University of Stavanger)*

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**Oil Prices and Uncertainty over the OPEC Meeting Cycles: Evidence from Crude Oil Futures Returns**

**Vesa Soini** (University of Stavanger)

*Discussant: Mika Nieminen (University of Jyväskylä)*

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**Patterns of International Capital Flows and Their Implications for Developing Countries**

**Mika Nieminen** (University of Jyväskylä)

*Discussant: Janne Niemi (VATT)*

Parallel sessions III: Thursday 8.2.2018 16:00-18:00 (2h) (cont.)

Room  
Ls13

Session 3g: Health

Chair: Jouko Verho (VATT)

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**Migration and long-term mental health: The displaced Finns after World War II**  
**Henri Salokangas** (University of Turku), Jari Haukka, Jaana Suvisaari, Matti Sarvimäki, Pekka Martikainen  
*Discussant: Jutta Viinikainen (University of Jyväskylä)*

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**Weight hurts: The effect of obesity on depression**  
**Jutta Viinikainen** (University of Jyväskylä), Petri Böckerman, John Cawley, Terho Lehtimäki, Suvi Rovio, Ilkka Seppälä, Jaakko Pehkonen, Olli Raitakari  
*Discussant: Mikko Nurminen (University of Turku)*

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**Reality Check: Effects of a National Health Information Technology on Prescription Drug Abuse**  
**Mikko Nurminen** (University of Turku), Petri Böckerman, Mika Kortelainen, Liisa Laine, Tanja Saxell  
*Discussant: Jouko Verho (VATT)*

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**Effect of co-payment ceiling on prescription drug consumption**  
**Jouko Verho** (VATT)  
*Discussant: Henri Salokangas (University of Turku)*

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Parallel sessions IV: Friday 9.2.2018 12:30-14:30 (2h)

Room  
Ls02

Session 4a: Inequality

Chair: Elina Tuominen (University of Tampere)

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**Wage Gaps in Board Interlock Networks**

**Matti Pihlava** (University of Turku), Mitri Kitti

*Discussant: Hannu Karhunen (Labour Institute for Economic Research)*

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**Expansion of higher education and equality of opportunity**

**Hannu Karhunen** (Labour Institute for Economic Research), Roope Uusitalo, Tuomo Suhonen

*Discussant: Alekski Karhula (University of Turku)*

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**Ylisukupolvinen eriarvoisuus Suomessa**

**Alekski Karhula** (University of Turku), Outi Sirniö

*Discussant: Elina Tuominen (University of Tampere)*

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**Income inequality, redistributive preferences, and the extent of redistribution: An empirical application of optimal tax approach**

**Elina Tuominen** (University of Tampere), Matti Tuomala, Hannu Tanninen

*Discussant: Matti Pihlava (University of Turku)*

Room  
Ls03

Session 4b: Housing economics

Chair: Tuukka Saarimaa (VATT)

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**Housing Market Anticipation Effects of a New Metro Line**

**Oskari Harjunen** (City of Helsinki)

*Discussant: Tuukka Saarimaa (VATT)*

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**Effects of Property Taxes on House Prices and Rents**

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

*Discussant: Essi Eerola (VATT)*

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**Effects of Real Estate Transfer Taxes: Evidence from a Natural Experiment in Finland**

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

*Discussant: Marko Terviö (Aalto University)*

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**Welfare Effects of Housing Transaction Taxes**

**Marko Terviö** (Aalto University), Niku Määttänen

*Discussant: Teemu Lyytikäinen (VATT)*

Parallel sessions IV: Friday 9.2.2018 12:30-14:30 (2h) (cont.)

Room  
Ls12

Session 4c: External positions and current accounts

Chair: Mika Nieminen (University of Jyväskylä)

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**External positions, interest rates, and revealed preferences**

**Adam Gulan** (Bank of Finland)

*Discussant: Mika Nieminen (University of Jyväskylä)*

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**Time preference explanation for the persistent current account imbalances**

**Mika Nieminen** (University of Jyväskylä)

*Discussant: Adam Gulan (Bank of Finland)*

Room  
Ls14

Session 4d: Environment

Chair: Hannu Savolainen (Finnish Environment Institute & Oulu Business School, University of Oulu )

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**Consumers' willingness to provide flexibility in the electricity markets**

**Teemu Meriläinen** (Oulu Business School, University of Oulu), Maria Kopsakangas-Savolainen, Rauli Svento, Enni Ruokamo, Otto Appelgren

*Discussant: Piia Remes (VATT)*

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**Policy congruence on nuclear power between citizens and policy makers**

**Piia Remes** (VATT), Anni Huhtala

*Discussant: Santtu Karhinen (Oulu Business School, University of Oulu)*

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**Emissions reduction by optimization of residential hot water heating under endogenous prices**

**Santtu Karhinen** (Oulu Business School, University of Oulu), Hannu Huuki, Enni Ruokamo

*Discussant: Kimmo Ollikka (VATT)*

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**The Economic Value of Mixed Municipal Waste**

**Hannu Savolainen** (Finnish Environment Institute & Oulu Business School, University of Oulu), Santtu Karhinen, Olli Sahimaa

*Discussant: Anni Huhtala (VATT)*

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Parallel sessions IV: Friday 9.2.2018 12:30-14:30 (2h) (cont.)

Room  
Ls07

Session 4e: Innovation and cybersecurity

Chair: Anna-Maija Juuso (Oulu Business School, University of Oulu)

**Do Overoptimistic Men Drive Creative Destruction? Evidence of Gendered Inventive Activity in Finland**

**Jussi Heikkilä** (University of Jyväskylä)

*Discussant: Carita Eklund (University of Vaasa)*

**Design Strategies for Innovation – sales or novelties?**

**Carita Eklund** (University of Vaasa), Carter Bloch, Thomas Kjeldager Ryan

*Discussant: Jussi Heikkilä (University of Jyväskylä)*

**Cyber War and the Arms Race**

**Vesa Kanninen** (University of Helsinki)

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

**Economics of cybersecurity investment and threat intelligence sharing**

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

*Discussant: Vesa Kanninen (University of Helsinki)*

Room  
Ls010

Session 4f: Labour 4

Chair: Oskari Vähämaa (University of Turku)

**Employee skills and occupational sorting**

**Juho Jokinen** (University of Jyväskylä), Antti Sieppi

*Discussant: Jani-Petri Laamanen (University of Tampere)*

**Causal impacts of home-ownership on entrepreneurship: Accounting for externalities**

**Jani-Petri Laamanen** (University of Tampere)

*Discussant: Juho Jokinen (University of Jyväskylä)*

**Financial shocks and endogenous labor market participation**

**Lauro Carnicelli** (University of Helsinki)

*Discussant: Oskari Vähämaa (University of Turku)*

**Unionizing Non-search Unemployment**

**Oskari Vähämaa** (University of Turku)

*Discussant: Lauro Carnicelli (University of Helsinki)*

Parallel sessions IV: Friday 9.2.2018 12:30-14:30 (2h) (cont.)

Room  
Ls13

Session 4g: Banking

Chair: Karlo Kauko (Bank of Finland)

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**Are Chinese Big Banks Really Inefficient? Distinguishing Persistent from Transient Inefficiency**

**Zuzana Fungacova** (Bank of Finland), Paul-Olivier Klein, Laurent Weill

*Discussant: Juha Junntila (University of Vaasa)*

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**CEO Pay-Share and Risk-taking in Larger Banks**

**Jamshed Iqbal** (University of Vaasa)

*Discussant: Erik Mäkelä (University of Turku)*

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**Uncertainty Shocks and Firm Dynamics: Search and Monitoring in the Credit Market**

**Marlène Isoré** (University of Helsinki & Bank of Finland), Thomas Brand & Fabien Tripier

*Discussant: Jouko Vilmunen (University of Turku)*

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**Bank ownership and the structure of funding**

**Jari-Mikko Meriläinen** (University of Vaasa)

*Discussant: Kim Ristolainen (Bank of Finland & University of Turku)*

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## Abstracts

Room  
Ls02

Session 1a: Financial and macroeconometrics

### **Recession forecasting with big data**

**Lauri Nevasalmi** (University of Turku)

Recessions are periods with declining economic activity and rising unemployment. Early warning signals of recessions would be important for different kinds of economic agents. Households, firms, policymakers and central bankers could all utilize the information concerning upcoming economic activity in their decision making. But what are the indicators that consistently lead recessions? Throughout the years there has been a large amount of empirical research concerning the predictive content of different economic and financial variables. The amount of potential recession indicators are growing fast as the constraints related to data-availability and computational power keep diminishing. Traditionally used logit and probit models can handle only small predictor sets at a time, which makes the search for best predictors quite difficult. Recent developments in the machine learning community provide a solution to this problem. State of the art classification algorithm called boosting is able to do variable selection and model estimation simultaneously. Non-parametric boosting can handle huge predictor sets and the estimated conditional probability function can take basically any kind of form. The main objective of this research is to exploit how we are able to use huge predictor sets when making recession forecasts. Preliminary results show that boosting outperform the conventional methods in terms of their in-sample and out-of-sample predictive performance when forecasting recession periods in the United States.

### **Business cycle transmission from large countries to a small open economy**

**Harri Pönkä** (Ministry of Finance), **Henri Nyberg**

In the previous literature, time series models for binary dependent variables have typically been univariate. However, more recently multivariate probit models have been proposed in the literature. These models allow us to study the business cycle linkages and transmission mechanisms between countries. In this paper, we concentrate in studying the transmission of business cycles from large countries such as the US and Germany to small open economies such as Finland.

### **Taking zero lower bound seriously: A structural vector autoregression containing positive-valued components**

**Henri Nyberg** (University of Turku)

In the conventional structural vector autoregressive (SVAR) analysis, the variables are treated as real-valued components. This is not, however, always the case as seen, for example, during the recent Zero Lower Bound state in nominal short-term interest rates. In this study, a SVAR model containing at least one strictly positive component is developed. Despite the nonlinearity originating from the positive-valued components, impulse response functions and forecast error variance decompositions can be expressed with explicit analytical formulae. The empirical results of the core three-variable U.S. monetary policy system generally point out important differences to the linear SVAR models.

## Abstracts

Room  
Ls12

Session 1b: Labour economics 1

### **Employment effects of a funding liability reform**

**Viveka Tschamurov** (Social Insurance Institution)

The purpose of this research is to evaluate the effects of a recent policy reform that entered into force in the beginning of 2015: the local governments' funding liability of the labour market subsidy was expanded. Before the reform, central and local government jointly paid half of the labour market subsidy of an unemployed person who had received labour market subsidy on grounds of unemployment for at least 500 days. After the reform this limit was reduced to 300 days. The central government is solely liable for the labour market subsidy when an unemployed is participating an active labour market policy program. The reform brings further incentive for the local authorities to invest in activating the long-term unemployed so that they become more employable. I will investigate how the reform affected activation and labour market outcomes of unemployed persons who have received labour market subsidy on grounds of unemployment between 300-500 days before and after the reform. I have individual-level data from Kela and of persons receiving labour market subsidy and detailed information of services provided to them. Furthermore, I will investigate the joint effects of the funding liability reform and the Act on Multisectoral Joint Services Promoting Employment that also came into force in the beginning of 2015. The latter Act is targeted to those who have received labour market subsidy for at least 300 days.

### **The impact of employer liabilities for disability insurance on hiring**

**Salla Simola** (Aalto University), Amelia Hawkins

Employer liabilities for disability insurance (DI) make employers internalize the costs of their employees leaving the workforce and entering DI. Despite the promise of employer incentives, shifting the liability of DI onto employers might also discourage firms from hiring people with pre-existing conditions or at risk of disability. In this study, we examine the effects of employer contributions on firms' hiring decisions. We take advantage of a reform in the Finnish Disability Insurance system in 1996 that increased the coinsurance rates firm paid when their employees claimed disability benefits.

### **The effects of employer liabilities in disability and unemployment insurance on job exits**

**Tomi Kyyrä** (VATT), Juha Tuomala

We study whether the experience rating of employers' disability insurance premiums and lump sum liabilities in unemployment insurance affect exits from employment to various types of disability benefits and unemployment in Finland. To identify causal effects we exploit a pension reform that extended the coverage of the employer liabilities to a certain group of blue-collar workers.

