국외출장 결과보고서

빈곤통계 분석 이슈 관련 연구 동향

2019. 6.

KIHASA 한국보건사회연구원
Korea Institute for Health and Social Affairs

1 출장 개요

□ 출장목적

○ 정책 모의실험을 활용한 다양한 분야의 연구수행 및 정책효과와 빈곤 불평등 통계지표 분석 관련 전문가 Workshop(IMA World Congress)에 참석하여 정책변화 관련 예측 분석 및 빈곤 불평등 통계지표 산출 관련 이슈 및 연구동향을 조사하고, 생애주기 및 정책대상별 빈곤통계 산출과 정책 활용사례 자료 수집을 통하여 연구수행에 활용하고자 함

□ 연구과제

○ 생애주기별 빈곤율 통계 산출 및 분석 연구
(보건복지부, 2019. 1 ~ 2019. 11)

□ 출장자 : 최 현 수 연구위원 (사회보장통계센터장)

□ 출장기간 : 2019. 6. 18 (화) ~ 6. 21 (금) (2박 4일)

출장일	행선지(국가/도시)	방문기관/면담자	세부 활동내용
2019.06.18.(화)	인천-아일랜드 Dublin		출국 (도시 이동)
2019.06.19.(수)	아일랜드 Galway	National University of Ireland / World Congress 발표 및 참석자 다수	마이크로데이터 기반 정책 모의실험을 통한 정책효과 분석 및 빈곤 불평등 통계 분석 관련 Workshop(IMA World Congress) 참석 (1일차)
2019.06.20.(목)	아일랜드 Galway (도시 이동)	National University of Ireland / World Congress 발표 및 참석자 다수	마이크로데이터 기반 정책 모의실험을 통한 정책효과 분석 및 빈곤 불평등 통계 분석 관련 Workshop(IMA World Congress) 참석 (2일차)
2019.06.21.(금)	아일랜드 Dublin-인천		20일 저녁 귀국 / 21일 인천 도착

□ 출장지역 : 아일랜드 Galway, National University of Ireland

2 주요 내용

가. IMA(International Micro-simulation Association) World Congress 개요 및 주요 프로그램

□ IMA 7th World Congress (National University of Ireland, Galway)

○ The 7th World Congress of IMA(the International Microsimulation Association) will be hosted by the National University of Ireland, Galway from Wednesday, June 19 through Friday, June 21, 2019. We encourage submission and participation in the fields (broadly defined) of policy microsimulation, agent based modelling and computational methods.

○ Plenary Speakers

- • Herwig Immervoll, OECD
- • Deborah Schofield, University of Sydney
- • Andreas Peichl, Director of @ifo_Institut's Center for Macroeconomics & Surveys, Professor of Economics @LMU_Muenchen
- • Eveline Van Leeuwen, Vrije Universiteit, Amsterdam

○ Program Chair: Cathal O'Donoghue, National University of Ireland, Galway

○ 전체 30개 세션으로 구성되어 총 124편의 논문이 발표되었으며, 다양한 정책 영역에서 Micro simulation을 활용한 연구 자료가 발표 및 토론됨

NUI Galway
OÉ Gaillimh

International Microsimulation Association

2019 - IMA 7th World Congress, Galway June 19-21

Welcome
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Accommodation
Food
Galway City
Organising Committee
Paper Submission
Deadlines
CONFERENCE PROGRAMME
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Contact
All Events

Organising Committee

Program Chair:

Prof. Cathal O'Donoghue, National University of Ireland, Galway

Local Organising Committee

Cathal O'Donoghue, Dilovar Haydarov, Cathal Geoghegan, Mary Ryan, Andreas Tsakaridis, Deirdre Finan

Program Committee:

Gijs Dekkers, Melissa Favreault, Seiichi Inagaki, Jinjing Li, Philippe Liegeois, Cathal O'Donoghue, Sophie Pennec, Matteo Richiardi, Raymond Wagener, Denisa Sologon

NUI Galway
OÉ Gaillimh

International Microsimulation Association

2019 - IMA 7th World Congress, Galway June 19-21

Forthcoming Events | Facilities | Travel to Galway | General Information | Terms & Conditions

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CONFERENCE PROGRAMME

Please follow below links (**updated on 18th June, 6:20 PM**):

PROGRAMME Schedule

PROGRAMME Listing

Book of Abstracts

Conference Presentations

Web Design Galway

□ 주요 발표 세션별 정책영역 구성

Day 1	Room 1: AM200 (Fottrell Lecture Hall) Arts Millennium Building	Room 2: G010 Library Seminar Room, Hardiman Building	Room 3: G011 Library Seminar Room, Hardiman Building	Room 4: AM101 Seminar Room Arts Millennium Building	Room 5: The Bridge Room (1001), Hardiman Building
815	Registration				
845	Welcome & Official Opening: Prof. Ciarán Ó hÓgartaigh, President of NUI Galway Dr Gijs Dekkers, President, International Microsimulation Association, Federal Planning Bureau, Brussels				
900	Plenary 1 – Health Microsimulation, Prof Deborah Schofield, Director of GenIMPACT: Centre for Economic Impacts of Genomic Medicine, Maquarie University				
1015	Coffee Arts Millennium Foyer				
1040	Parallel 12	Parallel 1	Parallel 5	Parallel 23	Parallel 28
	Health and Social Care (Dynamic)	Agent Based Models	Comparative Models I	New Models (Static)	Spatial Models I
1230	Lunch (An Bhialann)				
1330	Parallel 21	Parallel 3	Parallel 6	Parallel 27	Parallel 29
	Methodology (Dynamic)	Alzheimers, Dementia and Non-Communicable Diseases	Comparative Models II	Policy Analysis (Static)	Spatial Models II
1520	Coffee Arts Millennium Foyer				
1545	Parallel 20	Parallel 7	Parallel 10	Parallel 30	
	Methodology	Demographic Models	Economic Crisis and Recovery	Tools (Static)	
1735	Plenary 2 - Prof. Andreas Peichl, Director of the ifo Center for Business Cycle Analysis and Surveys and Professor of Economics at the University of Munich				
2000	Seminar Dinner, Connemara Ballroom, Meyrick Hotel, Eyre Square, Galway				
Day 2					
900	Plenary 3: Prof Eveline Van Leeuwen, Professor in Urban Economics, Wageningen University, Vice President European Regional Science Association				
1000	Coffee Arts Millennium Foyer				
1030	Parallel 18	Parallel 11	Parallel 17	Parallel 2	
	Labour Markets and Retirement (Dynamic)	Genetics, Disease Incidence and Epidemiology	Labour Market Models	Agricultural and Environmental Policy	
1230	Lunch (An Bhialann)				
1400	Parallel 26	Parallel 13	Parallel 19	Parallel 8	
	Policy Analysis (Dynamic)	Health Economics I	Labour Supply Models	Development Models I	
1600	Coffee Arts Millennium Foyer				
1630	Plenary 4 - General Meeting of the International Microsimulation Association				
1800	Informal Social Evening with Traditional Irish Music, The College Bar (NUI Galway)				
Day 3					
900	Plenary 5: Round Table on the Future of Comparative Microsimulation Modelling				
1000	Coffee Arts Millennium Foyer				
1030	Parallel 24	Parallel 14	Parallel 16	Parallel 4	
	Pensions I	Health Economics II	Indirect Tax & Consumption Models	Bio-energy, Land-Use and Forestry	
1220	Plenary 6: Microsimulation for Policy, Dr Herwig Immervoll, Senior Economist and Head of Employment-Oriented Social Policies, OECD				
1320	Lunch (An Bhialann)				
1430	Parallel 25	Parallel 15	Parallel 22	Parallel 9	
	Pensions II	Health Systems	Model Developments (Dynamic)	Development Models II	

