The impact of a European unemployment benefit scheme on labour supply and income distribution

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Preliminary results

Motivation

- The project of a common European unemployment insurance for Eurozone countries: provide a stabilisation tool for the EMU
  - The current COVID-19 crisis and the SURE plan (EU-Commission, 2020) putted back this project at the heart of the debate
- Different proposals of this scheme has been extensively studied.
  - Dolls et al.(2018): strong stabilising power particularly during 2007-2009 for the most affected countries. Up to 10% of shocks between 2000-2010 would have been absorbed.
  - Jara et al. (2016): EMU-UI would protect individuals income and redure the risk of poverty for unemployed.
- EMU-UI $=>$ implies common minimum standards and change generosity of UB this could have behavioural implications in terms of labour supply.

Research questions

- Beyond the income smoothing role of the EMU-UI, what would be the impact on labour market?
- The aim of this paper is to estimate not only the distributional and inequality impact of the reform proposal, but also its potential labour supply implications.

Contributions:

- We estimate a structural labour supply model separately for the 19 EMU countries
  - We compute labour supply elasticities and compare them between countries by gender and marital status
- We simulate the effects of the introduction of 4 scenarios of EMU-UI
  - We compare the redistributional and behavioural effects of the reform between countries

EMU-UI proposal

A genuine unemployment benefit scheme (European Commission (2013;2017); Andor (2014) ; Dullien (2013)): direct transfers to individuals, common level, topped-up by national systems.

- It would partially replace national systems and imply common eligibility rules and benefit levels.
- Recent studies show that the EMU-UI would perform as a good stabilisation tools (Dullien,2013, Dolls et al. 2018, Beblavy et al. 2014 among others) and would substantially increase UI generosity in several countries (Jara et al. 2016)

UI benefits can theoretically affect labour supply through many dimensions (affect probability of unemployment, probability to claim for benefits, intensity of job search, affect spouses work responses)

  - Extension of UB duration leads to increase of unemployment duration about (Lalive 2008; Tsatsiramos and Van Ours, 2012)
  - Cullen and Gruber (2000): higher UB for husband is associated with less work by wifes

A structural labour supply model

We estimate a structural discrete choice model (Van Soest 1995; Blundell et al. 2000; Bargain et al. 2014)

- Individual labour supply decision with a set of alternatives
  - 4 alternatives: Non-participation (0); Part-time (1-29); Full-time(30-49); Over-time(50+)
- Utility maximising choice (in absolute value), with utility for couple:

$$U_{ij} = V_{ij}(C_{ij}, H_{ij}^m, H_{ij,}^f z_i) + \epsilon_{ij}$$

- Quadratic utility function following Blundell et al. (2000):

$$\begin{aligned} V_{ij} =& \beta_{ci} C_{ij} + \beta_{cc} C_{ij}^2 + \beta_{h_f i} H_{ij}^f + \beta_{h_m i} H_{ij}^m + \beta_{h_{ff}} (H_{ij}^f)^2 + \beta_{h_{mm}} (H_{ij}^m)^2 + \beta_{ch_f} C_{ij} H_{ij}^f \\ &+ \beta_{ch_m} C_{ij} H_{ij}^m + \beta_{h_m h_f} H_{ij}^f H_{ij}^m - \alpha_j^f * 1(H_{ij}^f > 0) - \alpha_j^m * 1(H_{ij}^m > 0) \end{aligned}$$

Model specification

- We assume that preferences vary across households through taste-shifters on coefficients on consumption and work hours:
  - Preferences vary over polynomial form of age, number of children, presence of young children and presence of elderly
  - Unobserved heterogeneity: consumption preferences depends also on a random term
- For C_{ij} we consider the disposable income: depends on hourly wage rates and individual characteristics $=>$ using EUROMOD
- We need to predict wages for non-workers:
  - We estimate a Heckman-corrected wage equation (selection procedure): allows to take into account differences between workers and non-workers (to avoid selection bias)
  - We use predicted wages for both non-workers and workers (Borjas, 1990)

Descriptive statistics

- We use the 2016 data for 19 EMU countries for which we select subgroups: single women, single men and couples, on working age (16-64 y/o), available for labour market.
- Sample size: Single men(from 493 to 3072), Single women(700-3233), Couples(797-3763)
- Considerable variation of working hours between countries for women in couple (only around 20-23 h/w for MT, IE, EL, IT and NL up to 30+ for EE, FI, FR, LT, LV and SI) -> Huge disparities in participation rates
- Lower participation rates for single women in comparison to single men -> high share of single mothers (IE, BE, EL)
- High wage rates in FR, AT, NL, FI, LU, BE