## Abstracts

Room  
Ls04

Session 1c: Exchange rates

### **Sentiments and exchange rates**

**Kari Heimonen** (University of Jyväskylä), Heikki Lehkonen, Kuntara Punkthuanthong

This paper examines the impacts of sentiments on exchange rate determination. We utilize the versatile TRMI (Thomson Reuters Markets Psychology Indices) news and social media real time data for several exchange rates. In effect we are able to disentangle the impacts of country and currency market sentiments (news) from the impacts of moods in the markets. The results concerning the impacts of news on macro fundamentals support the earlier studies on the significance of new information for exchange rate determination. We also find novel evidence on the significant impacts of mood in the country and currency market on the exchange rate determination. These new findings about the significant role of mood and emotions in the foreign exchange market provide another explanation for the disconnect puzzle in the foreign exchange.

### **Linking Net Foreign Portfolio Debt and Equity to Exchange Rate Movements**

**Malin Gardberg** (Erasmus University Rotterdam / Tinbergen Institute)

Many currencies, especially those of countries with negative net foreign assets, tend to depreciate during times of financial turbulence. Using a panel of 28 currencies over the period 1/1997-6/2016, I show that the composition of net foreign assets matter for the exchange rate sensitivity to changes in global financial market risk tolerance. Currencies of countries with large negative net external portfolio debt are more vulnerable to changes in financial market uncertainty than currencies with the equivalent net external equity. Ownership matters too, private net foreign debt liabilities heighten the exchange rate sensitivity much more than public. The relationship between banking sector risk intolerance, net external asset positions and exchange rates has moreover become stronger since the credit crisis.

### **Economic drivers of the dynamic correlation between the exchange rate and stock returns**

**Annika Lindblad** (HECER & University of Helsinki)

I study the time-varying correlation between the stock market and the exchange rate in the US, the UK and Japan, with focus on the macro-finance drivers of the long-term correlation. I use the DCC-MIDAS framework, which allows economic data to drive correlations. The economic determinants of long-term exchange rate volatility will also be considered. Finally, I plan on determining whether unconventional monetary policy has affected the correlation between the exchange rate and the stock market.

## Abstracts

Room  
Ls08

Session 1d: Consumer credit and stock market investment

### **Takeup of joint and individual liability loans: an analysis with laboratory experiments** Susmita Baulia (University of Turku)

This paper reports a study on decision-making by borrowers regarding take-up of different loan types in a laboratory microfinance experiment setting. I hypothesize that when borrowers are offered a flexible choice of different loan types (here, individual liability (IL) and joint liability (JL)), they are able to self-select their desirable loan and this could lead to higher overall take-up of loans. I find evidence that take-up rate is significantly higher when the choice-set becomes more flexible with additional provision of a second loan type. Further evidence shows that in a setting where moral hazard and free-riding are eliminated, JL type is more preferred by borrowers when both loans are available; this indicates that when borrowers can make sure that partners would not be able to cheat, then JL type could excel in take-up rate. On controlling for risk and selfishness, results suggest that highly risk-averse borrowers stay away from any loan type and prefer safer outside income options. Less selfish borrowers show higher inclination in taking up JL loan. Investigating the interaction between discount rate and selfishness, I find that JL is either desirable by those who are selfish yet patient enough to reap the long run benefits of JL loan through its dynamic incentives that reduces the risk of repayment, or by those who are impatient but are less selfish. The results collectively imply that microloan types need to be customized according to the heterogeneous preferences of the borrowers; also, there needs to be enough flexibility in the offered choice-set for better self-selection.

### **From cradle to the stock market: early health status and stock market participation** Andrew Conlin (Oulu Business School), Petri Böckerman, Rauli Svento

To examine the relationship between early health status and stock market participation we link information on birth weight from the Northern Finland Birth Cohort to the data from the Finnish Central Securities Depository, which is the comprehensive official register of stock holdings in Finland. Birth weight is measured in 1966 and stock market participation in adulthood over the period 1995-2010. We establish that birth weight is significantly positively linked to stock market participation. Thus, persons predisposed to poor health status in early childhood (indicated by low birth weight) avoid participating in the stock market later in life. The relationship is robust subject to various checks e.g. controlling for mother's and person's own education level.

## Abstracts

Room  
Ls08

Session 1d: Consumer credit and stock market investment (cont.)

### **Serendipitous relief or unwelcome temptation - mortgagor response to a new credit offer** Erkki Vihriälä (Oxford University)

This paper studies how households react to an exogenous increase in credit availability: a free option to cease mortgage amortisation temporarily. Balance sheet constraints and life-cycle differences are the most significant subscription predictors, whereas the share of 'temptation' purchases is unimportant. Conditional on acceptance, durables spending grows more strongly than non-durable or temptation expenditure, consistent with balance sheet optimisation between housing equity and other physical assets. During the freeze liquid assets increase and consumer credit balances decrease, as implied by precautionary behaviour. However, ex ante constrained households seem to violate consumption smoothing around the predictable end of the payment freeze. This is consistent with short-termist preferences being an important contributor to balance sheet constraints for a non-negligible share of households.

Room  
Ls35

Session 1e: Microtheory

### **Alliance Advantage and Free Riding Incentives in Uneven Wars of Attrition** Yi Zheng (University of Helsinki)

We examine the extension of free riding incentives and alliance advantage to Maynard Smith [1974]'s classic war of attrition under complete information. We develop an uneven game of war of attrition between a weak alliance of two players and one opponent where two allies play a prisoner's dilemma against each other. We allow the free rider to get a prize if the game eventually ends with his ally's success. We derive the Nash equilibria and compare the results to that of a classic war of attrition. We find that selfish motivation overcomes moral concern — free riding incentives dominate regardless how strong the willingness to beat the opponent off is. Allies fight less hard when having more potential support. We then extend the model to a general case where the size of alliance side increases to infinitely large. We find that allies would surrender immediately almost surely. The game is a one sided war of attrition where the opponent cannot be defeated by the alliance.

### **Confusing contests**

Saara Hämäläinen (University of Helsinki)

This note illustrates how the wisdom gained by analyzing price obfuscation in duopolistic competition can be immediately transferred to the analysis of prize obfuscation in various economic contests. We apply a known mathematical isomorphism between these two model classes. The origins of organizational frictions and institutional complexity are discussed with applications to politics, innovation, lobbying and promotion. The analysis thus extends the scope of obfuscation beyond market interactions.

## Abstracts

Room  
Ls35

Session 1e: Microtheory (cont.)

### **Ambiguous language as a correlating device**

**Crescenzi Michele** (University of Helsinki)

Correlated equilibrium is a solution concept that captures correlated play. In its canonical form, players correlate their strategies by means of a trustful mediator who sends private recommendations. We examine correlated play when only public recommendations are allowed and communication may be noisy due to language ambiguity. We show that, if recommendations are made contingent on ambiguous sentences, then a public mechanism is sufficient to span the whole set of correlated equilibrium distributions of a given finite game. Ambiguity is modelled using the player-dependent logic of Halpern and Kets (2015) in which formulas are interpreted relative to a player. An ambiguous proposition, e.g. "the air temperature is high", is such that different players may assign to it different truth values in the very same state of the world. If public recommendations are contingent on properly chosen ambiguous propositions, then the uncertainty on how those propositions are interpreted is shown to induce any form of correlated play that can be sustained as a canonical correlated equilibrium.

Room  
Ls32

Session 1f: Public policies and labour supply

### **Tieto, kannusteet ja eläkeaikheet**

**Satu Nivalainen** (Finnish Centre for Pensions), Sanna Tenhunen

Tässä paperissa tarkastelemme eläketietämyksen, eläkkeelle siirtymisen taloudellisten kannustimien ja eläkkeelle siirtymisen ajankohdan välistä yhteyttä. Aineistona käytetään Eläketurvakeskuksen vuonna 2016 tekemää kyselyä vuoden 2017 eläkeuudistuksesta ja eläkeikää lähestyvien aikeista siirtyä eläkkeelle. Kyselyyn on yhdistetty rekisteritietoja Eläketurvakeskuksen rekistereistä. Aineisto koostuu 2 179 54-62-vuotiaasta suomalaisesta, jotka eivät kyselyhetkellä olleet kokoaikaisella eläkkeellä. Eläkejärjestelmän taloudellisten kannustimien kohdalla olennainen kysymys on, tunnetaanko kannustimien vaikutus. Jos työssä jatkamisen ja eläkkeelle siirtymisen lykkäämisen vaikutus eläkkeeseen on liian monimutkainen tai sitä ei tunneta lainkaan, ei ole realistista odottaa ihmisten reagoivan kannustimiin. Tämän vuoksi tarkastelemme eläketietämyksen merkitystä taloudellisten kannustimien vaikuttavuuteen. Samalla selvitämme, erottuuko jotain ryhmiä, joille kannustimet näyttävät selkeästi tärkeinä eläkkeellesiirtymispäätökseen heijastuvina tekijöinä. Lisäksi pyrimme saamaan selville, miten eläkejärjestelmän taloudelliset kannustimet myöhäisempään eläkkeelle siirtymiseen vaikuttavat eläkeikää lähestyvien mielikuvissa. Tätä tarkoitusta varten tarkastelemme kannustimien merkitystä eläkkeelle siirtymisaikomuksiin. Täsmällisemmin sanottuna hahmotamme kannustimien vaikutusta aikeisiin siirtyä eläkkeelle ennen omaa vanhuuseläkeikää, omassa eläkeiässä ja oman eläkeiän jälkeen. Tietämystä mittaamme kolmella mittarilla. Ensimmäinen kuvaa tietämystä tulevasta eläketasosta; osaako henkilö antaa arvion tulevasta eläkkeestään kokoaikaiselle eläkkeelle siirryttäessä. Toinen mittaa sitä, oliko henkilö tietoinen elinaikakerroimen vaikutuksesta. Kolmantena mittarina käytämme vastaajan mielipidettä siitä, onko hänellä hyvä käsitys siitä, miten työssä jatkaminen vaikuttaa omaan eläkkeeseen. Kannustimia mittaamme puolestaan sillä, saako elinaikakerroin ja lykkäyskorotus jatkamaan työssä eli onko näillä vaikutusta suunniteltuun eläkeikään. Lisäksi käytämme tietoa siitä, kannustaako lykkäyskorotus ja varhennusvähennys myöhentämään eläkkeelle siirtymistä.

## Abstracts

Room  
Ls32

Session 1f: Public policies and labour supply (cont.)

### **Suomen työllisyyspolitiikan kehityksen pääpiirteet 1800-luvulta työllisyystöistä 2000 luvulle ja työttömyysturva**

**Pekka Tiainen** (University of Helsinki, Ministry of Economic Affairs and Employment)

Esityksessä tarkastellaan Suomen työllisyys- ja työvoimapolitiikan kehitystä 1800-luvulta tähän päivään. Muutokset julkisen vallan tehtävissä työttömyyden vähentämisessä ja työttömien toimeentulon turvaamisessa ovat olleet suuria. Muutokset ovat heijastaneet yhteiskunnan rakenteellisia muutoksia sekä muutoksia siinä miten yhteiskunnan rooli työllisyyden hoidossa on muuttunut. Työttömyysturva muuttui 1960-luvun vaihteessa siten että se perustui aiemmin työhön ja sitten siihen, että korvaus ei edellyttänyt työtä vaan työ tulee ottaa vastaan jos sitä on. Perustulossa tämä muuttuisi. Tarkastelussa peilataan muutoksia teoreettiseen keskusteluun kuten inflaatiota kiihdyttämättömän työttömyyden ja rakennetyöttömyyden käsitteisiin ottaen huomioon työhakijoiden valinnoista riippumattomat tekijät ja valintoihin liittyvät tekijät. Esityksen taustalla on artikkeli työvoimapolitiikan pitkästä historiasta. Esitys sisältää työllisyyden, työvoiman, tehtyjen työtuntien ja työttömyyden sekä bkt:n ja tuottavuuden pitkät historiasarjat.