□ 주요 영역별 발표주제

Day 1	Room 1: AM200 (Fottrell Lecture Hall) Arts Millennium Building	Room 2: G010 Library Seminar Room, Hardiman Building	Room 3: G011 Library Seminar Room, Hardiman Building	Room 4: AM101 Seminar Room Arts Millennium Building	Room 5: The Bridge Room (1001), Hardiman Building
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1015	Coffee Arts Millennium Foyer				
1040	Parallel 12 -	Parallel 1 -	Parallel 5 -	Parallel 23 -	Parallel 28 -
	Projections of economic impacts of early retirement in informal carers: Results from a microsimulation model Care&WorkMOD (10) Presenter: Melanie Zeppel	Replacing rules by Neural Networks - a framework for agent-based modelling (6) Presenter: Georg Jager	Who pays more? A microsimulation analysis on the effective VAT burden of migrant and native households in 16 European countries (30) Presenter: Michael Christl	China's Personal Income Tax Reform in 2018 and Its Impact on Income Distribution (20) Presenter: Peng Zhan	Experiences of spatial microsimulation with big and little data: A comparison of models for (parts of) the United Kingdom and New Zealand (36) Presenter: Ben Anderson
	Dynamic microsimulation of the elderly disability (42) Presenter: Elsa Perdrix	Toward stronger fiscal integrations in the European Union: An agent-based approach (123) Presenter: Marko Petrović	DYNAMIS-POP – A Multi-Country Portable Dynamic Microsimulation Model for Population, Education and Health Applications in Developing Countries (62) Presenter: Martin Spielauer	Twelve years of the "International Journal of Microsimulation". A bibliometric network analysis about actors and fields of application (119) Presenter: Marc Hannappel	Labour market microsimulation model with spatially distinct labour markets (17) Presenter: Tjasa Bartolj
	Introducing health and care in the Danish microsimulation model SMILE (54) Presenter: Sren Skotte Bjerregaard	Microsimulations and uncovering the structure of botnets from real-world data (14) Presenter: Agnieszka Werpachowska	Assessing the Anti-Poverty Effects of Social Transfers: Net or Gross? And does it really matter? (112) Presenter: Chrysa Leventi	A Comparison of EUROMOD and SWITCH, Two Microsimulation Models of the Irish Tax and Benefit System (45) Presenter: Maxime Bercholz	REMIKIS A regionalized dynamic microsimulation for Trier (70) Presenter: Schmaus Simon
	Reducing the probability of moving to a nursing home in the Netherlands: a static microsimulation approach (59) Presenter: Evelien Eggink	Intergenerational Transmission of Informational Disadvantage A New Approach to Immobility across Generations (98) Presenter: Elif Cansu Akoguz			MikroSim A dynamic spatial microsimulation model for Germany (73) Presenter: Ralf Muennich
1230	Lunch (An Bhialann)				
1330	Parallel 21 -	Parallel 3 -	Parallel 6 -	Parallel 27 -	Parallel 29 -
	Adding Historical Earnings to the 2004 and 20018 Survey of Income and Program Participation (SIPP) (116) Presenter: Karen Smith	Projected Prevalence for Alzheimers disease and other Dementias in Korea from 2010 to 2065 using a Micro-simulation Model (50) Presenter: Young-Eun Kim	The stabilising effect of tax-benefit systems on gender earnings inequality in Europe (8) Presenter: Claire Keane	Feasible Smooth Income Tax Schedules: Benefits and Distributional Implications (4) Presenter: Eric Sommer	Conditional Independence, Calibration and the Generation of Synthetic Spatial Microdata (106) Presenter: Cathal O'Donoghue
	Design Options for a new Dynamic Microsimulation Model for Retirement Income in Canada (91) Presenter: Chantal Hicks	Risks and Costs of Severe Cognitive Impairment at Older Ages: Literature Review and Projection Analyses (90) Presenter: Melissa Favreault	The Contribution of Proportional Taxes and Tax-Free Cash Benefits to Income Redistribution Over the Period 2005-2018: Evidence from Italy (120) Presenter: Stefano Boscolo	Optimal Policy Modelling and the Australian Social Security System (67) Presenter: Ben Phillips	Generating a German Small-Scale Base Population for Spatial Microsimulation (71) Presenter: Hariolf Merkle

	Implementing empirical results of panel models with lagged dependent variables and random intercepts into dynamic microsimulation (93) Presenter: Dawid Bekalarczyk	Projecting Alzheimers and other dementias in Canada (92) Presenter: Douglas Manuel	Intensity of poverty among young adults in Europe: how are the strategies of European countries? (76) Presenter: Vincent VERGNAT	Tax-benefit reforms and the anti-poverty marginal benefit of public funds in Belgium (103) Presenter: Diego Collado	Comparison of sample free and sample based synthetic populations (105) Presenter: Robert Tanton
	Analysing Explanatory Factors Impacting Farm Income: A Comparison of Deep Learning and Regression Models (124) Presenter: Dilovar Haydarov	The Development of Reporting Guidelines for Public Health Non-Communicable Diseases Modelling Studies (96) Presenter: Douglas Manuel			
1520	**Coffee Arts Millennium Foyer**				
1545	Parallel 20 -	Parallel 7 -	Parallel 10 -	Parallel 30 -	
	A new measure of Intra-generational Redistribution within PAYG Pension Schemes and its Application to German Micro-data (13) Presenter: Sven Stowhase	Modelling migration between municipalities in Flanders using Liam II (1) Presenter: Ingrid Schockaert	The Tax Structure of an Economy in Crisis: Greece 2009-2017 (75) Presenter: Fidel Picos	SociaLab: A Census-based Microsimulation Tool for Policy Inquiry (23) Presenter: Peter Davis	
	Money metric utilities and reference prices (64) Presenter: Andre Decoster	MCMATCH: Morrison-Chénard Marriage Algorithm by Targeted Couples Handling (32) Presenter: Richard Morrison	Drivers of Income Inequality in Luxembourg: Isolating the Roles of Policy, Demography, Market Returns and Labour Market Structure (80) Presenter: Emilia Toczydlowska	A Better Measure of Poverty and Optimal Policy Modelling for Australias Social Security System (68) Presenter: Ben Phillips	
	Using synthesis methods to estimate micro-level data with multiple sources A simulation study (77) Presenter: Kristina Neufang	And When I Die: Modeling End of Life and After-death Costs as Part of Financial Planning (34) Presenter: Richard Morrison	Accounting for the distributional effects of the 2007-2008 crisis and the Economic Adjustment Program in Portugal (88) Presenter: Denisa Sologon	Going public with model family calculations: Finnish Household Income Calculator for visualizing the earnings, taxes, benefits, and housing costs in Finland (24) Presenter: Pasi Moisio	
	Validation of Complex Microsimulation Model (99) Presenter: Jinjing Li			Simulate your own reform - Bringing microsimulations closer to policy makers and the public (84) Presenter: Norbert Švarda	
1735	**Plenary 2 - Prof. Andreas Peichl, Director of the ifo Center for Business Cycle Analysis and Surveys and Professor of Economics at the University of Munich**				
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1030	Parallel 18 -	Parallel 11 -	Parallel 17 -	Parallel 2 -	
	Estimating sub-national behaviour in the Danish microsimulation model SMILE a general approach for estimating transition probabilities with numerous high dimensional covariates (53) Presenter: Marianne Frank Hansen	Modelling the economic impact of next generation sequencing on childhood cancer managementa microsimulation approach (38) Presenter: Owen Tan	How to improve the labour income tax system in Sweden (33) Presenter: Peter Ericson	An intelligent system based agriculture microsimulation model with bootstrapping validation (74) Presenter: Azizur Rahman	
	Capturing persistence and change in dynamic microsimulation models (118) Presenter: Rita Scholl	Long-term economic impacts of exome sequencing for suspected monogenic disorders (40) Presenter: Luke Rynehart	Microsimulation of the value chain (19) Presenter: Cathal Geoghegan	Fuel Taxation by CO2 Emissions: Distributional Effects of a Green Fuel Tax	