Labour supply estimates

- Signs of coefficients are broadly in line with previous findings Table
  - Presence of children or elderly reduces the probability to work for women
  - Propensity to work decrease with age
  - Fixed costs of work is significantly negative of all subgroups
  - Rather good fit: pseudo-R^2 is about 0.35 on average for single women and men and 0.4 for couples
  - Discrepancy between observed and predicted data is less than 3% in a majority of countries. For couple, discrepancy is around 1% in multiple countries. Graph
- Wage elasticities Graph:
  - In line with previous findings: We find large wage elasticities for women in couple. Elasticities for men both in couple and single are more concentrated in comparison to women.

Simulation scenarios

An illustrative EMU-UI:

- Eligibility conditions
  - Contributed at least 3 months in the previous 12 months
  - All employees younger than 64 years old
- Duration
  - From the 1st month until the 12th month (cyclical unemployment)
- Level
  - Scenario 1: Replacement rate at 50% of previous earnings
  - Scenario 2: RR at 50% of previous earnings with floor and ceiling at 50% of national average earnings
  - Scenario 3: Flat-rate amount at 50% of national average earnings
- This EMU-UI policy can be topped-up by national UI systems
  - Scenario 4: in which EMU-UI fully replace national UI systems

Using EUROMOD I1.0+:

- Underlying data are EUROMOD data for year 2016 (based on EU-SILC)
- We focus on the policy year: 2018

Effect of the EMU-UI on labour supply

Scenario 1:

- Labour supply responses to the reform differs substantially across countries Graph
- Decrease of FTE around -0.25% in many countries
  - Single women: BE, CY, IT, MT, PT: drop in FTE >1.5%
  - Strong disincentive effect for single men also in BE, IT, MT and PT
  - Weak labour supply reactions for couples

Scenario 2 (with floor and ceiling):

- More countries are affected but the order of magnitude remains the same
- Highest disincentive to work of the reform: BE, PT and LT
  - Single men: ES -2.58%; LT -1.9% in FTE
  - Same magnitude b/w scenario 1 and 2 on average for single women
  - Disincentive effects in more countries for couple (NT, LU, LT, EE) but the effect remains weak

Effect of the EMU-UI on labour supply

Scenario 3(flat-rate benefits): Graph

- Strong decrease in labour supply in many countries
- Around 0.5-1.5% decrease in FTE in: BE, LT, LV, MT, NL, PT
  - Single individuals: Strong decrease in FTE in comparison to scenario 1 in many countries (around 1.20-2.04 for single men and up to 3% in LT, ES for single women)
  - Affects the labour supply for women in couple quite much (IT, LV, EL, EE and ES mainly)

Scenario 4(EMU-UI replace national UI):

- Increase in FTE in multiple countries (EE, FI, IE, IT, LT, NL) due to the loss in generosity of UB
  - EMU-UI remains more generous and still decrease incentives to work in BE, ES, LV, MT and PT.
  - Strong incentive to work for single women and men in FI.
  - No behavioural reactions in AT, CY and SK

A basic EMU-UI (sc.1): low labour supply reactions and w/ floor and ceilings (sc.2) reactions are broadly in the same magnitude
An EMU-UI with flat-rates benefits (sc.3) seems to generate distortions in the labour market.

Effect of the EMU-UI on income distribution and poverty

- Beyond behavioural responses, we focus on inequality and poverty implication
  - Gini coefficient
  - Generalized Entropy Index GE(2)
  - Poverty rates at 60% of median income threshold
- Descriptive statistics on income distribution (baseline) Gini
  - Single women more affected by poverty
  - ES, MT, IT, EL: highest poverty rates
  - Gini index tends to be higher for single women especially (EL, IT, MT, EL)

Effect of the EMU-UI on income distribution and poverty

- Reform with the highest drop in poverty and Gini: scenario 3
  - Variation rates Gini: -2.67% for single women; -6.05 for single men; -3% for couple
  - Poverty rates decrease under scenario 3 (around -1p.p. IT, LT, ES, BE for single)
  - Couple: highest decrease in poverty in BE, IT, MT, SI (around 0.5-1 decrease in poverty rate in p.p.)
- Strong redistribution effect of scenario 2 in comparison to scenario 1
  - Reduction of poverty => higher in sc.2 for single (around -0.7p.p. sc1 and -2p.p. sc2)
  - Higher reduction in Gini and GE(2) under scenario 2 for both subgroups
  - Single women tends to be the most affected by the reforms in terms of inequalities

The implications of scenario 1 in terms of fighting poverty tends to be very limited (decrease around 0.5% on average for EMU countries) -> stronger redistributional impact of scenario 2 and 3.