### **Employment, Unemployment and Labour Supply: An Analysis of the Effects of Tax and Benefit Policies in the Finnish Labour Market**

**Kari E.O. Alho** (ETLA)

In this paper, we examine both theoretically and empirically the equilibrium in the labour market with respect to employment, unemployment, labour supply on its intensive and extensive margins, and wage formation and the effects of various dimensions of labour market policies, notably taxes and benefits on these items. The key tool is to explicitly introduce various tax parameters into the various models of the labour market. In the empirical part, we construct a structural model for the equilibrium in the Finnish labour market, based both on general equilibrium modelling and econometric estimation. We also build a model for the labour supply to infer its intensive and extensive margin. Cutting the taxation on labour income is effective as to increasing the labour supply and employment while general reductions of the tax scale, including taxes on benefits, are broadly a less efficient tool in the labour market with respect to unemployment, and the increase in the labour supply. The generosity of the welfare programs also determines closely the labour market outcomes. We also discuss shortly a shift towards local bargaining and the link between productivity differentials and the wage distribution. We also solve for the evolution of the relative power of the unions vis-à-vis the employers from the CGE model of wage bargaining.

## Abstracts

Room  
Ls19

Session 1g: Education 1

### **School Tracking and Mental Health: Evidence from Finnish Comprehensive School Reform**

**Mika Haapanen** (University of Jyväskylä), Petri Böckerman, Christopher Jepsen, Alexandra Roulet

We examine the causal effects of the changes in school tracking age on mental health. Using a quasi-experimental research setting, we exploit a comprehensive school reform that was rolled out gradually across the Finnish municipalities over the period 1972–1977. The central feature of the reform was that it postponed the tracking of students into vocational and academic schools from age 11 to age 16. Using comprehensive linked longitudinal population registers, we examine the effects by sex and parental background. The reform had strikingly heterogeneous effects on mental health. The reform caused significant negative mental health effects for women who have highly educated parents.

### **Value of signals of ability: Evidence from discontinuities in high school exit exams**

**Artturi Björk** (Aalto University), Hannu Karhunen

We estimate the effect of receiving a higher grade on high school exit exams on educational and labor market outcomes. The Finnish exit exams have a discontinuity in grading: exams are first scored but the results are released as discretized grades. We have access to the underlying scores and the coarse grades. Identification comes from comparing individuals on different sides of the cutoff in the score. We find that receiving a higher grade from an exam causes (i) a ten percent increase in the probability of enrolling in a university next year, (ii) a one month decrease in graduation age and (iii) a persistent three quarters of a percent increase in wages.

### **Effects of elite high schools on university enrollment and field of study choices**

**Mika Kortelainen** (VATT), Ohto Kanninen, Lassi Tervonen

Finnish elite high school students enroll to university and to so-called elite fields of study more often than Finnish high school students on average. However, those who attend elite high schools are also higher-achieving in terms of baseline grade point average (GPA) from comprehensive school. If one wants to study the causal effects of elite high schools, one must pay attention to this selection bias.

This study focuses on five elite high schools in the Helsinki Capital Region and aims to solve the problem of selection bias by using regression discontinuity design (RDD). In our case RDD exploits the entrance thresholds of elite high schools as a rule which assigns applicants near the threshold into treatment and control groups. By comparing the outcomes (e.g. the probability to enroll in a university) of these groups we can estimate the causal effects of an elite high school offer on various educational outcomes such as university enrollment.

We find that crossing the threshold of an elite high school leads to a higher-achieving peer group in terms of baseline GPA. Yet, the elite high school offer does not have statistically significant effect on the probability to enroll in a university or on the probability to enroll in an elite field of study. The only exception is Etelä-Tapiola high school, which has a positive effect on the probability to enroll in a university.

## Abstracts

Room  
Ls34

Session 1h: Empirical microeconomics

### **The Lasting Well-being Effects of Macroeconomic Crises**

**Matti Hovi** (University of Tampere)

This paper studies the effects of early adulthood macroeconomic crisis on subjective well-being later in life. I use World Values Survey repeated cross-section data of over 100 000 individuals around the world and combine it with Angus Maddison's historical data on macroeconomic circumstances. Following earlier literature, the empirical strategy is based on the fact that different countries have experienced macroeconomic crises at different times. Thus, cohorts that have experienced a crisis in early adulthood vary across countries. The estimation results show that experiencing a macroeconomic crisis in early adulthood is detrimental to subjective well-being. Individuals who have witnessed a large decline in real GDP in their late teens or early twenties report lower levels of happiness years after.

### **The extended added worker effect - parents', siblings' and childrens' labor supply response on job displacement**

**Ville Seppälä** (University of Jyväskylä)

This paper studies the labor supply response (employment, income) of other family members to one family member's job displacement. It uses plant closures from the 90's Finnish recession as an exogenous source of job displacement. There is an extensive literature on the so called added worker effect (AWE) - the effects of job displacement on spouse's labor supply, and in this study, I broaden the AWE to the extended family, namely parents, siblings and adult children. In addition to AWE studies, this paper complements studies on inter vivos transfers between family members, which suggest that the transfers are dependent on receiving family members' financial situation. Potential labor supply responses, and the transfers that they imply, can be a signal of interdependence within family members. Furthermore, they can indicate whether or not the social security for the unemployed is adequate in the country or among certain subgroups. Results are still inconclusive.

### **Quality and consumers' experience in their choice of provider: Evidence from a Finnish rehabilitation service**

**Visa Pitkänen** (Social Insurance Institution), Ismo Linnosmaa

We study the relationship between consumer choices and provider quality in a rehabilitation service for disabled individuals who receive the service frequently but do not have access to quality information. We examine choices of new consumers and experienced consumers who were either forced to switch or initiatively switched their provider. Using register data on choices over the years 2011–15 we estimate conditional logit choice models. Our results show that all consumers prefer high-quality providers and short distances. We find that the willingness to travel for quality is highest among new consumers and lowest among forced switchers.

## Abstracts

Room  
Ls02

Session 2a: Monetary policy

### **Financial market effects of unconventional monetary policy: a shadow rate and FAVAR approach**

**Annika Kuusela** (University of Jyväskylä)

Zero lower bound (ZLB) of interest rates challenges the empirical modeling of monetary policy effects. A possible solution to this challenge is to introduce a shadow rate to measure the overall stance of monetary policy in the ZLB environment. Shadow rate is an alternative monetary policy measure obtained from a term structure model and it can freely take on negative values in the ZLB environment. This paper investigates the financial market effects of the Federal Reserve's unconventional monetary policy actions using factor-augmented vector autoregressive (FAVAR) model. The objective is to analyze whether shadow rate can be used to summarize the financial market effects of unconventional monetary policy. According to impulse responses from a FAVAR model, unexpected -25 basis points monetary policy shock causes S&P500 index and commercial and industrial loans to increase and volatility index, Aaa corporate bond yield and 10-year Treasury rate to decrease. Our results imply that unconventional monetary policies were effective in boosting the financial market.

### **Natural rate of interest in the euro area**

**Markus Haavio** (Bank of Finland), Michel Juillard, Julien Matheron

The paper analyzes the role of the natural rate of interest in monetary policy, and presents estimates of the natural rate for the euro area. The natural rate of interest is the level of riskless real interest rate that would be consistent with price stability and potential output. For central banks, the natural interest rate is a useful indicator, which can be applied in determining the (conventional) monetary policy stance, as well as in assessing the possible need for unconventional measures. The natural estimates we present are based on a large number of different specifications of a New Keynesian (DSGE) macro model, with financial frictions and involuntary unemployment, which we estimate using euro area data. We find that the euro area natural rate has been clearly pro-cyclical. In particular, in the period following the financial crisis, the natural rate has been negative most of the time. This low (and negative) level of the natural interest rate is accounted for by both low expected growth, and by heightened uncertainty. However, without the contribution of uncertainty (if the natural rate were solely driven by future growth prospects) the natural rate would probably have been positive.

### **Reconciling the identification of monetary policy shocks through proxies and non-normality**

**Jaakko Nelimarkka** (University of Helsinki)

How do monetary surprises propagate to the economy? To identify monetary policy shocks, a recent strand of literature makes use of proxy variables reflecting market reactions and deviations from central bank's expectations. In a structural VAR model, this study exploits the variation in these proxies together with flexible identifying restriction allowed by non-Gaussian shocks. By the non-normality, the study evaluates how informative the proxies are about the monetary surprises and how these measures are interrelated. In addition, by the exact identification of the model, the market surprises may be triggered by a multitude of shocks, which facilitates the examination of conventional and unconventional monetary policies.

## Abstracts

Room  
Ls06

Session 2b: Forecasting

### **The equity risk premium and the low frequency of the term spread**

**Fabio Verona** (Bank of Finland), Goncalo Faria

The term spread has long been of interest to policymakers and financial markets participants. Despite being a strong business cycle leading indicator, it is known to be a poor out-of-sample predictor of the equity risk premium. In this paper we show that its low-frequency component, when properly extracted from the data, is the best out-of-sample equity risk premium predictor to the date. Concretely, it obtains out-of-sample R-squares (versus the historical mean benchmark) of 2.03% and 21.9% for monthly and annual data, respectively, and generates utility gains of 585 basis points per annum for a mean-variance investor. Its outperformance is consistently stable throughout an out-of-sample period comprising more than 20 years of monthly data. Remarkably, it also forecasts well in expansions and outperforms several variables that have recently been proposed as good equity risk premium predictors.

### **How to Predict your Next Forecasting Model: Conditional Predictive Ability Approach**

**Eleonora Granziera** (Bank of Finland), Tatevik Sekhposyan

The relative performance of forecasting models is known to be unstable over time. From a practical point of view it is important to know whether the instabilities are predictable, and if so, whether the predictability can be exploited to improve the accuracy of the economic forecasts. We address this question by evaluating the predictive ability of a wide range of economic variables for two key U.S. macroeconomic aggregates, industrial production and inflation, relative to simple benchmarks. We find that the state of the business cycle, financial conditions, uncertainty as well as measures of past relative performance are, on average, useful for explaining the relative forecasting performance of the models. We further construct a pseudo-real-time forecasting exercise where we use the information about the conditional performance for model selection and model averaging. The proposed strategies deliver sizable improvements, particularly when the models are selected or combined consistent with their relative performance predicted by the financial conditions at the forecast origin date and past performance.

### **Nowcasting Finnish Real Economic Activity: a Large Dimensional Approach**

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

Despite the evergrowing data availability, statistical institutes publish economic indicators with considerable lag and the initial estimates are revised considerably over time. In Finland, the first estimate of GDP provided by Statistics Finland is released 45 days after the end of the reference quarter (flash estimate), while the first "appropriate" version is released 60 days after the end of the quarter. We develop a nowcasting framework in order to provide faster estimates of the monthly real economic activity indicator, the Trend Indicator of Output (TIO), and of quarterly GDP growth. In particular we rely on firm-level turnovers, which are available shortly after the end of the reference month, to form our set predictors. Given the large dimension of our dataset, we rely on a set of statistical models and machine learning methodologies which are able to handle high-dimensional information sets, to compute the nowcasts. The results of our pseudo-real-time analysis indicate that it is possible to provide substantially faster estimates of the TIO and GDP growth, without increasing the revision error. Finally, we examine the nowcasting accuracy obtained by relying on traffic data extracted from the Finnish Transport Agency website, and find that using machine learning methods in combination with this big-data source provides competitive predictions of real economic activity indicators.

## Abstracts

Room  
Ls08

Session 2c: Dynamic games

### **Dynamic lemon market with disclosures**

**Andrey Zhukov** (Aalto University), Julia Salmi

We study a dynamic setting where the lemon market problem arises endogenously from the informed seller's opportunity to wait for news proving the value of his product to the market. In many circumstances only the seller has information about the product, and therefore the only source of news is credible voluntary disclosures. We find that depending on seller's knowledge about his ability to be credible when communicating news, the equilibria in our game feature either well-functioning markets in every period or lead to a complete paralysis of the trade in one of the periods. Our model has implications for policies targeting reducing informational asymmetry of the markets, such as for instance mandating disclosures of private information, and for policies regulating the degree of price transparency in the asset markets.