				Reform in Germany (89) Presenter: Lara Quack	
	Long-term dynamic microsimulation modelling of labor market careers: a new approach using profiles and matching (69) Presenter: Karel Van den Bosch	OncoSim cancer microsimulation model: Assessing cancer burden attributable to modifiable risk factors in Canada (81) Presenter: Keiko Asakawa	Adjusting the welfare system to new labour market risks: Integrating (78) Presenter: Jannek Muehlhan	Improving the Localised Environmental Precision of a Spatial Farm Level Microsimulation Model (110) Presenter: Dilovar Haydarov	
	Modelling foreign labour inflows using a microsimulation model of an ageing country - Slovakia (72) Presenter: Miroslav Stefanik			Does the Spatial Distribution of Attitudes to Lime Application match the Spatial Distribution of Farm Economic Return (111) Presenter: Dilovar Haydarov	
1230	**Lunch (An Bhialann)**				
1400	Parallel 26 -	Parallel 13 -	Parallel 19 -	Parallel 8 -	
	Medium-term projection for Belgium of the at-risk-of-poverty and social exclusion indicators based on EU-SILC (2) Presenter: Ekaterina Tarantchenko	IDMOD: A microsimulation model of the economic and psychosocial impacts on families affected by intellectual disability (39) Presenter: Deborah Schofield	Basic income and optimal taxes. Efficiency, equity, losers and winners. (117) Presenter: Nizamul Islam	Decomposing welfare inequality in Egypt and Tunisia: An Oaxaca-Blinder based approach (58) Presenter: Yosr Abid Fourati	
	Mobility and the lifetime distributional impact of tax and transfer reforms (7) Presenter: Barra Roantree	Validating risk factor and chronic disease projections in the Future Adult Model (121) Presenter: Bryan Tysinger	Implementing Caregiver Leave Benefits - A Microsimulation Analysis for Germany (41) Presenter: Mara Rebaudo	AN EVALUATION OF THE EFFECTS OF THE TWO MOST RECENT ITALIAN PENSION REFORMS ON SUSTAINABILITY, ADEQUACY AND INCOME DISTRIBUTION IN THE MEDIUM-LONG RUN (48) Presenter: Letizia Ravagli	
	Measuring economic insecurity with microsimulation (29) Presenter: Matteo Richiardi	The Take-Up of Health Benefits in Ireland: Insights from Microsimulation (43) Presenter: Mark Regan	Building a longitudinal income module for spatial microsimulations based on the German taxpayer panel (85) Presenter: Jana Emmenegger	Tax simulation in an economy with a large informal sector and inequality: the case of Mexico (87) Presenter: Alejandro Blasco	
	The Distribution of Private and Fiscal Returns to Higher Education: A Dynamic Microsimulation Approach (101) Presenter: Benjamin Fischer	Economic costs of lost productive life years due to chronic disease: results from a microsimulation model Health&WealthMOD2030 for Australians aged 45 to 64 years old (66) Presenter: Rupendra Shrestha			
1600	**Coffee Arts Millennium Foyer**				
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1000	**Coffee Arts Millennium Foyer**				
1030	Parallel 24 -	Parallel 14 -	Parallel 16 -	Parallel 4 -	
	What are the consequences of the AWG 2018 projections and hypotheses on pension adequacy? Simulations for three EU member states (3) Presenter: Gijs Dekkers	Evaluating the policy effects of out-of-pocket health payments on household incomes in Finland 2010-2018 (5) Presenter: Jussi Tervola	Expenditure imputation and microsimulation of VAT (9) Presenter: Zuzana Siebertova	A Microsimulation Model for the Agricultural Land Rental Market in Ireland (26) Presenter: Jason Loughrey	

	Social sustainability of the Norwegian pension system (11) Presenter: Nils Martin Stolen	Preventing disease in the elderly to improve lifetime (122) Presenter: Yu JC	Modelling value-added tax (VAT) in South Africa (55) Presenter: Wynnona Stein	EFFECTS OF CHANGING CONDITIONS FOR BIOMASS USE: RESULTS OF SYSTEM-DYNAMICS BASED SCENARIOS IN AUSTRIA (31) Presenter: Tobias Stern	
	Your Money and Your Life: Decumulation Strategies from Real Retirees, and Their Consequences (35) Presenter: Richard Morrison	Predicting long-term population health of sugar-sweetened beverage taxes: A microsimulation approach (102) Presenter: PhuongGiang Nguyen	Consumption pattern and subsistence level: Effects of changing social assistance regulations in Germany (65) Presenter: Maximilian Sommer	Towards a simulation-based understanding of biorefinery development (63) Presenter: Julia Wenger	
	A dynamic microsimulation model for Argentina's social security system (52) Presenter: Leonardo Eric Calcagno		Comparative Analysis of Different Imputation Methods to Impute Expenditures into an Income Dataset (97) Presenter: Elif Cansu Akoğuz	The Importance of Fiscal measures in Financial Incentives for Land Use Decisions (109) Presenter: Cathal O'Donoghue	
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1320	**Lunch (An Bhialann)**				
1430	Parallel 25 -	Parallel 15 -	Parallel 22 -	Parallel 9 -	
	Forecasting the Pension wealth of the Danish population in SMILE (44) Presenter: Tobias Markeprand	A multi-purpose agent-based model of the healthcare system (86) Presenter: Alejandro Blasco	The Dynamic Cross-sectional Microsimulation Model MOSART (12) Presenter: Nils Martin Stolen	Income inequality in Latin America: the role of personal income tax (51) Presenter: H. Xavier Jara	
	The Distribution of Pension Wealth in Norway (82) Presenter: Elin Halvorsen	An operationalizing theoretical framework for the analysis of universal health coverage reforms: First test on an archetype developing economy (49) Presenter: Mohammad Abu-Zaineh	DYPENSI Dynamic Pension Microsimulation Model for Slovenia: Overview, Model Architecture and Recent Developments towards a Multi-Purpose Policy Tool (16) Presenter: Natasa Kump	The supply of informal work in Colombia: a microeconometric approach (56) Presenter: David Rodriguez	
	MicroWELT - Microsimulation of Disaggregated National Transfer Accounts (NTAs) for the Comparative Study of Welfare State Regimes (61) Presenter: Martin Spielauer	Building a microsimulation model to predict future health of Canadian population: developing a framework and prototype model (94) Presenter: Koffi Kpelitse	The inequality of public pension benefits of the elderly using Estonian data (104) Presenter: Magnus Piirits	Behavioural responses in tax evasion. Could they contribute to the feasibility of Italian Government proposal of a flat tax system? (114) Presenter: Roberto Leombruni	
		Creating a synthetic database for use in microsimulation models to investigate alternative pharma-care programs in Canada (95) Presenter: Deirdre Hennessy	IRPETDIN: A DYNAMIC MICROSIMULATION MODEL FOR ITALY AND THE REGION OF TUSCANY (47) Presenter: Letizia Ravagli		
1630	**Coffee Arts Millennium Foyer and Close**				