Discussion

- We provide insights on cross-country comparison of labour elasticities regarding wages and unemployment benefits -> limited work in comparison of 19 EMU countries
- We compared 3 different designs of EMU-UI and an alternative in which EMU-UI fully replace national systems.
  - We could expect from EMU-UI with flat-rate benefits (scenario 3) to reduce poverty and inequalities meanwhile inducing disincentive to work in almost all Eurozone countries. => We can expect labour market distortions effects from this scheme
  - Basic EMU-UI (scenario 1) do not have very strong labour supply effects (exception for BE and PT) but have more limited impact regarding income redistribution
  - EMU-UI with floor and ceilings levels (scenario 2) seems to be effective in terms of fighting poverty and inequalities in the Euro-zone while not inducing too strong negative labour supply reactions

Discussion

- If the objective of a European unemployment benefit system is also to improve living conditions of unemployed and improving UI protection role while limiting disincentives in the labour market => We would suggest scenario 2.
- A common basic EMU-UI that fully replace national systems would allow perfect harmonization of national systems but with no upward convergence effect. => This will have incentive effects on the labor market but with a deterioration of income redistribution.

THANK YOU FOR YOUR ATTENTION!

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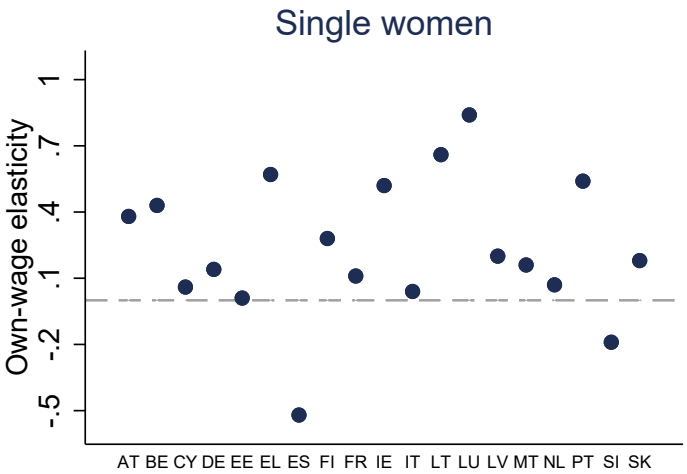
Single women
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-.2
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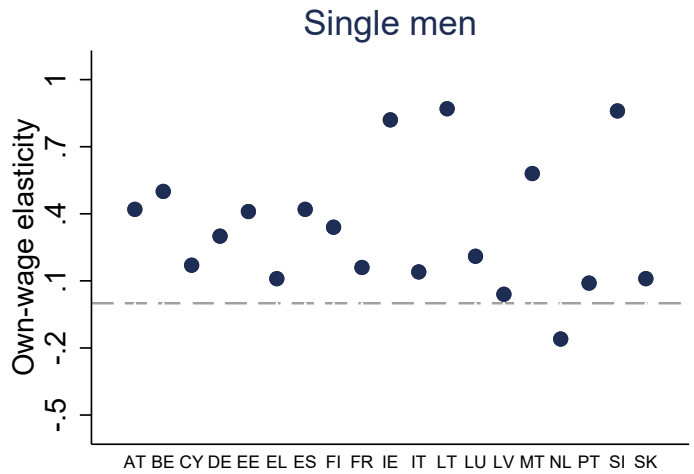
AT BE CY DE EE EL ES FI FR IE IT LT LU LV MT NL PT SI SK