### **Durable goods and learning about product quality**

**Tuomas Laiho** (University of Oslo), Julia Salmi

We study monopoly pricing in a dynamic model of social learning. The quality of the product the monopolist is selling is uncertain and is revealed through consumers' experiences. The monopolist can sell the product to heterogeneous buyers, who have the option of delaying their purchases. We solve the monopolist's problem under commitment and construct the Markov perfect equilibrium of the game. Because commitment power can improve the efficiency of learning, we show that the commitment solution can provide more welfare than the equilibrium. This is true not only in the sense of larger combined producer and consumer surplus, but also so that buyers can strictly prefer the monopolist to have commitment power. The result depends crucially on the initial uncertainty – when quality is known to be good with high enough degree of certainty, the equilibrium is always more efficient.

### **Exogenous exit in repeated games**

**Julia Salmi** (Aalto University)

I study a modified version of the traditional infinitely many times repeated prisoners' dilemma where players exogenously exit the game. Information about the exit times plays a crucial role in sustaining co-operation in the game with exits. Particularly, I show that co-operation is possible when players know their own irreversible exit times. The result illustrates that backward induction can be prevented even when both players know that the game is finite.

## Abstracts

Room  
Ls09

Session 2d: Taxation

### **Allowance for Growth and Investment (AGI) as a Driver of Investment Incentives in the Common Consolidated Corporate Tax Base (CCCTB)**

**Olli Ropponen** (VATT), Seppo Kari, Jussi Laitila

The European Union (EU) has taken an active role in the fight against tax avoidance behavior of multinational enterprises (MNEs). One of its actions taken in this fight is a directive proposal that suggests a move to a Common Consolidated Corporate Tax Base (CCCTB). According to the proposal the tax base definitions are aligned among the European countries and the allocation of tax base across countries is defined by a formulary apportionment, which in turn is based on three factors (labor, asset, sales) that are considered to reflect the locations where the corporate activities really take place. One specific feature included in the CCCTB is an Allowance for Growth and Investment (AGI), which is designed to boost the European economy. We employ a dynamic investment model to study the investment incentives of AGI. We show that the AGI increases investment incentives of companies, but not as much as a pure Allowance for Corporate Equity (ACE) model would. However, the differences in the investment incentives between the AGI and ACE models are in many cases very small relative to their differences to a model where neither is included.

### **Capital, Bequest and Wage Taxation in a General Equilibrium**

**Jukka Ilomäki** (University of Tampere), Hannu Laurila

The paper studies whether unemployment benefits should be financed by capital taxes, bequest taxes or wage taxes in an overlapping generations general equilibrium framework. In the model, goods prices and wages are sticky, and the government maximizes the lifetime welfare of households in every period. The technology process is non-stationary, which produces time-dependent equilibriums with uncertainty, for example, about inflation. The finding is that the unemployment compensation should be financed by capital income taxes rather than by taxes on wage income or bequest.

## Abstracts

Room  
Ls09      Session 2d: Taxation (cont.)

### **Interest limitation rules and investment incentives: Fixed ratio rule is less fixed but still matters** **Seppo Kari** (VATT), Olli Ropponen

Interest limitation rules (ILR) have become increasingly popular elements of corporate tax systems in countries' fight against international profit shifting. Following German pioneering legislation enacted in 2008 and in line with the OECD's subsequent guidelines, many countries applying ILR have adopted a profit related-measure, a fixed ratio rule, which limits the deductibility of interest expenses to a share of profits. The OECD guidelines suggest the limitation to be based on EBIT (earnings before interest and taxes) or EBITDA (earnings before interest, taxes, depreciation and amortization). Hence, the main difference is that depreciations of tangible capital and amortizations of intangible assets are deducted from EBIT but not from EBITDA. Since the size of these two profit measures differ much in many industries, the choice of the measure would obviously have implications on the level of the deductibility ceiling, and further on the opportunities to shift profits to low-tax countries. However, they might also have responses along several decision margins of firms such as investment and financing. This paper employs a dynamic investment model to study the effects of EBIT- and EBITDA-based ILRs on the firms' decisions. These systems are compared to two benchmarks, standard corporate tax (CIT) where debt costs are fully deductible, and the comprehensive business income tax (CBIT) where no interest costs can be deducted in taxation. We observe that in the most interesting case, where the ILR constraint is binding, the firms cost of capital for debt-financed investment differs between the two alternative definitions of ILR. Additionally, the cost of capital of under these systems also differs from that of CBIT. The first observation is rooted to the different treatment of depreciation allowances. Whether depreciations are included in the profit concept or not (EBIT or EBITDA) has implications on the marginal tax rate of depreciation allowances and further on the cost of capital. The second observation is related to the fact that the 'fixed ratio rule' is less fixed than one would first guess. An additional unit of debt-financed investment generates a profit flow which relaxes the ILR constraint in future years. As a result, future profits are taxed at an effective tax rate lower than the statutory rate.

Room  
Ls18      Session 2e: Education 2

### **Predicted performance and optimal selection of university students** **Antti Sieppi** (University of Jyväskylä)

This paper seeks to, firstly, look into which characteristics predict student achievement in specific subjects of a large Finnish university and, secondly, how the prediction can be used to build selection criteria based on characteristics observable to the university that maximize certain student performance measures. This is achieved by fitting a machine learning model on the combined data of applicants and students of a large Finnish university in addition to extensive panel data on the same individuals and using predictions of the model to find which kind of criteria might have selected the best performing groups of students from the whole pool of applicants. While selection into applying to the university remains a problem, it can be argued that in this specific it does not have a major effect and the paper can thus give a descriptive view both on characteristics linked to higher performance of university students and on how universities might wish to utilize these findings in their selection processes.

## Abstracts

Room  
Ls18      Session 2e: Education 2 (cont.)

### **The Effects of an Education-Leave Program on Educational Attainment and Labor-Market Outcomes**

**Antti Kauhanen** (ETLA)

I study the effect of an education leave subsidy for the employed on labor-market outcomes and educational attainment using Finnish administrative linked employer-employee panel data and matching methods. The adult education allowance is available to employees with at least eight years of work experience and allows them to take a leave for 2–18 months to participate in an education program while being compensated for a substantial part of their forgone earnings. I find large positive treatment effects on educational attainment and changing occupation. The treatment effects on earnings and employment are negative during the lock-in period and close to zero afterward. Treatment effects on pseudo-outcomes are small and not statistically significant, which supports the credibility of the identification strategy. Sensitivity analyses show that unobserved variables should have a fairly large effect on treatment assignment to change the results.

Room  
Ls19      Session 2f: Labour supply and participation

### **Stay home and stay married? The effect of child home care allowance on marital stability**

**Krista Riukula** (Aalto University)

I study the effect of a generous child home care allowance, that strongly influences mothers' decision to stay at home when the child is 1-to-3-years-old, on marital stability. I use variation from changes in the municipality specific supplement to the Finnish child home care allowance to identify the causal effect of decreases in women's labour force participation on marital stability. I find that, while decreasing mothers' employment, child home care allowance increases marital stability in the long-run. The effect is driven by more traditional couples, i.e. couples where the husband is the main breadwinner.

### **Internships and Labour Market Entry**

**Tuomo Virkola** (European University Institute)

Internships have become common in college-to-work transition in many countries. Yet, so far there exists little evidence on their potential effects on students. In this paper, I exploit a randomized internship subsidy scheme at the University of Helsinki to study how internships affect students' labour market outcomes around graduation. I link student records to population level employer-employee data to characterize the program impacts. I find that internship experience improves students access to professional occupations and more prestigious workplaces as measured by co-worker characteristics. I also find suggestive evidence that internships improves the matching of students to occupations.

## Abstracts

Room  
Ls19

Session 2f: Labour supply and participation (cont.)

### **The Effect of Relabeling and Incentives on Retirement: Evidence from a Pension Reform**

**Ohto Kanninen** (Labour Institute for Economic Research), Jon Gruber, Satu Nivalainen, Terhi Ravaska, Roope Uusitalo

In 2005 there was a large policy reform in the Finnish pension system which beside changing the accrual rates also lowered the eligibility age for full old-age pension. Depending on the age at the time of the reform, individuals experienced different sizes of increases in their pension wealth and in incentives to continue working. This reform provides a good setting to estimate the financial incentives to retire. Beside the financial incentives, the reform also changed the labels of the retirement ages. Before the reform, individuals below the age of 65 would be early retirees while after reform the individuals could retire on full benefits already before the age of 65.

In this study we exploit the Finnish pension reform and provide estimates for the income and substitution effect and also show that relabeling effect, i.e. changing the social norm to retire fully at an earlier age, explains a large part of the changed retirement behavior. Using unique monthly retirement data we show that there are large spikes right at the eligibility ages, especially for the normal old-age retirement age.

Room  
Ls03

Session 3a: Empirical macroeconomics

### **What does “below, but close to, two percent” mean? Assessing the ECB’s reaction function with real time data**

**Maritta Paloviita** (Bank of Finland), Markus Haavio, Pirkka Jalasjoki, Juha Kilponen

Price stability is an explicit target for the ECB, but the definition of the 2% target is less clear in its monetary policy stance over time. This study presents two alternative interpretations of the ECB’s definition of price stability. First, the ECB dislikes inflation rates above 2% more than rates below 2%. Second, the ECB’s policy responses to past inflation gaps are symmetric around a target of 1.6% to 1.7%. Out-of-sample predictions of the reaction function based on the second interpretation track well an estimated shadow interest rate during the zero lower bound period. Our analysis is based on reaction function estimations which make use of real time quarterly Eurosystem/ECB staff macroeconomic projections data.

### **The long-term unemployed adjusted NAWRU series for Selected European countries**

**Markku Lehmus** (ETLA)

Virallisissa arvioissa esitettyjä NAWRU-estimaatteja kohtaan on esitetty viime vuosina monenlaista kritiikkiä. Euroopan komission menetelmän tuottamat NAWRU-estimaatit ovat monen maan tapauksessa niin lähellä toteutuneita työttömyysasteen lukuja, ettei arvioita ole pidetty uskottavina. Toisaalta perinteinen Phillipsin käyrä, ts. inflaation ja työttömyysasteen välinen negatiivinen riippuvuus, näyttäisi heikentyneen tai jopa katkenneen monessa länsimaassa tällä vuosikymmenellä. Tässä artikkelissa estimoidaan NAWRU:n tasoa ja muutoksia valikoiduissa Euroopan maissa käyttäen Phillipsin käyrän (tila-avaruus) esitystapaa, jossa annetaan pienempi paino pitkäaikaistyöttömien määrälle muihin työttömiin verrattuna. Estimoinnissa hyödynnetään Kalman-filtteriä, jonka avulla voidaan konstruoida estimaatit havaitsemattomalle muuttujalle, tässä tapauksessa NAWRU:lle. Pitkäaikaistyöttömille asetettu pienempi paino vahvistaa työttömyyden ja palkkainflaation välistä yhteyttä valikoiduissa Euroopan maissa. Tuloksena saadaan vähemmän volatiileja aikasarjoja, jotka ovat myös keskimäärin matalampia tasoiltaan kuin komission tuottamat NAWRU-estimaatit.

## Abstracts

Room  
Ls03

Session 3a: Empirical macroeconomics (cont.)

### **Implications for Aggregate Inflation of Sectoral Asymmetries: an empirical application**

**Hannu Koskinen** (University of Tampere), Jouko Vilmunen

Following the theoretical identification scheme that relies on the two sector DSGE macro model derived in a study by Koskinen and Vilmunen (2017), the focus of this study is to empirically estimate and identify the possibly divergent sector specific parameters within an economy. We analyse and compare two different sectors of the finish economy, manufacturing industry and building industry, each in turn to the rest of the economy during 2000:Q1- 2015Q2. It is hence assumed, that the parameters of interest within a sector reflect the divergent preferences of economic agents to the goods produced at different sectors. The relative price movements and adjustment asymmetries stemming from these kind of divergences has a central role in allocational efficiency and welfare of the economy. Then this diversity has important implications to any economic policy practised as these divergent preferences could give rise to asymmetric reaction to any shock that hits the economy. As a result, there is evidence that the economy could be characterised to be compounded of divergent groups of goods. These groups, then, has group specific parameters reflecting different behaviour of the agents and their preferences to the goods produced.