나. 빈곤통계 연구 수행 연관 발표자료 및 이슈

1) 정책효과 최적화를 위한 균등화 지수 조정 관련 연구

○ 빈곤율 개념 및 산식은 매우 단순해 보이지만, 빈곤에 대한 정의를 내리고, 이를 측정할 경우 해결하기 어려운 다양한 문제에 직면하게 되는데, 그것은 빈곤 개념정의(절대 vs. 상대), 빈곤 분석단위(가구 vs. 개인), 가구 또는 개인의 후생 측정 기준(소득 vs. 자산 vs. 지출) 등의 문제임(Barr, 1998)

– 이에 따라, 빈곤 연구에서는 동일한 연구주제일지라도 빈곤 및 소득 관련 개념 정의, 분석 대상 및 단위 의 차이에 따라 상이한 결과를 도출할 수 있음

○ 가구 균등화 지수 관련 이슈

– 가구규모에 따른 소득 차이를 조정하기 위해 소득분배 및 빈곤통계 산출 시에 가구균등화 지수를 적용함

– 대부분 빈곤 연구에서는 OECD 국가 간 비교연구에서 활용되고 있는 가구균등화 지수(ε=0.5 ☞ SQRT(가구원수))를 사용하여 균등조정 소득을 기초로 중위소득 산출하고 있으며, 이를 개별 가구의 빈곤여부를 판별함

What are equivalence scales *(cont.)*

Household size	Equivalence scale				
	per-capita income	"Oxford" scale ("Old OECD scale")	"OECD-modified" scale	Square root scale	Household income
1 adult	1	1	1	1	1
2 adults	2	1.7	1.5	1.4	1
2 adults, 1 child	3	2.2	1.8	1.7	1
2 adults, 2 children	4	2.7	2.1	2.0	1
2 adults, 3 children	5	3.2	2.4	2.2	1
Elasticity[1]	1	0.73	0.53	0.50	0

[1] Using household size as the determinant, equivalence scales can be expressed through an "equivalence elasticity", i.e. the power by which economic needs change with household size. The equivalence elasticity can range from 0 (when unadjusted household disposable income is taken as the income measure) to 1 (when per capita household income is used). The smaller the value for this elasticity, the higher the economies of scale in consumption.

출처: OECD Project on Income Distribution and Poverty, via www.oecd.org/social/inequality.htm

- 최근 우리나라에서 제기되고 있는 가구 균등화 지수 조정 및 기준 중위소득 개편 문제 등 가구 균등화 지수 조정에 따른 기준 중위소득과 통계청 소득분배 지표 및 빈곤통계 산출 시 적용되는 중위소득의 괴리가 이슈로 제기됨
- 소득분배 통계와 복지정책 선정기준의 괴리로 인한 소득보장정책의 포괄성 및 보장수준 한계, 낮은 수준의 공적이전 정책 효과 개선방안으로서 기준 중위소득 산출 시 가구 균등화 지수의 개편을 제안한 바 있으며, 이는 가구 균등화 지수 적용 문제로 인해 1인 취약가구 등 1~3인 가구에 대해 상대 빈곤 개념에 비해 낮은 기준 중위소득이 설정됨에 따라 낮은 선정기준 및 급여수준이 적용되고 있는 상황으로부터 기인함
- 요컨대, 기존 최저생계비 기준 적용 시 문제점으로 지적되었던 1~3인 가구 선정기준 및 급여수준의 적절성 문제가 여전히 존재하며, 기준 중위소득의 일정 비율의 형태로 선정기준이 적용되었던 차상위 지원이나 부처별 복지사업 역시 복지대상 가운데 가장 많은 비중을 차지하며 빠르게 증가하는 1~3인 취약가구가 불리한 적용을 받고 있음

○ 호주에서 연구된 2편의 발표자료 역시 이러한 문제와 유사한 이슈 중심으로 가구 균등화 지수 조정에 따른 정책효과 변화 및 이와 관련된 개선 방안에 대한 연구를 제시하였으며, “Equivalence Scales, Poverty Rates and Optimal Policy Modelling using PolicyMod”를 소개함

- Ben Phillips(Australian National University, Centre for Social Research and Methods), “Optimal Policy Modelling using PolicyMod”
- Ben Phillips, Cukkoo Joseph(Australian National University, Centre for Social Research and Methods), “Equivalence Scales, Poverty Rates and Optimal Policy Modelling using PolicyMod”

Australian National University

Equivalence Scales, Poverty Rates and Optimal Policy Modelling using PolicyMod

International Microsimulation Conference
June 19 2019, Galway

Associate Professor Ben Phillips

Centre for Social Research and Methods

Australian National University

Structure of PolicyMod

- Pensions (Age, Disability, Carer, Single Parent, Veterans)
- Allowances (Unemployment Benefit, Students, Youth)
- Family Payments
- Childcare payments
- Personal Income Tax and Medicare (public health insurance)
- Additional payments and supplements

3

CENTRE FOR SOCIAL RESEARCH & METHODS

Definitions

- Poverty level is defined using equivalised household income – total household income adjusted using OECD-modified scale
- Poverty line is defined as 50% of the median equivalised household income for all household with positive income
- Poverty gap is the difference between the poverty line and household equivalised income for ALL household below the poverty line (not a household average)
- Poverty threshold is fixed for each simulation (up for debate whether this appropriate or not). Overcomes the issue of increased payments actually increasing poverty.

The Problem

- Poverty level is defined using equivalised household income – total household income adjusted using OECD-modified scale – is this an appropriate scale? Simple yes but appropriate?
- Does this lead to a certain result for OPM and poverty rates more generally?
- Assumes same per additional adult or child costs regardless of age of adult, tenure type, family types – seems unrealistic.
- May be ok for trend analysis of poverty but is it appropriate for OPM? Likely using OECD drives results where we assume that costs for an age pensioner is the same as younger adults or the costs of an unemployed renter are the same as a homeowner aged 80+

The Solution?

- We use a model of Financial Stress to produce equivalence scales.
- Equivalence scales can be thought of as an index for a particular household type that equates the income required to achieve the same utility or welfare as a reference household (say, two adults and no children).
- Food expenditure is often used to create equivalence scales as the share of food expenditure in total consumption has been found to be monotonically decreasing in income (see Deaton & Muellbauer, 1980).
- If we believe that utility is increasing in income, then any necessity that has a monotonic relationship with income can be used to create an equivalence scale.
- We can think of the equivalence scale as telling us about the amount of additional income required to achieve the same probability of experiencing FS. Inasmuch as FS is a good proxy for underlying utility, the equivalence scale will have this additional interpretation.