Single men
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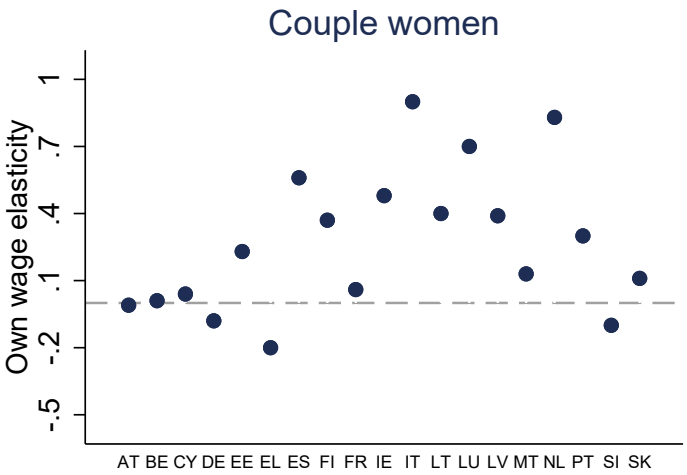
Couple women
Own wage elasticity
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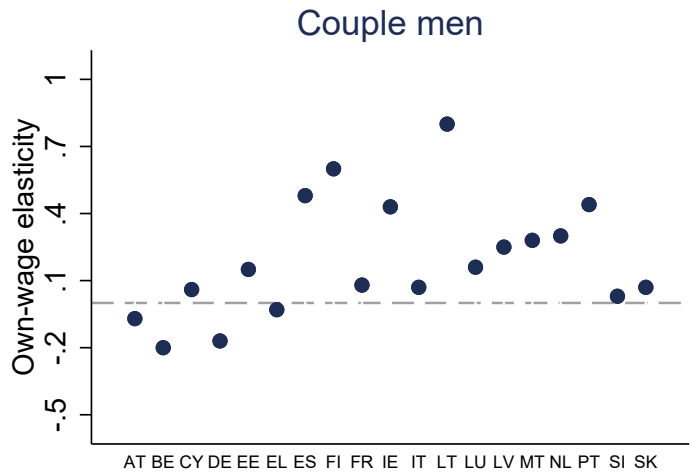
Couple men
Own-wage elasticity
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AT BE CY DE EE EL ES FI FR IE IT LT LU LV MT NL PT SI SK