Room  
Ls06

Session 3b: Regional and municipal economics

### **The Effects of Municipal Mergers on Voter Turnout**

**Simon Lapointe** (VATT), Tuukka Saarimaa, Janne Tukiainen

We study the effects of jurisdiction size on turnout in a difference-in-differences framework, using data from a wave of municipal mergers in Finland in 2009. We find that mergers initially increase voter turnout, but later decreases it. These general trends, however, hide heterogeneous effects. We find that the initial increase in turnout is mostly driven by merging municipalities who represent a larger share of the total voting population in the merger, lie closer to the central municipality, and experience a smaller increase in population due to the merger. Conversely, the decline in later years is mostly driven by merging municipalities who represent a smaller share of the merger, lie farther away, and experience a large increase in population. We also find that municipal mergers decrease political efficacy.

## Abstracts

Room  
Ls06

Session 3b: Regional and municipal economics (cont.)

### **Regional economic effects of Seinäjoki University of Applied Sciences in 1992–2017**

**Susanna Kujala** (University of Helsinki), Jouko Kinnunen, Outi Hakala, Hannu Törmä

The Seinäjoki University of Applied Sciences (SeAMK) has provided vocational tertiary-level education already for 25 years in the South Ostrobothnia province of Finland. In this paper, we estimate the economic importance of SeAMK by means of historical computable general equilibrium (CGE) analysis with the RegFinDyn simulation model of the Rurality Institute University of Helsinki. The model is first calibrated to follow the official regional accounting, employment and demographic statistics during 1995–2014/2016. In the counterfactual scenario, the share of SeAMK is subtracted out of the region's educational and research, development and innovation activities. Through the comparison of the actual developments to the counterfactual scenario of decreased educational activities, we can highlight the direct and indirect effects of SeAMK. According to our results, SeAMK has made considerable positive contributions to the regional GDP and employment, as well as to private consumption and population. For example, the contribution of SeAMK to the GDP of South Ostrobothnia increased from 0.4 percent in the mid-1990s to 3.2 percent by 2016. The effects to employment were of comparable size as well. By the end of the simulation period, the population size would have been around 4,750 smaller without the activities of SeAMK in place. In fact, the effects of SeAMK are likely to be even greater than shown here because all of the impacts can not be measured in numbers.

### **Veropohjan arvostus maapohjan verotuksen haasteena**

**Risto Peltola** (National Land Survey of Finland)

Maapohjaan kohdistuva kiinteistövero saa ekonomistien lähes jakamattoman se suosion. Se on parhaimmillaan vaikutuksiltaan neutraali ja huonommillaankin ehkä "vähiten huono vero". Ekonomistien antama tuki on merkittävästi vaikuttanut siihen, että Suomessa kiinteistöveron roolia kuntien rahoitus-essa halutaan politiikkaohjelmissa nostaa, ja että maapohjan verotusarvojen laskentaan parhaillaan uudistetaan maassamme. Lähtökohtaisestihan kiinteistöveron on ehkä epäsuositumpi kuin jopa verot keskimäärin.

Toisaalta ekonomistit ovat osoittaneet kovin vähän kiinnostusta veropohjan mittaamiseen osana maan verotusta. Implisiittisesti vallalla tuntuu olevan ajatus, että maapohjan käypä arvo saadaan kyllä aina selville. Jos ostaja ja myyjä pystyvät sopimaan kauppahinnasta, miksei julkinen valtakain siihen pysty paljon paremmilla asiantuntijaresursseilla?

Käsitys veropohjan mittaamiseen helppoudesta johtaa moniin hätäisiin johtopäätöksiin kuten siihen, että julkisen joukkoliikenteen investoinnin voidaan helposti rahoittaa kiinteistöveron nousulla. Käsitys vero-pohjan mittaamiseen helppoudesta saattaa johtaa myös harhaiseen arvioon veron regressiivisyydestä, jos verotusarvot eivät seuraakaan käyviä arvoja.

Esityksessäni kerron kiinteistöjen verotusarvojen uudelleen laskennasta Suomessa, se toteutetaan vuosina 2017-2019. Esittelen lyhyesti käytettävän datan ja käytetyt tilastolliset ja spatiaalisen yleistyksen menetelmät. Erityisesti kuvaan lähestymistavan, kun maapohjaa joudutaan arvioimaan kalliissa sijainnissa, jossa hintainformaatiota suoraan maapohjasta ei juuri ole, mutta rakennetuista kohteista (kuten asunnoista) hintadataa on yllin kyllin.

Kiinteistöihin kohdistuva vero on ollut ekonomistien agendalla ainakin kaksi vuosisataa. Toisaalta väli- neet arvioida veropohjan alueelliset erot ovat nykyään paljon paremmat kuin vaikkapa vielä 20 vuotta sitten. Esitykseni sijoittuu taloustieteen ja kiinteistöjen massa-arvioinnin välimaastoon ja sisältää paljon modernin paikkatietotekniikan käytännön sovelluksia.

## Abstracts

Room  
Ls06      Session 3b: Regional and municipal economics (cont.)

### **Mapping the Two Faces of Geography: Compensation and Agglomeration**

**Sakari Lähdemäki** (Labour Institute for Economic Research), Eero Lehto, Eero Mäkynen

We study how geographical factors relate to the labor productivity of an economy. We test how, for example, the following factors are related to productivity; agriculture, forest, gas, minerals, population, density, remoteness and education. Our data covers 42 developed or advanced developing countries for the period 1995-2011. We present a modified Schumpeterian growth model with CES production function which from we derive the hypotheses we test. Furthermore, we study through which possible channels these geographical factors affect. That is, we test whether these factors have an indirect effect on productivity through R & D-intensity, education and the intensity of consumer goods production. We find evidence, for example, on the following hypotheses: agriculture, gas reserves and forest are negatively related to productivity whereas minerals, density and centrality are positively related to productivity. More specifically, we find that the agglomeration related to density increases R& D-intensity strongly and therefore it impacts positively on labor productivity. This occurs despite the finding that density lowers the level of education.

Room  
Ls07      Session 3c: Firms and firm level data

### **Firm growth and congestion from unprofitable firms - Evidence from firm-level data**

**Juuso Vanhala** (Bank of Finland), Satu Nurmi, Matti Virén

In this paper we study the role of unprofitable firms in constraining market entry and growth of potentially profitable enterprises. Using firm-level data from Finland (1999-2015), we document a secular rise in the proportion of unprofitable firms. The phenomenon is not constrained to specific types of firms or particular sectors of the economy, but is broadly observed across firms of different characteristics and across macro sectors. We study the implications of this phenomenon for distorting competition, market congestion and slowing down productivity growth. We study the relationship between weak firm performance and the growth rate of output and productivity and we find evidence that the prevalence of unprofitable and zombie firms is related to slower productivity growth. By testing whether the growth of (the share of) Zombie firms shows as lower levels of market concentration, which we measure by means of the Herfindahl index, we can provide one data-consistent explanation for the observed change of the pattern of the market structure.

### **Oil price collapse and firm leverage in resource-dependent countries**

**Sanna Kurronen** (University of Helsinki)

In this study, we look for a financial channel between oil price volatility and the resource curse by using firm-level data. We show that a collapse in oil price leads to an adverse effect on firm borrowing in resource-dependent countries for both resource and non-resource firms, whereas in non-resource-dependent countries only the resource sector is harmed. We also find evidence of flight to quality in lending, suggesting that the decline in leverage is to some extent attributed to the supply of credit. The results suggest that oil price volatility harms economic diversification in resource-dependent countries through a financial channel.

## Abstracts

Room  
Ls07

Session 3c: Firms and firm level data (cont.)

### **Female entrepreneurs, firm performance and gender pay gap**

**Satu Nurmi** (Statistics Finland), Alexander Kritikos, Mika Maliranta

We study the gender pay gap using new information on female entrepreneurship and management in private sector limited liability companies. We hypothesize to find relatively better compensation for females in the sense of a lower pay gap in female-led firms. This may either be related to different management practices, to different productivity levels by gender, or to different wage-setting processes. Earlier findings for instance suggest that female leaders are able to better match employees to jobs corresponding to their skills and thus pay employees wages that are closer to their productivity. We use detailed register data on wages and occupations to study the role of female entrepreneurs. Our person-level results indicate the following: 1) Female-owned and female-managed firms have lower gender pay gap than male-led firms controlling for various person and firm-level factors. 2) It seems that the gender pay gap has declined during the last decade but the difference in the gap between female and male entrepreneurs remains stable over time. 3) Regarding firm age, we find that the gender pay gap is the highest among the most mature male-owned firms. 4) We find that female pay gap is the smallest among female-owned low-productivity (relative to other firms in the same industry) firms. Among female-owned high-productivity firms the pay gap is almost as large as in the male-owned firms. The analysis will be further extended to analyze whether male-owned firms are more profitable due to higher rents and wage discrimination.

### **Financial Crisis and Firm Entry in Small Open Economies**

**Kristine Koponen** (University of Helsinki)

The global financial crisis spread from US to the rest of the world at the latter half of 2008. While emerging countries were not at the center of the crisis, it spread to them quickly, as they were unable to insulate themselves from shocks originating from advanced economies. The subsequent fall in real output was dramatic, but it is less documented that firm entry suffered as well. This article studies the transmission of global financial shocks to firm entry and production decisions, and to the real macroeconomy. In order to explain the link between global financial shocks and new firm creation, this paper introduces a small open economy model with endogenous firm entry and external financing of production and startup costs through equity or international debt. An adverse financial shock tightens a collateral constraint for short-term borrowing by firms, leading to a decline in real macroeconomic variables, equity price, international debt and firm entry.

## Abstracts

Room  
Ls08

Session 3d: Labour 3

### **Firm profitability and the gender difference in profit sharing**

**Matthias Strifler** (University of Jyväskylä)

An important finding from the rent sharing as well as wage gap literature is that the extent of profit sharing differs for female and male workers. Sorting as well as gender differences in bargaining are proposed as explanations. This paper analyzes profit sharing depending on the underlying profitability situation for female and male employees. As firms' profitability and their ability to pay improves, male workers benefit much more than female workers. As firms' profitability situation deteriorates wages of both gender remain unaffected. This finding underlines the importance of the bargaining effect.

### **What happened to piece rates? Job complexity and the changing compensation contract: Evidence from Finland, 1980 to 2012**

**Tuomas Pekkarinen** (Aalto University & VATT), Thomas Lemieux, Chris Riddell

Despite credible evidence of strong productivity gains associated with their introduction, various reports suggest that piece rates have declined. However, the literature has struggled to produce a reliable time series of data on compensation contracts. We use detailed payroll records from Finland covering more than 30 years and (virtually) the entire manufacturing sector. Consistent with various anecdotes and some single-firm case studies, we find a dramatic decline in the use of piece rates: in the early 1980s more than 30% of blue-collar workers were paid based on piece rate contracts; this rate had fallen close to 10% by 2012. At the same time, the use of group-based performance pay increased from 20% to well over 30% in 2007 before declining again during the great recession. Some incentive contract theory argues that piece rates tend to be optimal when tasks are simple/one-dimensional, and output/product quality is less of a concern. We provide preliminary evidence that a substantial component of the decline of piece rates can be tied to the increasing complexity of jobs.

### **Where have workers from routine jobs gone? Evidence from the 1970s**

**Terhi Maczulskij** (Labour Institute for Economic Research), Mika Maliranta, Sari Pekkala Kerr

This paper studies the job market polarization and occupational mobility of routine workers using administrative data on the entire Finnish population for the 1970-2014 period. Routine manual jobs have been disappearing, and the demand of abstract jobs have been increasing as far back as the 1970s. The occupational restructuring from routine to abstract jobs mostly takes place at the intensive margin, which means that people change their jobs. On the contrary, only a small fraction of occupational restructuring happens at the extensive margin, when people who leave the labor market from routine occupations are replaced by people who enter service occupations. Routine cognitive workers are more likely to move to abstract tasks, while routine manual workers are more likely to end up in service jobs or become unemployed. However, the up movement of routine workers is most likely to be explained by career progression rather than routinization-driven replacement of employees.

## Abstracts

Room Ls08      Session 3d: Labour 3 (cont.)

**Porjai Chalermsook** (Aalto University)

In this study, we explore the relationship between export intensity and wage inequality across gender and different skills, focusing on Finnish manufacturing firms. We use the matched employer-employee data to perform our study. Accounting for both workers' and firms' characteristics, we found evidences that (i) there is an export premium of up to 3.2%, (ii) women enjoy less export premium than men, and (iii) the export premium varies in different skill groups.