Financial Stress in the ABS HES (2015-16)

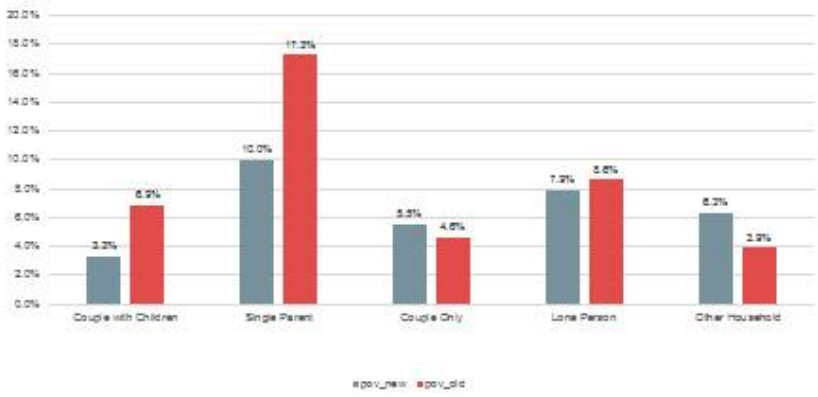
- The HES is the ABS's household expenditure survey.
- Survey consists of around 10,000 households
- Includes 15 types of financial stress or 'missing out' variables
- 41% of households have at least one FS
- 20% have >= 3 measures of stress
- We model the total number of measures (up to 15) using a negative binomial regression model
- Naturally there are alternatives such as a simpler binomial stress/no stress model
- Wanted to capture the possibility of more extreme stress

Comments on Negative Binomial Model results

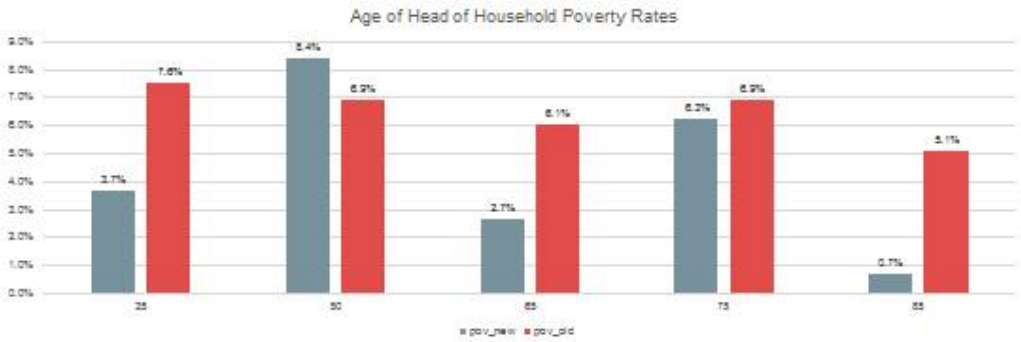
- Shows less economies of scale within households
- Single parents with significantly higher ES relative to OECD and couple result for NEGBIN modelled result
- Households headed by persons aged 85+ have much lower ES relative to OECD average results – implying consequences for retirement incomes
- Younger persons also have lower ES relative to middle aged persons.
- Results are significant enough to suggest that our Optimal Policy Modelling results will alter significantly – with lower cost of living for very young and very old and single parents higher cost of living

Poverty Results (SIH 2015-16)

Family Type Poverty Rates



Poverty Results (SIH 2015-16)



Conclusions

- Stable relationships between the selected payments and poverty can be estimated when we use an opitmised ES.
- These relationships can be combined with payment and budget constraints to solve for optimal payment levels in terms of reducing or minimizing poverty gaps and likely other policy objectives.
- Considerable reductions can be obtained for poverty gaps particularly at IU or HH level
- New ES modelling suggests that poverty rates would be lower – due to narrower equivalised income distribution
- Changed shape to poverty with older households less likely in poverty
- Single parents still have relative high poverty rates
- Results are only draft at this point

2) 지출을 반영하는 빈곤통계 지표 및 사회보장 급여를 대상으로 한 조세를 고려한 변화에 대한 산출방식 관련 연구

○ 가구 또는 개인의 경제적 수준을 측정하는 기준에 따른 빈곤통계 변화

– 일반적으로 빈곤율 분석 시 개별 가구의 경제적 후생을 측정하는 기준으로 소득을 사용하나, 노인 빈곤율 문제로 인한 우리나라의 특수성을 고려하여 자산을 반영하거나, 소득과 함께 지출을 반영한 빈곤통계 산출에 대한 정책 수요가 증가함

○ 가계부채 및 주거, 의료, 교육 등 필수적 지출 영역 사적 가계부담을 반영한 실질 가처분소득 개념을 활용하여 빈곤통계 산출방안 도출 및 분석 연구를 이번 연구에서 직접 수행 중임

– 소득 및 자산 보유와 함께 생활실태에 중요한 영향을 미치며, 사회서비스 확대와 함께 강조되고 있는 교육, 주거, 의료, 원리금 상환액 등 필수적인 지출 상황을 반영하여 국민이 체감하는 실질적 빈곤통계 분석 필요함

○ 여기서는 핀란드의 본인부담 의료비 지출 증가를 고려한 빈곤통계 변화를 분석한 연구 자료를 소개함

– Jussi Tervola, “Evaluating the policy effects of out-of-pocket health payments on household incomes in Finland 2010-2018”

The health payments and poverty in Finland 2010-2018

A simulation study

Jussi Tervola, THL

IMA Conference, June 2019, Galway

THL

NATIONAL INSTITUTE FOR HEALTH AND WELFARE

POVERTY AND HEALTH

- The regular income-based measures ignore the differences in consumption needs between individuals
- Poor are less healthy. The negative effect of weak health on income is amplified by out-of-pocket payments (OOP)
- Atkinson (2003) proposed multidimensional poverty measures (e.g. living standards, education, **health**)
- Existing studies about the poverty effects of OOPs are found mainly from countries with high poverty rate (US, developing countries)
- Existing studies are based on survey data

THL

WE STUDY FOLLOWING QUESTIONS

1. How does the prevalence of poverty change when the OOPs are considered? (Finland 2016)
2. Have the changes in OOPs affected poverty rates? (Finland 2010-2018)
3. Is the effect similar on different measures of poverty?
   a. At-risk-of-poverty rates (AROP) tied to median income
   b. Reference budget poverty (RBP) tied to fixed budget levels

METHODS

- Static microsimulation with 2016 population register data
- Built on the existing tax-benefit model SISU (Statistics Finland), extended with OOP legislation
- Outcome: simulated household incomes where OOPs are deducted 2010-2018

DATA

- Compiled administrative register data from several sources
- 15 % sample of total population 2016 (800 000 individuals)
- Including
  - public sector health care visits and treatments by type and date,
  - individul income by source and paid taxes during the year,
  - household composition at the end of the year
- No data on the actual paid OOPs. They are calculated from data according to the legislation

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FINNISH HEALTH CARE SYSTEM

- We study the OOPs of public health care :
  - More than half of all doctor's appointments
  - Relatively low OOPs (but long waiting lists)
  - Including primary care (mainly if no access to occupational care)
  - Secondary care ("monopoly")
- Excluding for now
  - Private health care (mostly primary care, high OOPs)
  - Occupational care (for employees, no OOPs)
  - Medicines

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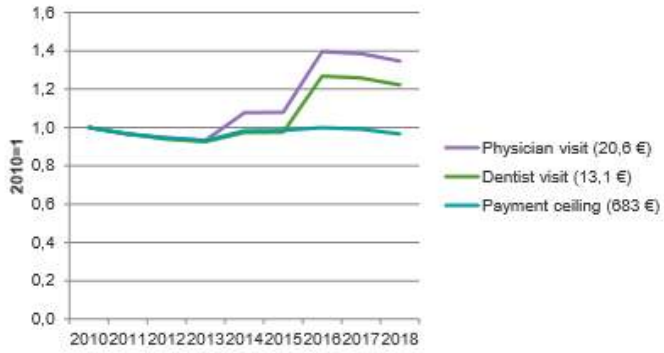
THE PAYMENTS IN THE PUBLIC SECTOR HAVE BEEN INCREASED BUT THE PAYMENT CEILING HAS BEEN STAGNANT