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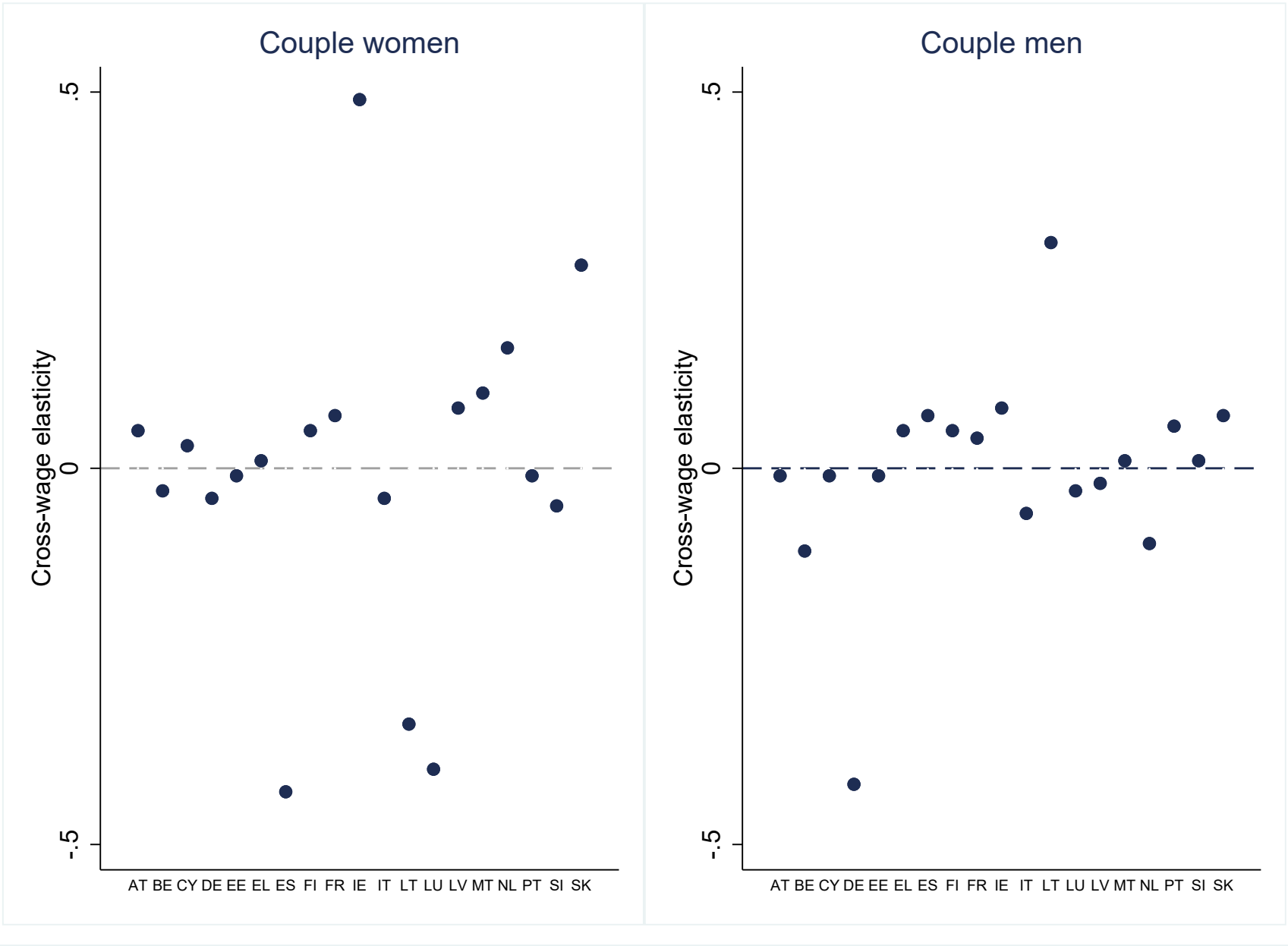
Couple women
Cross-wage elasticity
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0
-.5
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Couple men
Cross-wage elasticity
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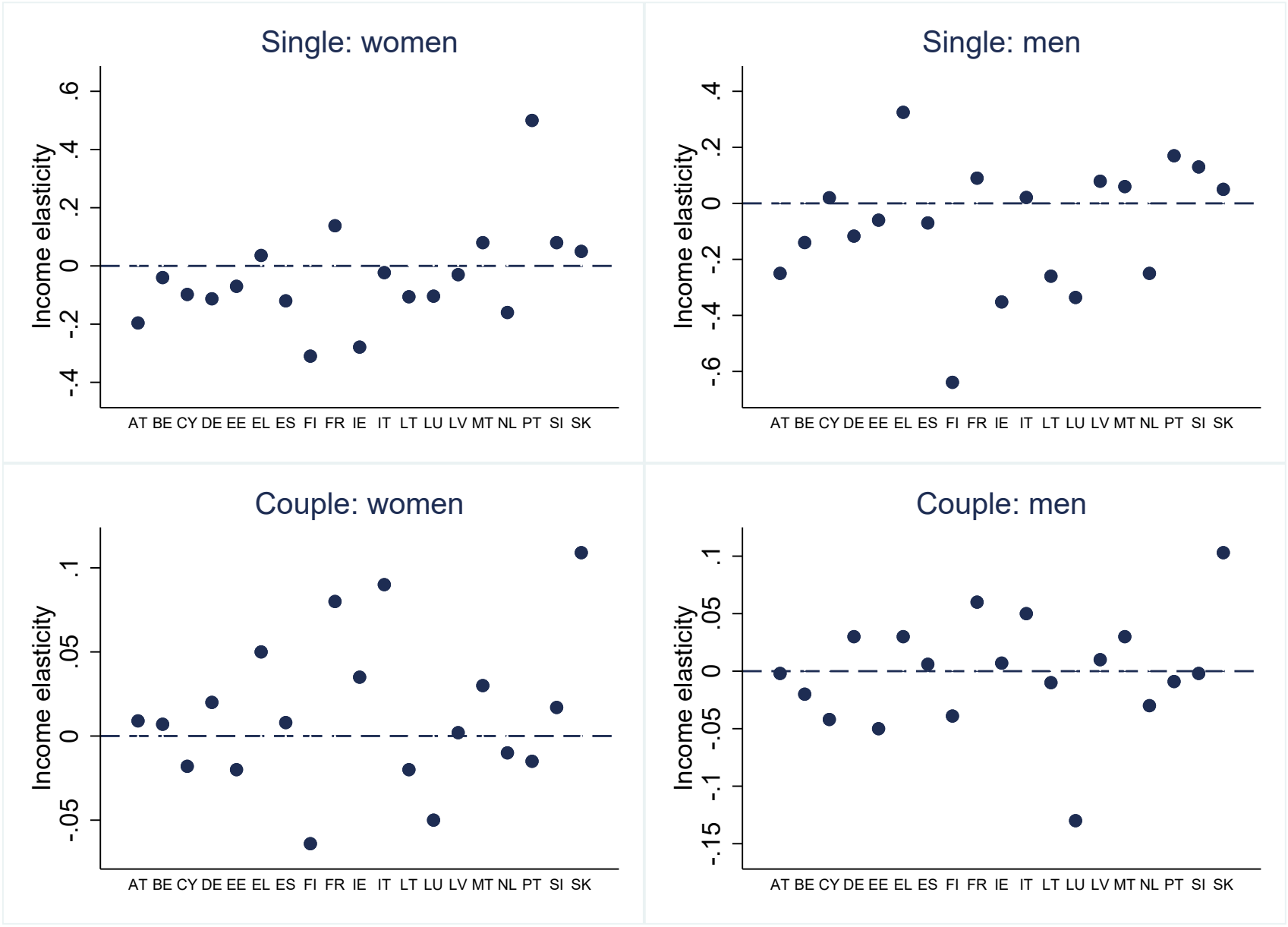
-.5
AT BE CY DE EE EL ES FI FR IE IT LT LU LV MT NL PT SI SK