Room Ls010      Session 3e: Game theory

### **Strategic Short-Termism: Implications for the Management and Acquisition of Customer Relationships**

**Topi Miettinen** (Hanken), Rune Stenbacka

We study a duopoly model of history-based price competition with switching costs and demonstrate how strategic history-based pricing induces the owners of the firms to implement managerial short-termism by delegating the pricing decisions to managers with a discount factor lower than that of the owners. This delegation equilibrium with short-termist managers can be implemented by managerial contracts with a probability of renewal lower than the discount factors of the owners. Managerial short-termism is a strategic device whereby owners can soften price competition at the stage when customer relationships are established.

### **Recursive Clustering Methods for Network Analysis**

**Hannu Salonen** (University of Turku), Mitri Kitti, Matti Pihlava

We study axiomatically recursive clustering methods for networks. Such methods can be used to identify community structures of a network. One of the methods is based on identifying a node subset that maximizes the average degree within this subset. Once such a subset is found, the method is applied on the subnetwork whose node set is the complement of the first cluster (the "main cluster") identified, and so on recursively. The method produces an ordered partition of the node set of the original network. Another method studied here is based on identifying a node subset that maximizes the average link strength within this subset. We give a list of axioms that these methods satisfy, and provide an axiomatic characterization of the first method.

### **Optimal Bayesian Mechanisms Without Monetary Transfers: A Solution to the Two-Person Implementation Problem**

**Ville Korpela** (University of Turku), Michele Lombardi

This paper continues a line of inquiry begun by Palfrey and Srivastava (1989b) by investigating two-person implementation problems in undominated Bayesian equilibria in private value environments, as well as in common value environments, when monetary transfers are not allowed. The characterization results are obtained by supplementing the well known incentive compatibility condition with two auxiliary conditions, one of which is inspired by the notion of interim incentive efficiency due to Holmström and Myerson (1983). It shows that the two-person Nash bargaining solution due to Myerson (1984) can be successfully implemented in undominated Bayesian equilibria.

## Abstracts

Room  
Ls010      Session 3e: Game theory (cont.)

### **Mechanisms for allocating rights to forge blocks**

**Mitri Kitti** (University of Turku)

This paper studies mechanisms for allocating the rights to forge blocks on a blockchain. The proof of work contest (PoW) where all block generators, or miners, compete for finding the next block is characterized. The central feature of the PoW contest is that no miner has an incentive to participate with multiple identities—a property called sybil proofness. There are several alternatives for the PoW that involve payments and messaging between the miners and the protocol, features that are not used in the PoW contest. A class of mechanisms that generalizes the proof of stake mechanism is introduced for allocating multiple rights to carry out the forging of blocks. Auctioning the rights is also discussed. However, in general no single-round auction is sybil proof.

Room  
Ls12      Session 3f: International economics

### **Habit persistence and structure of food imports – a cross-country expenditure system**

**Janne Niemi** (VATT)

Underlying motivation in this study is in modelling the evolution of tastes in demand and dynamics of 'cultural preferences' in developing countries in a case where these preferences are different in each country. In this context, a model on habit persistence in imports of food products is presented and estimated. The estimations strongly suggest presence of habit persistence and its variation between countries, but the best functional form to model it remains inconclusive. The paper presents an econometric study applying Seemingly Unrelated Regression (SUR) for estimation of an expenditure system for selected imported food commodities. For each commodity, the system consists of a panel of importing countries and different sources of imports in years 1997–2013. The data is constructed from the FAO international agrifood trade time series complemented with country or country-pair specific indicators from other sources. Parameters are estimated for three model specifications corresponding to different assumptions about preferences and the habit persistence dynamics between countries.

## Abstracts

Room  
Ls12

Session 3f: International economics (cont.)

### **Third-country effects of export incentives**

**Svetlana Ledyeva** (Aalto University)

Though empirical literature on the effects of export incentives for domestic export is very rich, export incentives' effects for third countries' export have not yet been examined empirically. This paper sheds some light on this issue. According to existing theory, effects of domestic export incentives for third countries' exporters can be both negative (due to increased competition) and positive (due to input-output linkages in global value chains (GVCs)). This study disentangle between these effects empirically by examining how export incentives implemented in Brazil, India and China (BICs) in 2009-2015 affected export of other 18 large emerging markets. Exploiting cross-product and cross-country variation over time, the paper finds that negative competition effects of Brazilian, Indian and Chinese export incentives have caused annual drop in export of affected emerging country on average by 0.2, 1.56 and 6.47 percentage points, respectively. On the other hand, the study reveals that due to positive "GVCs input-output linkages" effects of Indian and Chinese export incentives, export of affected emerging country has been increasing annually on average by 0.43 and 16.4 percentage points, respectively. Overall, cumulative effects of recent Brazilian and Indian export incentives for other large emerging countries' exports have been negative albeit relatively small (caused on average annual drop in export of affected country by 0.2 and 1.13%, respectively) whereas cumulative effects of Chinese incentives have been positive and rather large (caused on average annual increase in export of affected country by 10%).

### **Oil Prices and Uncertainty over the OPEC Meeting Cycles: Evidence from Crude Oil Futures Returns**

**Vesa Soini** (University of Stavanger)

This paper studies the behavior of fully-collateralized crude oil futures returns over the OPEC regular meeting cycle. Using data on futures prices, the paper documents a sharp and statistically significant increase in long-maturity crude oil futures returns starting a week before the scheduled OPEC meetings and lasting for two weeks. The pattern is explained by increasing hedging needs of commercial producers, as open interest and trading volume displays noticeable increases shortly before the meetings. Moreover, the pattern lends support to the theory that OPEC operates as a cartel and casts serious doubts to the efficiency of crude oil markets.

## Abstracts

Room  
Ls12      Session 3f: International economics (cont.)

### **Patterns of International Capital Flows and Their Implications for Developing Countries** **Mika Nieminen** (University of Jyväskylä)

According to standard economic theory, capital should flow from rich to poor countries. However, a reverse pattern has prevailed in the world economy. This is the so-called Lucas paradox. In addition, it has been shown that, counterintuitively, there is a negative correlation between capital inflow and productivity growth across developing countries. This is the so-called allocation puzzle. This review sheds light on the following questions: “What are the patterns of international capital flows in the world economy?”, “What are the most plausible explanations for these patterns?”, and “What are the possible implications of these developments for developing countries?” In addition, the current period is compared with the first era of financial globalization (1870-1914). The review finds that heterogeneity in financial development is central in explaining why capital tends to flow from poor to rich countries; that the net capital flow between poor and rich countries has been dominated by the reserve accumulation by central banks in emerging market and developing economies; and that capital controls have prevented private flows from offsetting the effect of reserve accumulation. These findings suggest that the Lucas paradox is not a paradox after all and that there is no allocation puzzle in private capital.

Room  
Ls13      Session 3g: Health

### **Migration and long-term mental health: The displaced Finns after World War II** **Henri Salokangas** (University of Turku), Jari Haukka, Jaana Suvisaari, Matti Sarvimäki, Pekka Martikainen

We examine the long-term mental health effects of internal displacement among people who were forced to migrate within Finland in the 1940s. Using this displacement during World War II as an exogenous shock to internal migration, we estimate the effect of migration on several mental health measures. We find that displacement had some protective effects for first generation forced migrants but harmful effects to the children of the displaced.

## Abstracts

Room  
Ls13

Session 3g: Health (cont.)

### **Weight hurts: The effect of obesity on depression**

**Jutta Viinikainen** (University of Jyväskylä), Petri Böckerman, John Cawley, Terho Lehtimäki, Suvi Rovio, Ilkka Seppälä, Jaakko Pehkonen, Olli Raitakari

**Objective:** The aim of this study was to examine the effect of body weight on depression symptoms using Mendelian randomization. **Methods:** Participants (N=1584) were from the population-based nationally representative Young Finns Study (YFS) that began in 1980 when six cohorts were recruited to the longitudinal study. BMI (kg/m<sup>2</sup>) measurements and a revised version of Beck's Depression Inventory in 2001 were used in the analyses. We first used a linear regression (Ordinary Least Squares, OLS) to estimate the relationship between BMI and depression symptoms. To identify a causal relationship, we exploited Mendelian randomization and used a polygenic score as an instrument for BMI. The genetic score was based on 32 genetic variants that genome-wide association studies (GWASs) have found to be associated BMI. Because the genotypes are randomly assigned at conception, the instrument induces relevant exogenous variation in BMI and thus enables identification of causal effects. **Results:** BMI in 2001 was associated with depression symptoms in 2001 (regression coefficient (b) = 0.02; 95% Confidence Intervals [CI] = 0.01, 0.03) according to the linear regression results. The results based on Mendelian randomization suggests that there is a positive causal effect of BMI on depression symptoms (b = 0.06; 95% CI = 0.01, 0.11).

### **Reality Check: Effects of a National Health Information Technology on Prescription Drug Abuse**

**Mikko Nurminen** (University of Turku), Petri Böckerman, Mika Kortelainen, Liisa Laine, Tanja Saxell

This paper examines the causal effects of an implementation of a health information technology (IT) on prescription drug abuse. We focus on the potential mechanisms through which E-prescriptions affect health outcomes by concentrating on globally one of the most non-medically used group of pharmaceuticals i.e. benzodiazepine (BZD). To identify the causal effects we exploit a gradual and plausibly exogenous rollout of E-prescriptions system over the course of five years in the Finnish setting. The estimates are based on the use of a nationwide rich patient-level register-based data. We establish three main results. First, prescription drug abuse (PDA) related diagnoses increase in response to the reform in the patient population under the age 40. We also find that there is some indication that the estimated effect is larger for patients with a PDA history. Second, our results suggest that the E-prescription system increases BZD use by making prescription renewal easier. The increase in the number of prescriptions is an important unintended but earlier neglected effect of E-prescription system. Thus, the new system potentially creates new addicts. Third, we examine the substitution effects in response to the system. There is no clear indication on the substitution effects into illegal drugs but weak evidence of increased pharmacy robberies in the urban areas. The effects of E-prescriptions on drug abuse should be taken into account in the design and implementation of new technology, because otherwise the potential benefits of the new system on health outcomes are substantially eroded.

## Abstracts

Room  
Ls13

Session 3g: Health (cont.)

### **Effect of co-payment ceiling on prescription drug consumption**

**Jouko Verho (VATT)**

This study estimates the impact of patient co-payment ceiling on prescription drug consumption in Finland. In 2009, the Finnish health insurance covered an average of 51% expenditures on prescription drugs until an annual expenditure ceiling is reached. After exceeding the ceiling, all drug expenditures are covered apart from a small prescription fee. This creates exogenous variation in the drug prices faced by the patient that is utilised in the analysis. The analysis is based on the comparison of patients who have exceeded the ceiling with those who have similar drug consumption histories except for differences in the timing of purchases. The analysis data include prescription drug purchases for all Finnish patients in 2006–2010.

## Abstracts

Room  
Ls02

Session 4a: Inequality

### **Wage Gaps in Board Interlock Networks**

**Matti Pihlava** (University of Turku), Mitri Kitti

This paper explores the wage gaps of top executives of Finnish companies by gender over the period 1995–2014. The wage gaps are assessed by using a matching comparison methodology. Female executives are matched to males in same boards and with same experience. In monetary terms about one third of the median wage gap is explained by selection of men and women on different firms. Another one third is explained by the human capital estimated with the number of years as a board member. The remaining wage gap is about 16 %. When matching CEOs with their male predecessors no wage gap is observed between men and women. Hence, the CEO wage gap is largely explained by women concentrating on certain firms. The network arising from interlocking boards is utilized in the comparison of CEO wages. It is observed that the further away in the network the new CEO comes from, the lower the wage. In general women tend to arrive from longer distances in the network.

### **Expansion of higher education and equality of opportunity**

**Hannu Karhunen** (Labour Institute for Economic Research), Roope Uusitalo, Tuomo Suhonen

How regional expansion of university network relates to changes in equality of opportunity? Finnish university network expanded rapidly from two major local multidisciplinary universities to multiple universities in in the 50's and 60's. This study evaluates how equality of opportunity would have developed if the expansion would have been regionally more limited and occurred only within existing institutions.