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RESULTS

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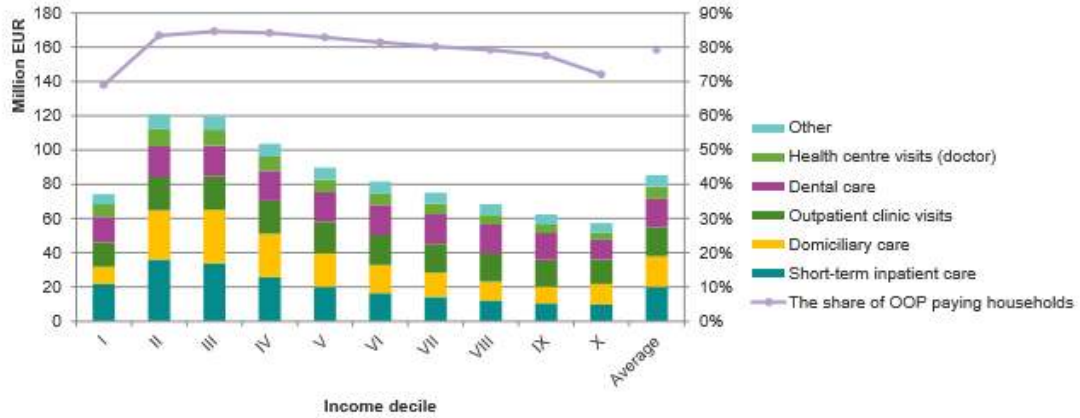
NATIONAL INSTITUTE FOR HEALTH AND WELFARE

KiHASA 한국보건사회연구원 Korea Institute for Health and Social Affairs

DISTRIBUTION OF SIMULATED OOPS 2016

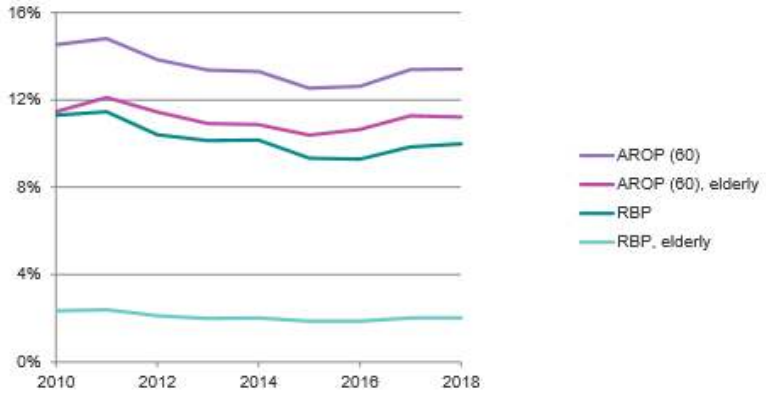


POVERTY LINES IN 2016 FOR SINGLE HOUSEHOLDS, €/MONTH

	Standard	OOPs considered
AROP (60)	1197	1187
AROP (50)	997	989
RBP[a]	986	980

[a] The mean value. The line varies according to age and dwelling area.

POLICY EFFECTS ON POVERTY WITHOUT OOP EFFECT



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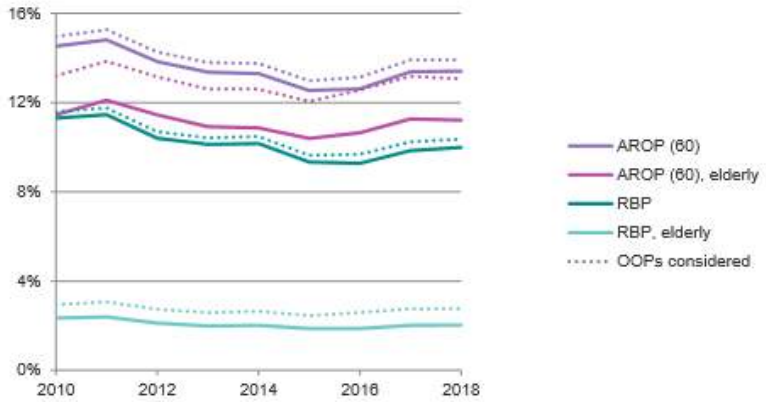
OOPS INCREASE THE POVERTY RATES OF ELDERLY



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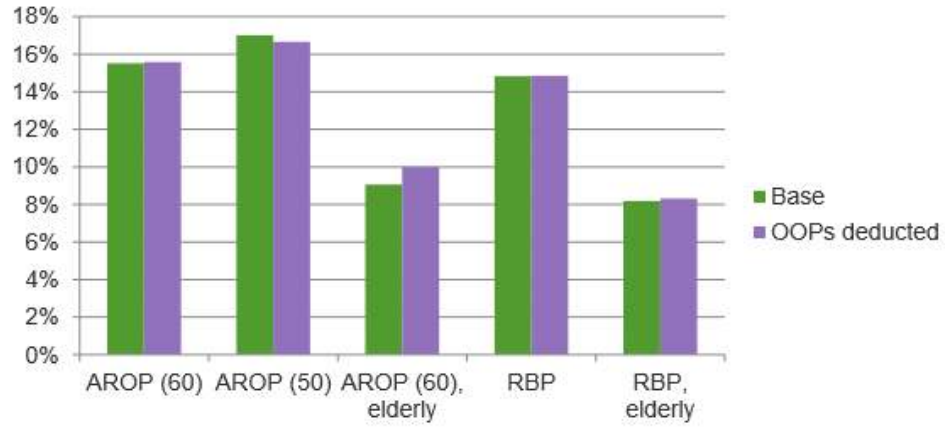
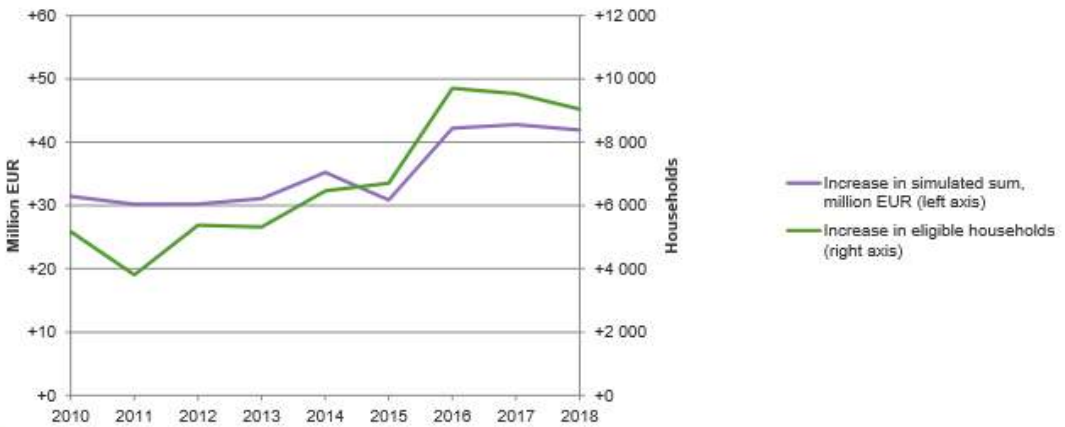
AVERAGE POVERTY GAPS (MEDIAN)