Single: women
Income elasticity
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-.2
0
.2
.4
.6
AT BE CY DE EE EL ES FI FR IE IT LT LU LV MT NL PT SI SK
Single: men
Income elasticity
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-.4
-.2
0
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.4
AT BE CY DE EE EL ES FI FR IE IT LT LU LV MT NL PT SI SK
Couple: women
Income elasticity
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0
.05
.1
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Couple: men
Income elasticity
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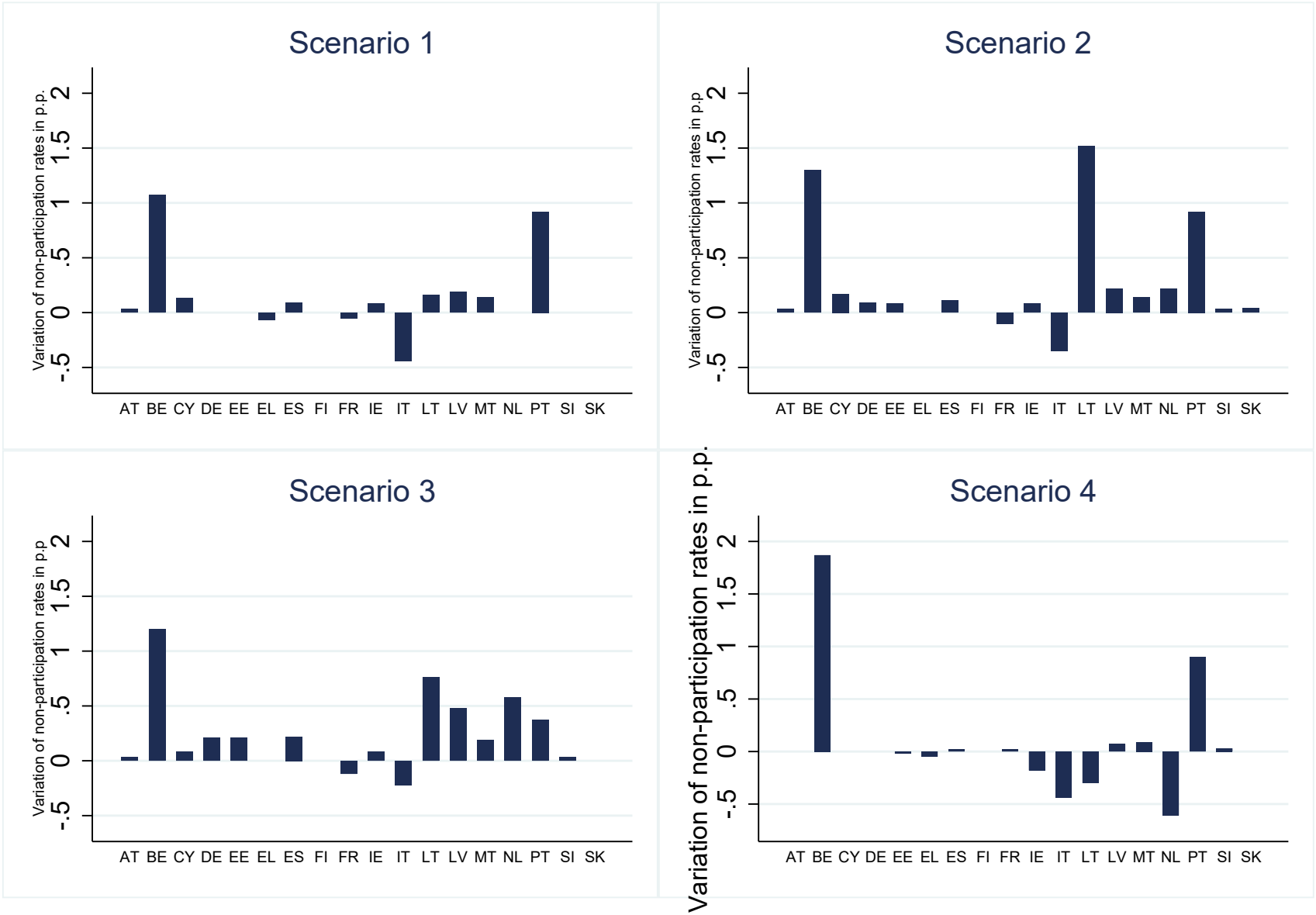
Effect on non-participation rates