## Abstracts

Room  
Ls02

Session 4a: Inequality (cont.)

### **Ylisukupolvinen eriarvoisuus Suomessa**

**Aleksi Karhula** (University of Turku), Outi Sirniö

Perhetaustan vaikutus aikuisiän koulutukseen, ammattiasemaan, tuloihin, perheenmuodostukseen, terveyteen ja kuolleisuuteen on osoitettu lukuisia kertoja. Usein aihepiirin tutkimus noudattelee tieteenalojen välisiä rajoja eikä yksittäisistä tutkimuksista saa kokonaiskuvaa sukupolvien välisistä yhteyksistä. Yhdistämällä eri alojen tutkimustietoa pyrimme esittämään kokonaiskuvan ylisukupolvisista vaikutuksista Suomessa. Keskitymme erityisesti kolmeen tutkimuskysymykseen. Ensimmäisenä kartoitamme, mistä aihepiireistä on tehty ylisukupolvista tutkimusta eri aloilla. Kysymme, nähdäänkö ylisukupolvinen tutkimus tärkeänä kaikilla aloilla? Vastaus tähän on myöntävä. Kaikilla tarkastelemillamme aloilla nähdään selvästi perhetaustan yhteys aikuisikäen tärkeänä tutkimuksen aihealueena. Tämän jälkeen kysymme, eroavatko alat toisistaan kysymysten asettelun tai menetelmällisten valintojen osalta. Tämän osalta tuloksemme ovat vielä alustavia. Sosiologiassa, sosiaalipolitiikassa ja kansantaloustieteessä kysymys ylisukupolvisten yhteyksien voimakkuudesta nähdään enemmän itsessään mielenkiintoisena. Terveys- ja väestötieteessä kysymys on useammin sosioekonomisten terveyserojen selittämisestä perhetaustalla. Viimeinen tutkimuskysymyksemme koskee havaittujen vaikutusten muotoa. Onko ylisukupolvisissa vaikutuksissa havaittavissa yleisiä linjoja tai toistuvia rakenteita? Alustavien tulosten perusteella voidaan yhteyksien sanoa olevan useammin vahvempia erittäin hyvä- tai huono-osaisilla. Lisäksi esittelemme yhteyksien eroja miehillä ja naisilla. Kokonaisuudessaan artikkelimme tarjoaa kattavan kuvan Suomea koskevaan ylisukupolvisuuden tutkimukseen. Pyrimme myös hahmottamaan tutkimuskentän sokeita pisteitä ja tarkastelemaan hedelmällisiä jatkotutkimuksen kohteita. Huomattavaa on, että eri alojen tutkimus keskustelee hyvin harvoin keskenään, mikä olisi toivottavaa tiedon hyödyntämisen näkökulmasta ja voisi avata uusia näkökulmia alojen sisäisiin keskusteluihin.

### **Income inequality, redistributive preferences, and the extent of redistribution: An empirical application of optimal tax approach**

**Elina Tuominen** (University of Tampere), Matti Tuomala, Hannu Tanninen

We examine empirically the relationship between the extent of redistribution and the components of the Mirrlees framework. We have constructed our main variables from the Luxembourg Income Study (LIS) database which provides information on both factor and disposable incomes. Our redistributive preference measure is constructed using the optimal tax formula, for which we have collected data from various sources. In addition to traditional linear specifications, we use flexible methods to allow nonlinearities because pre-specified functional forms are not easy to justify in empirical investigations. We study 14 advanced countries over the last three to four decades and find a positive link between factor-income inequality and the extent of redistribution. We also find support for the relationship between the taste for redistribution and observed extent of redistribution.

## Abstracts

Room  
Ls03

Session 4b: Housing economics

### **Housing Market Anticipation Effects of a New Metro Line**

**Oskari Harjunen** (City of Helsinki)

In this paper, I estimate a series of hedonic housing market models to analyze if the residential housing markets anticipate a forthcoming new metro line. I solve for the timing of the market adaptation as well as the average geographical extent and magnitude of this anticipation effect by using housing prices from a high detail housing sales data. I use difference-in-differences estimation to account for the possible endogenous placement of the new metro stations. I find that housing markets start adjusting to the information about the infrastructure investment swiftly after the constructions begin, years before the metro becomes operational. Apartments within 800 meters from the new metro stations, where the accessibility will be increased, include a positive price premium that starts to converge around four to five percent even five years before the metro becomes operational.

### **Capitalization of property taxes: the role of salience**

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

This paper studies the capitalization of the property tax into housing prices and tests whether the salience of the tax affects the rate of capitalization. Identifying the effect of the property tax on housing prices clean from confounding factors is challenging because local taxes and local public services are jointly determined. We utilize the fact that the Finnish general property tax applies to dwellings on owned lots but not to similar dwellings on rented lots to isolate the impact of the property tax from other determinants of housing prices. Quantifying the degree of capitalization requires more detailed data. However, we can already test whether the salience of the tax affects capitalization by utilizing differences in the payment method by the type of ownership arrangement (direct ownership or shares in housing company). Our preliminary findings suggest that capitalization rate of the property tax is higher when the tax is more salient.

### **Effects of Real Estate Transfer Taxes: Evidence from a Natural Experiment in Finland**

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

We estimate the effect of the transfer tax on household mobility using Finnish micro data on the entire population in 2001-2015. In 2013, the transfer tax rate was increased for apartments (shares in housing companies), but the tax rate for single family houses remained unchanged. This reform enables the use of differences-in-differences design. We find that the transfer tax has a significant impact on mobility and transaction volume. Our results imply that the tax creates sizable welfare losses due to increased mismatch of dwellings and households. We also find some indications of possible labor market effects as the transfer tax seems to distort inter-regional mobility.

## Abstracts

Room            Session 4b: Housing economics (cont.)  
Ls03

### **Welfare Effects of Housing Transaction Taxes**

**Marko Terviö** (Aalto University), Niku Määttänen

We evaluate the welfare cost of ad valorem housing transaction taxes, focusing on distortions in the sub-optimal matching of houses and households as the channel of welfare effects. We present a one-sided assignment model with transaction costs and imperfectly transferable utility where households are heterogeneous by incomes, houses are heterogeneous by quality, and housing is a normal good. We calibrate the model with data from the Helsinki metropolitan region to assess the welfare impact of a counterfactual tax reform, where the transaction tax is replaced by a revenue equivalent ad valorem property tax. The aggregate welfare gain would be 13% of the tax revenue at the current 2% tax rate. The share of ex post losers from the reform is increasing in the tax rate even though the aggregate welfare cost of transaction taxation increases rapidly with the tax rate, with the Laffer curve peaking at about 10%.

Room            Session 4c: External positions and current accounts  
Ls12

### **External positions, interest rates, and revealed preferences**

**Adam Gulan** (Bank of Finland)

We apply the weak axiom of revealed preferences (WARP) in the context of a two-period small open-economy model. According to WARP, certain changes in current account positions should be precluded. In particular, a country which initially ran a trade deficit, should remain in deficit after the exogenously given interest rate drops. Similarly, a country running a surplus should remain so if the interest rate goes up. The argument also applies to shifts in the sign of net foreign asset position. It holds for both an endowment economy and a production economy. Our approach allows us to control for endowment and wealth effects and changes. To check whether the model is in line with WARP, we employ aggregate panel data for 22 developed economies.

### **Time preference explanation for the persistent current account imbalances**

**Mika Nieminen** (University of Jyväskylä)

This paper utilizes the first two large-scale international surveys on economic preferences and proposes a novel time preference explanation for the persistent current account imbalances. We provide robust empirical evidence that countries with less patient individuals tend to run current account deficits which in turn implies accumulation of external debt. This theoretically plausible but empirically so far largely unexplored relationship holds true for both the euro area current account imbalances and the global current account imbalances. Preferences are fundamental and stable determinants of economic development. Hence our time preference explanation for the current account imbalances goes deeper than previously proposed explanations which are based on proximate macroeconomic determinants. Our finding suggests that the pattern of current account imbalances is fairly persistent and cannot easily be tackled by policy makers.

## Abstracts

Room  
Ls14

Session 4d: Environment

### **Consumers' willingness to provide flexibility in the electricity markets**

**Teemu Meriläinen** (University of Oulu), Maria Kopsakangas-Savolainen, Rauli Svento, Enni Ruokamo, Otto Appelgren

Many aspects of households' motivation to participate to the energy market are not yet well understood. Hence, the mechanisms to promote flexibility among households are still inadequate. This paper provides an ex-ante evaluation of Finnish households' acceptance of hypothetical flexibility contracts and services. We used a survey-based method known as Choice Experiment (CE) to analyze individuals' preferences for different characteristics of demand side flexibility. This study provides detailed information on household preferences toward demand side flexibility. We investigate households' willingness to offer flexibility via timing their electricity usage and heating, whether they are interested in flexible contracts such as real-time pricing, two-rate tariffs or power based tariffs. We also aim is to explain taste variation among individuals. Different socio-demographic and behavioral characteristics of the respondents are expected to have significant role in explaining their choices. Third, we explore individuals' actual choices regarding e.g. electricity sales contracts and other energy-related behavior. Lastly, we examine households' level of knowledge and thoughts regarding different energy-related issues. Our results indicate that respondents' sensitivity to restrictions in household electricity usage is greater than sensitivity to restrictions in heating. They also imply that fluctuating real-time pricing contracts are perceived as something negative, and that individuals therefore want to be compensated in order to accept them. Moreover, the findings suggest that there is likely room for new flexible distribution contracts, such as the power based pricing scheme, in the market. There exists also some other value creating elements that could drive increases in demand side flexibility besides reductions in annual energy payments. One example is possible system level reductions in CO<sub>2</sub> emissions that is valued among households. Finally, our analyses illustrate the importance of careful planning of flexibility services, as several socio-demographic characteristics clearly affect individuals' decisions. Overall, demand side flexibility is expected to take an increasing role in the future power systems. Households should adjust their electricity consumption based on price signals and other incentives in order to facilitate efficient use of generation and network infrastructure and functioning of overall electricity market. By investigating carefully the determinants of demand side flexibility, we can support the development of the future energy system that could also meet households' needs.

## Abstracts

Room  
Ls14

Session 4d: Environment (cont.)

### **Policy congruence on nuclear power between citizens and policy makers**

**Piia Remes** (VATT), Anni Huhtala

Policy congruence between voters and politicians reflects the quality of democracy. In a well-functioning democracy voters' preferences are mirrored in policy decisions. Trust and satisfaction in politics increase as congruence improves. Many studies find high policy congruence on salient, ethical and intergenerational issues. We study preference congruence between public and policy makers on one such issue, nuclear power. A survey eliciting preferences of Finnish MPs and citizens on a vote on nuclear power was conducted. We measure congruence as distance between voters' and policy makers' preferences. Using pooled cross-section data from four surveys, we measure the level of congruence at constituency level using individual and district data. We find that preferences regarding voting decision and risk perceptions differ between citizens and MPs. Furthermore, the degree of congruence varies e.g. across gender, age and income level as well as by issue salience. MPs are in general more pro-nuclear and underline the economic risks in their decision whereas the majority of citizens oppose nuclear power and regard accident and nuclear waste risks high. Moreover, women differ more from female MPs than men from male MPs. Male gender, age and high income are all positively associated with higher congruence.

### **Emissions reduction by optimization of residential hot water heating under endogenous prices**

**Santtu Karhinen** (University of Oulu), Hannu Huuki, Enni Ruokamo

Residential sector has large underutilized potential for demand response in its electricity consumption, especially heating, optimization. In this study residential electric hot water heaters (EHWH) are considered as energy storage providing demand response in electricity markets in Finland. Heating optimization is conducted with a dynamic programming model describing the water heating characteristics. Cost and CO<sub>2</sub> emissions minimizing optimal heating controls are solved for an individual household and for a pool of EHWHs controlled by an aggregator. Water heating costs under fully dynamic day-ahead real-time pricing contract (DA-RTP) and static pricing contracts are compared. This is the first EHWH optimization study quantifying the effect on CO<sub>2</sub> emissions and considering CO<sub>2</sub> emissions minimization as the optimization target. There are three main results. First, currently common Time-of-Use contracts yield relatively close to optimal solution when compared to DA-RTP contracts. Secondly, cost savings become less negligible as more households optimize water heating, as the overall price volatility is dampened due to endogenous prices. Lastly, cost minimizing solution yields relatively good solution from environmental perspective, when compared with the emissions minimization target.