% OF POVERTY LINE 2018



THL

OOPS INCREASE THE ELIGIBILITY TO SOCIAL ASSISTANCE BY 2-4 %



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SUMMARY

- As expected, considering the OOPs increases the prevalence of poverty, also in Finland where the OOPs are on average level internationally
- The largest effect is on the poverty of elderly
  - Cross-sectional effect 2018: AROP (60) 11 -> 13,2 % (+20 000 ind.)
  - Policy change effect 2010-18: AROP (60) 13->13,2 % (+ 4000 ind.)
- However, elderly still in better position on average than others in terms of poverty gaps and reference budget poverty

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FUTURE PLANS

1. Including all out-of-pocket payments of social and health care (medicines, private health care)
2. Simulating the poverty and inequality effects with actual payments 2017 (not just legislation)
3. Incorporating the behavioral effects of the payments in distributional analysis (price elasticities)
4. Not only payments: Extending the analysis to distributional effects of social and health care (e.g. GINIs with service subventions)

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3) 사회보장 급여를 대상으로 한 조세를 반영한 변화 예측 및 산출방식 관련 연구

○ 가구 또는 개인의 경제적 수준을 측정하는 기준에 따른 빈곤통계 변화

– 일반적으로 빈곤율 분석 시 개별 가구의 경제적 후생을 측정하는 기준으로 소득을 사용하나, 노인 빈곤율 문제로 인한 우리나라의 특수성을 고려하여 자산을 반영하거나, 소득과 함께 지출을 반영한 빈곤통계 산출에 대한 정책 수요가 증가함

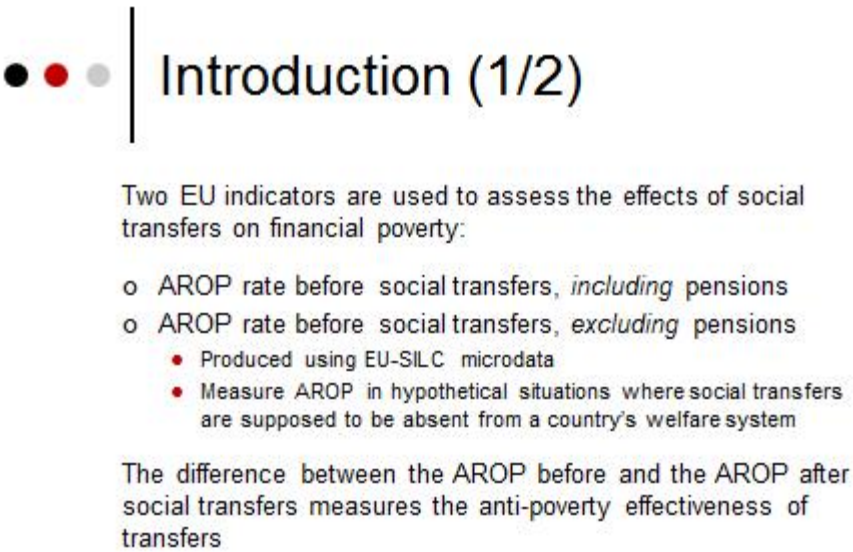
– 특히, 빈곤 분석에 있어 소득 개념과 이에 포함된 소득 유형은 빈곤율 수준 변화에 영향을 미치기 때문에 중요하며, 이를 통해 정책 효과성을 분석함

– 대부분의 연구는 Mitchell(1991)이 분류한 정부지출에 의한 사회보장 이전과 조세 이전에 의한 소득이전 유형과 단계에 따라 시장소득(market income, MI), 총 소득 또는 경상소득(gross income, GI), 가처분 소득(disposable income, DI) 3가지 개념으로 정의하여 이를 기준으로 빈곤율을 단계적으로 산출함

- 시장소득 = 근로사업소득 + 재산소득 + 사적이전소득
- 경상소득 = 시장소득 + 공적이전소득
- 가처분소득 = 경상소득 - 조세 - 사회보험료

○ 여기서는 EU-SILC 데이터를 활용하여 사회보장 급여에 대한 과세 항목의 변수를 반영함에 따른 빈곤감소 등 정책효과와 국가 간 비교 결과의 변화를 분석한 연구 자료를 소개하며, 이는 아동수당 도입 확대 과정에서 대안으로 논의된 바 있는 보편적 급여 & 과세 반영 방식과 유사하게 향후 보편적인 소득보장제도 확대에 따른 과세 항목 반영 등 새로운 정책 변화를 고려한 빈곤통계 산출 시 벤치마킹 가능함

– Chrysa Leventi, Andrea Papini and Holly Sutherland, “Assessing the Anti-Poverty Effects of Social Transfers: Net or Gross?, And does it really matter?”



Introduction (2/2)

- The effectiveness of social transfers to reduce the risk of income poverty varies widely among the EU-28:
  - In SILC 2015 the difference between the AROP before and after social transfers (excluding pensions) varied from a max of 20 ppts to a min of 3.9 ppts
  - Average (unweighted) at the EU-28 level was about 9 ppts (Eurostat, 2018)
- During the period 2010 to 2015, on average:
  - Before-transfers AROP rate remained stable
  - Post-transfer AROP experienced a rise

State of play (1/3)

- Limitations of current indicators
  - Assessment based on gross transfers
    - The anti-poverty effectiveness of social transfers should be assessed based on transfers *received* not on transfers paid, i.e. net of taxes & social insurance contributions (SIC)
  - No distinctions between types of transfers
    - Their effects may not be uniform
  - No assessment of private pensions
    - Some countries rely more on compulsory private pension schemes which in EU-SILC are classified as part of original income

State of play (2/3)

- Limitations of net-gross conversion procedures in EU-SILC
  (source: *Net-SILC3 Survey on Weighting and Imputation*, replies from 21 NSIs)

  - Incomes are recorded in various ways
    - Both net and gross: 10 countries
    - Only net: 5 countries
    - Only gross: 4 countries
    - Depends on the income component: 2 countries

  - The methods used for net-gross conversion by NSIs vary widely
    - No method: 5 countries
    - Empirical factors: 8 countries
    - Country-specific models: 7 countries
    - Siena microsimulation model: 2 countries

State of play (3/3)

- Limitations of net-gross conversion procedures in EU-SILC
  (cont'd)

  - Different methods can lead to different outcomes

  - No net income components available for DK, MT, NL, NO, SK, UK (SILC 2015)

  - In several countries net values = gross values
    - Are these income components not subject to tax/SIC or was the tax/SIC deduction omitted in the imputation procedure?