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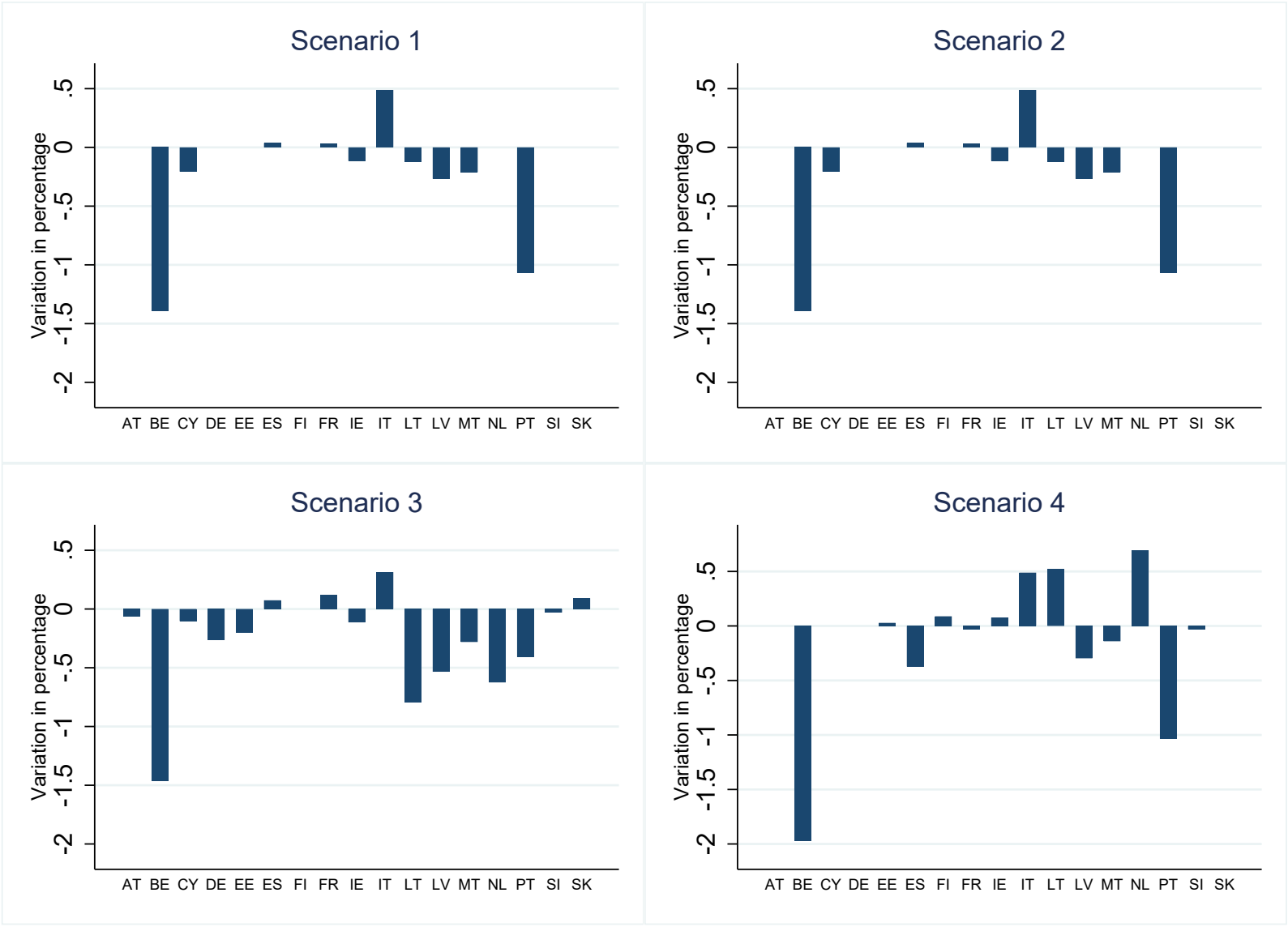
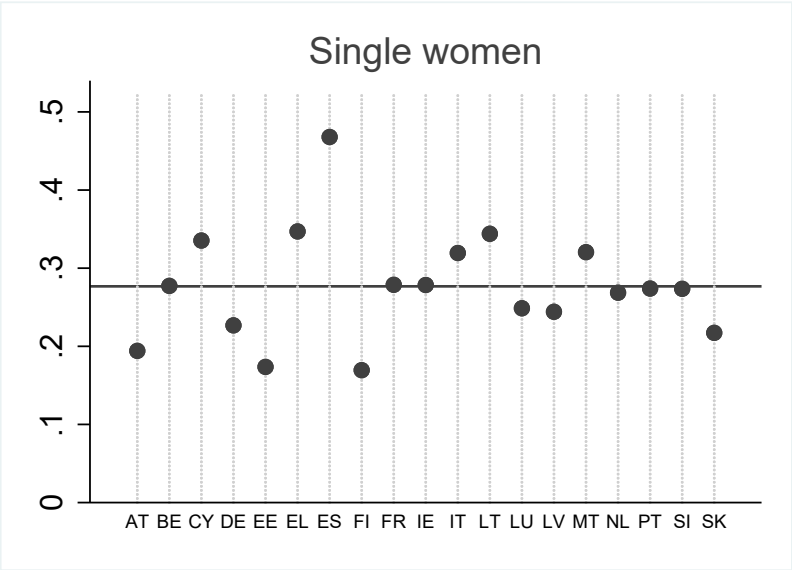
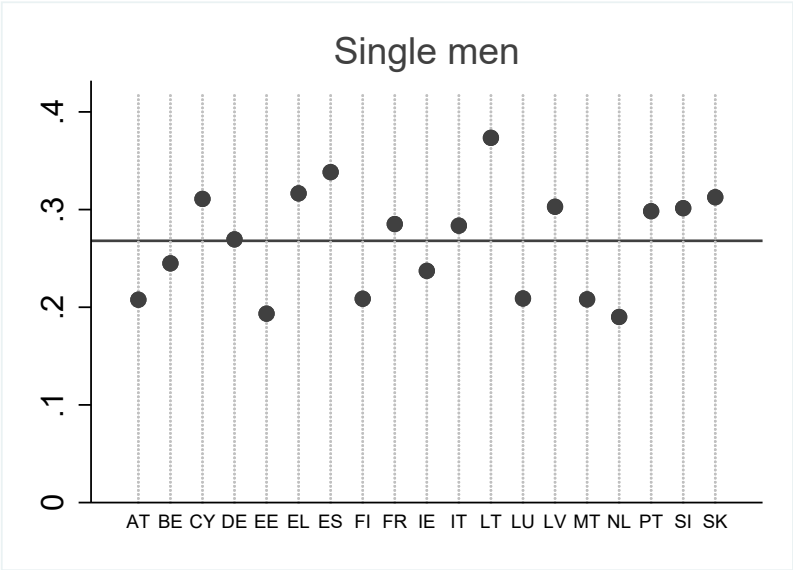