## Abstracts

Room  
Ls14      Session 4d: Environment (cont.)

### **The Economic Value of Mixed Municipal Waste**

**Hannu Savolainen** (Finnish Environment Institute & University of Oulu), Santtu Karhinen, Olli Sahimaa

High recycling rate of mixed municipal waste (MMW) is an EU-wide policy target aiming to increase material efficiency and abatement of environmental degradation. During the last years, landfilling has been decreased by large-scale waste incineration, but at the same time it can be seen as a major obstacle in reaching material reuse and recycle targets. Between 2007 and 2014 waste incineration of all municipal waste has increased from 12% to 48% while the recycling rate has stayed at a constant level of ca. 30 %. In this paper we study the economic value of MMW for waste incinerators. In our framework, we treat MMW as a valuable resource instead of the common view of finding the most cost-efficient way of getting rid of it. In the analysis we use Finnish data on municipal-level MMW flows and characteristics of the waste incineration plants. The economic value of MMW for waste incineration plants is estimated by analyzing plants' cost structures and income streams from district heat supply, electricity generation and gate fees. In addition, the effects of plants' fuel substitution are quantified. After determining the economic value, we discuss how the waste incinerators are affected by possible policy measures (e.g. tax schemes) and changes in the operational environment (e.g. changes in the cost structures or income streams).

Room  
Ls07      Session 4e: Innovation and cybersecurity

### **Do Overoptimistic Men Drive Creative Destruction? Evidence of Gendered Inventive Activity in Finland**

**Jussi Heikkilä** (University of Jyväskylä)

This study extends the analysis of the "patenting gender gap" into design rights and utility model (UMs), which are alternative methods for protecting intellectual property (IP). The analysis is descriptive and uses registry data from the Finnish patent and registration office (PRH) covering the years 1982–2013. A persistent gender gap is found for all intellectual property rights (IPRs): women are inventors and designers only in a small share of filings. The gap has narrowed over time for national patent and design right filings but not for UM filings. It is found that, in comparison to men, women are relatively less often individual inventors or designers and more often members of inventor or designer teams. This is consistent with prior results in the literature concerning gender-specific personality characteristics: men tend to be more optimistic, overconfident, competitively inclined, and less risk-averse. Findings suggest that IPR gender gaps may, in addition to gender-specific educational choices, be driven by gender-specific personality characteristics.

## Abstracts

Room  
Ls07

Session 4e: Innovation and cybersecurity (cont.)

### **Design Strategies for Innovation – sales or novelties?**

**Carita Eklund** (University of Vaasa)

Design is considered fundamental for business performance. Although traditional focus has been on the role of design in shaping end-products, design is increasingly seen as an approach influencing innovation processes and strategy. Previous empirical work finds that design or user focus supports innovation and profits together with R& D. Existing quantitative analysis of the relation between design and innovation has not distinguished between different types of design activities, either limiting focus to end-product design or a single broad conceptualization of design. Existing empirical work has thus not been able to examine the roles of different forms of design activities for innovation. Design activities can range from the shaping to applying a design approach to the use of design thinking as a strategy that governs the R& D and innovation process. Meanwhile, design thinking may require substantial integration of different business functions in order to succeed, and can potentially constrain novel technical development activities. We utilize mixed methods approach combining a qualitative study of firm innovation strategies with quantitative analyses using the Danish Community Innovation Survey (CIS) for 2010 and 2012. Utilizing unique data on design activities in CIS, we analyze the role of different types of design on the propensity for innovation and on innovation performance for Danish firms. Thereafter, we estimate the relation between design strategies and sales from innovation. The interviews show how innovative companies seek to create a competitive edge through close customer interaction that uses design at different stages. The quantitative estimation shows that different design thinking skills support different kind of innovations. Our results suggest that product shaping supports both innovation and innovative sales.

### **Cyber War and the Arms Race**

**Vesa Kanninen** (University of Helsinki)

Cyber technology represents digital military capability with the purpose of causing damage to the military strength of a potential enemy. War using conventional weapons may be preceded by or combined with a strike using cyber technology. This paper introduces such technology into the theory of conflicts, suggesting the striking proposal that the expected return on cyber investment is convex. It is shown that hostile countries choose to invest an equal amount of resources in their militaries even when their cyber capabilities differ, but they invest less than in the absence of cyber technology. Moreover, though access to cyber technology limits the international arms race with conventional weapons, it makes wars with conventional weapons more likely. Heterogeneity in the success of cyber programs creates a first-mover advantage for a superior country in terms of a possibility for a pre-emptive strike. The threshold value for the strike is stated. Finally, the optimal scale of the cyber program of a country expected to have access to a superior cyber capability is derived.

## Abstracts

Room  
Ls07

Session 4e: Innovation and cybersecurity (cont.)

### **Economics of cybersecurity investment and threat intelligence sharing** **Anna-Maija Juuso** (University of Oulu)

In this paper, we study organizations as cybersecurity investment decision-makers by comparing empirical data with different theories of cybersecurity investment and threat intelligence sharing. In April 2017, we conducted a survey with the help of the National Cybersecurity Centre Finland (NCSC-fi) to investigate how Finnish companies were investing in information security. Given the recent surge of interest in threat intelligence sharing, we wanted to investigate when such open collaboration was a viable means of improving cybersecurity. To this end, we applied innovation acceptance theories to understand which factors are encouraging organizations to collaborate and which factors preventing them from opening up their information security processes. Our findings question the role of organizations as active defenders and other frequent assumptions made in cybersecurity investment and threat information sharing models.

Room  
Ls010

Session 4f: Labour 4

### **Employee skills and occupational sorting** **Juho Jokinen** (University of Jyväskylä), Antti Sieppi

This study examines the role of cognitive and social skills in sorting of individuals to different occupations. To analyze how occupational sorting depends on skills, we employ PIAAC survey data of adult skills to create occupational skill requirement measures and conscript data from the Finnish Defense Force to create individual-level cognitive and social skill measures. These skill measures are linked to longitudinal register data from Finland for the period 1990–2014. The register data contain detailed information on various background variables, and allow us to examine later labor market outcomes of individuals who were enrolled for military service. A descriptive analysis of the data shows that employment share has increased in social skill-intensive occupations over time, with the largest increase occurring in occupations that require high levels of both social and math skills. Furthermore, the results show that there is a strong linear relationship between occupational social skill requirement measure and employee-specific social skill measure (with correlation coefficients typically above 0.8), indicating that more social individuals self-select into occupations in which these skills are of higher importance. The econometric analysis suggests that employees working in social-skill intensive occupations have higher social and cognitive skills than employees who work in occupations with lower social skill intensity.

## Abstracts

Room  
Ls010

Session 4f: Labour 4 (cont.)

### **Causal impacts of home-ownership on entrepreneurship: Accounting for externalities**

**Jani-Petri Laamanen** (University of Tampere)

Earlier studies present few estimates of the effect of home-ownership on entrepreneurship at the individual-level and at the regional level. The literature on the determinants of entrepreneurship distinguishes between push and pull impacts. We utilise a Finnish rental market deregulation reform which created exogenous variation in regional home-ownership to identify the effects of home-ownership on entrepreneurship. We present estimates that account for labour market externalities, namely the effects of others' home-ownership on one's probability of entrepreneurship. The results point to significant positive impacts of regional home-ownership on entrepreneurship. Home-ownership's well-known negative labour market effects may work as a push factor, encouraging entrepreneurship, especially in bad macroeconomic times.

### **Financial shocks and endogenous labor market participation**

**Lauro Carnicelli** (University of Helsinki )

This paper studies the effects of financial shocks on labor market participation and dynamics with a focus on jobless recoveries. For that purpose, a model based on collateral constraints (Jermann and Quadrini(2012)) with frictional labor markets (Zanetti (2017)) and with endogenous labor market participation (Campolmi and Gnocchi (2016) and Veracierto (2008)) will be used. I show that, first, the introduction of the labor participation margin enhances the understanding of the labor market facing an economy with financial frictions and increases the volatility of labor market tightness. Second, that financial shocks are able to generate a jobless recovery without nominal rigidities.

### **Unionizing Non-search Unemployment**

**Oskari Vähämaa** (University of Turku)

This paper explores the effects of unionization in an island model of Lucas and Prescott (1974) with different union structures. When a model with competitive labor markets is set to match the empirical fact that a large number of unemployment spells ends with recalls, an introduction of a large labor union that represents all workers and sets a common economy-wide minimum wage, increases unemployment substantially. Moreover, the whole increase is about non-search unemployment as search unemployment actually reduces marginally. If the same degree of unionization is generated by a continuum of small unions, the aggregate unemployment reaction is somewhat smaller. However, the increase in non-search unemployment is still considerable.

## Abstracts

Room  
Ls13

Session 4g: Banking

### **Are Chinese Big Banks Really Inefficient? Distinguishing Persistent from Transient Inefficiency** **Zuzana Fungacova** (Bank of Finland, Paul-Olivier Klein, Laurent Weill )

There is large evidence that the five largest state-owned banks in China (the Big Five) suffer from low cost efficiency. The objective of this paper is to investigate how overall inefficiency of Chinese banks is decomposed between persistent inefficiency and transient inefficiency. While persistent efficiency reflects structural problems, transient efficiency is associated with short-term events. We use the model from Kumbhakar, Lien and Hardaker (2014) based on the stochastic frontier approach to measure persistent efficiency and transient efficiency for a large sample of 170 Chinese banks over the period 2008-2015. We find that Big Five banks have lower cost efficiency on average than other Chinese banks, which results from lower persistent cost efficiency. Big Five banks do not significantly differ in transient efficiency from other Chinese banks over the period, even if their transient efficiency is more volatile. Our findings support the view that major structural reforms need to be implemented to enhance efficiency of Big Five banks.

### **CEO Pay-Share and Risk-taking in Larger Banks** **Jamshed Iqbal** (University of Vaasa)

I investigate the relationship between CEO pay-share and risk-taking in larger bank (defined as banks with assets in excess of the Dodd-Frank threshold for enhanced supervision) over the period of 1992 – 2016. I use CEO pay-share (pay inequality between the CEO and other executives) as proxy for CEO compensation and find that higher CEO pay-share is generally associated with less bank risk but is positively associated with bank -risk in larger banks. The findings of this study suggest that higher CEO pay-share encourages risk-taking in larger banks by providing them tournament incentives.

### **Uncertainty Shocks and Firm Dynamics: Search and Monitoring in the Credit Market** **Marlène Isoré** (University of Helsinki & Bank of Finland), Thomas Brand, Fabien Tripier

We develop a business cycle model with gross flows of firm creation and destruction. The credit market is characterized by two frictions. First, entrepreneurs undergo a costly search for intermediate funding to create a firm. Second, upon a match, a costly state-verification contract is set up. When defaults occurs, banks monitor firms, seize their assets, and a fraction of financial relationships are severed. The model is estimated using Bayesian methods for the U.S. economy. Among other shocks, uncertainty in productivity turns out to be a major contributor to both macro-financial aggregates and firm dynamics.

## Abstracts

Room            Session 4g: Banking (cont.)  
Ls13

### **Western European stakeholder banks' funding structures and the Basel III net stable funding ratio**

**Jari-Mikko Meriläinen** (University of Vaasa)

The net stable funding ratio (NSFR) requires banks to acquire stable funding equivalent to the stability of their assets. The NSFR considers customer deposits, long-term liabilities and equity to be the most stable sources of funding. This study uses a large panel of Western European banks to examine the determinants of bank funding structures. In particular, this study examines the role of bank ownership type in determining the bank funding structure. The results suggest that large banks are likely to have less funding from customer deposits. This result holds for all the bank ownership types; commercial banks, cooperative banks and savings banks. However, large cooperative and savings banks fill the "gap" caused by lower customer deposit funding ratios by using more other long-term liabilities in their funding. As a consequence, large cooperative and savings banks do not have significantly less stable funding profiles than do their smaller counterparts. Conversely, large commercial banks have less stable funding profiles than do smaller banks.

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