Aims of the study

We explore the following issues:

1. The treatment of taxes and SIC paid on transfers
   - If transfers are taxable, the contribution of net transfers to poverty reduction may be smaller than if they are considered in gross terms
2. The role of different types of transfers in poverty reduction
   - Means-tested versus non-means-tested benefits
   - Impact of policy interdependencies when constructing hypothetical scenarios where some transfers are set to zero
3. The definition of pensions and their treatment as original income or as transfers
   - Treating private pensions in the same way as public pensions

Methodology (1/3)

- We use EUROMOD, the tax-benefit microsimulation model for the EU-28
- Based on household microdata (EU-SILC; FRS for UK)
- Computes the effects of actual or hypothetical policy changes on the distribution of target variables:
  - At-risk-of-poverty and income inequality
  - (Net) budgetary cost of policy changes
  - Indicators of work incentives
- Suitable candidate for the gross-to-net imputation of transfers:
  - Ensures cross-country comparability
  - Transparent process

Methodology (2/3)

- **Baseline scenario**: simulations for 2015 using EUROMOD
  - Standard AROP rates obtained for all countries (*AROP_0*)
- **Six hypothetical scenarios**: each considering different types of social transfers. For each scenario i:
  1. We use Eurostat's methodology to construct the AROP before gross social transfers, *AROP_i*
  2. *AROP_i – AROP_0*: contribution of *gross social transfers* to poverty reduction
  3. We use EUROMOD to construct the AROP before net social transfers, *AROP_ ip*
     - Social transfers are set to zero in the model and then simulations are carried out, producing new values for taxes and SIC
  4. *AROP_ip – AROP_0*: contribution of *net social transfers* to poverty reduction

Methodology (3/3)

Scenarios	Social transfers set to zero (in gross & net terms)	AROP
Baseline	none	AROP_0
1	public pensions, means-tested benefits & non-means-tested benefits	AROP_1 AROP_1p
2	public pensions	AROP_2 AROP_2p
3	public pensions & private pensions	AROP_3 AROP_3p
4	means-tested benefits & non-means-tested benefits	AROP_4 AROP_4p
5	means-tested benefits	AROP_5 AROP_5p
6	non-means-tested benefits	AROP_6 AROP_6p

Notes: AROP_I: social transfers considered in gross terms
AROP_Ip: social transfers considered in net terms

Scenario 1: all social transfers set to zero (1/2)

- Gross *(net)* transfers are estimated to reduce the AROP rate by 28.1 *(26.6)* percentage points on average

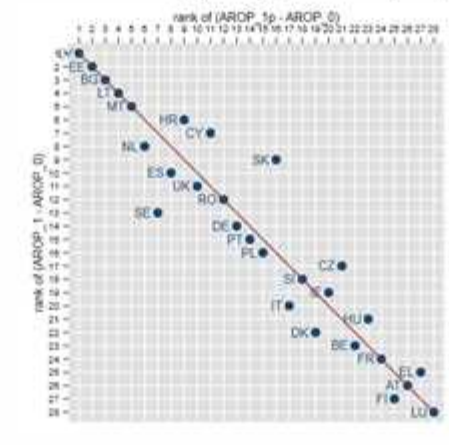
Difference between AROP_1 and AROP_1p (2015)

AROP_1: AROP before gross social transfers

AROP_1p: AROP before net social transfers

Scenario 1: all social transfers set to zero (2/2)

Country ranking by contribution of gross and net social transfers to monetary poverty reduction (2015)

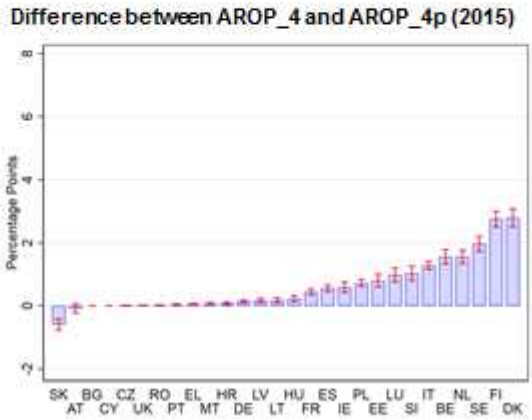


Scenario 4: non-pension benefits set to zero

- Gross *(net)* benefits are estimated to reduce the AROP rate by 10.8 *(10.2)* percentage points on average

AROP_4: *AROP before gross benefits*

AROP_4p: *AROP before net benefits*



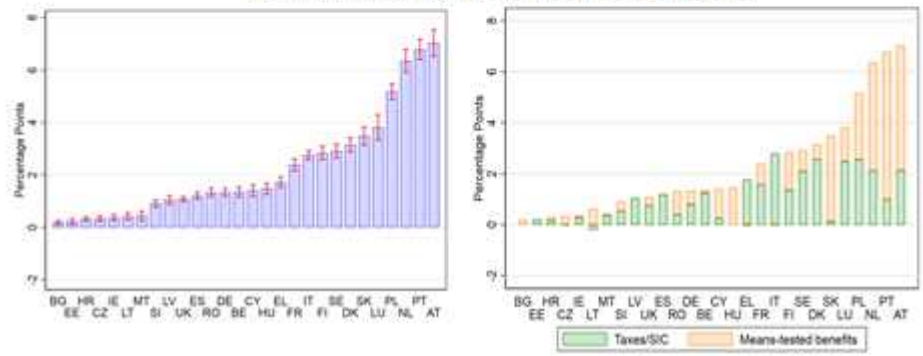
Policy interdependencies

- A usual assumption when constructing hypothetical scenarios where some social transfers are set to zero is that the loss of a transfer would not be compensated by other kinds of transfers
- In practice, this is usually *not* the case
- Means-tested benefits may partly/fully compensate for the loss of:
  - Public old age and survivors' pensions ***(Scenario 2)***
  - Non-means-tested benefits ***(Scenario 6)***

Scenario 2: public pensions set to zero

- Gross public pensions reduce the AROP rate by 18.3 ppts
- Net public pensions combined with increased means-tested benefits reduce the AROP by 16.1 ppts
- Net public pensions alone reduce the AROP by 17.3 ppts

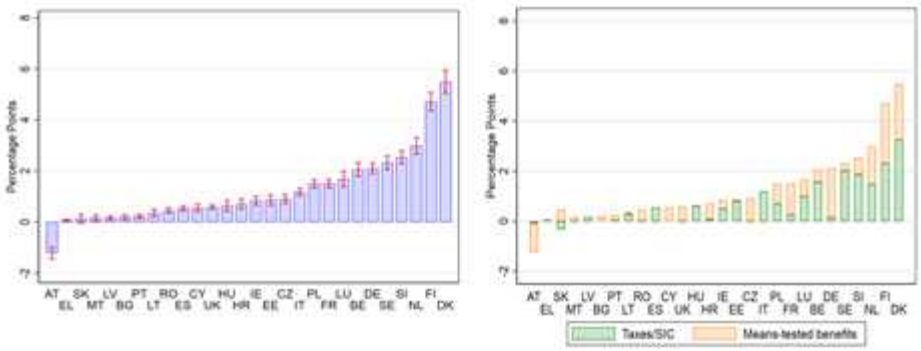
Difference between AROP_2 and AROP_2p (2015)



Scenario 6: non-means-tested benefits set to zero

- Gross non-means-tested benefits reduce the AROP rate by 7.4 ppts on average and net non-means-tested benefits together with policy interactions (*alone*) by 6.2 (*6.7*) ppts

Difference between AROP_6 and AROP_6p (2015)



Conclusions (1/2)

- The treatment of taxes and SIC has an important impact on the indicators used to assess the anti-poverty efficiency of transfers
  - Biggest differences overall due to taxation of public pensions
  - Differences due to taxation of non-pension benefits are generally small except in the Nordic EU counties (DK, FI, SE)
- The anti-poverty impact of non-means-tested benefits seems to be explaining most of the total impact of benefits on monetary poverty reduction

Conclusions (2/2)

- The ranking of countries by the anti-poverty effectiveness of their transfer systems depends on whether transfers are measured gross or net
- Even small discrepancies in the assumptions used by NSIs to construct the relevant EU indicators might have an important impact on the estimated country rankings
  - These rankings are routinely used for policy recommendations
- The use of microsimulation can significantly improve the transparency and comparability of these indicators