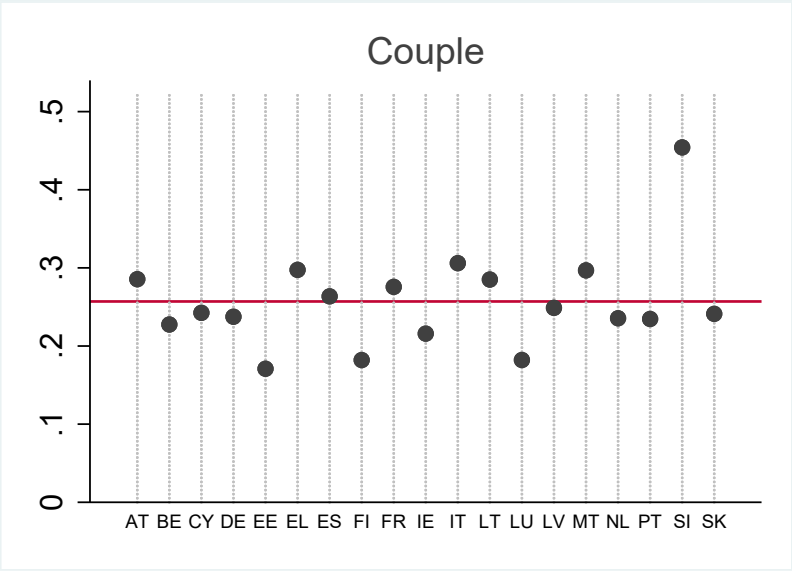
Effects of EMU-UI on mean hours of work in percentage



Gini coefficients by marital status







Poverty rates at 60% of median income by marital status