On the Design of a European Unemployment Insurance Mechanism

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European University Institute

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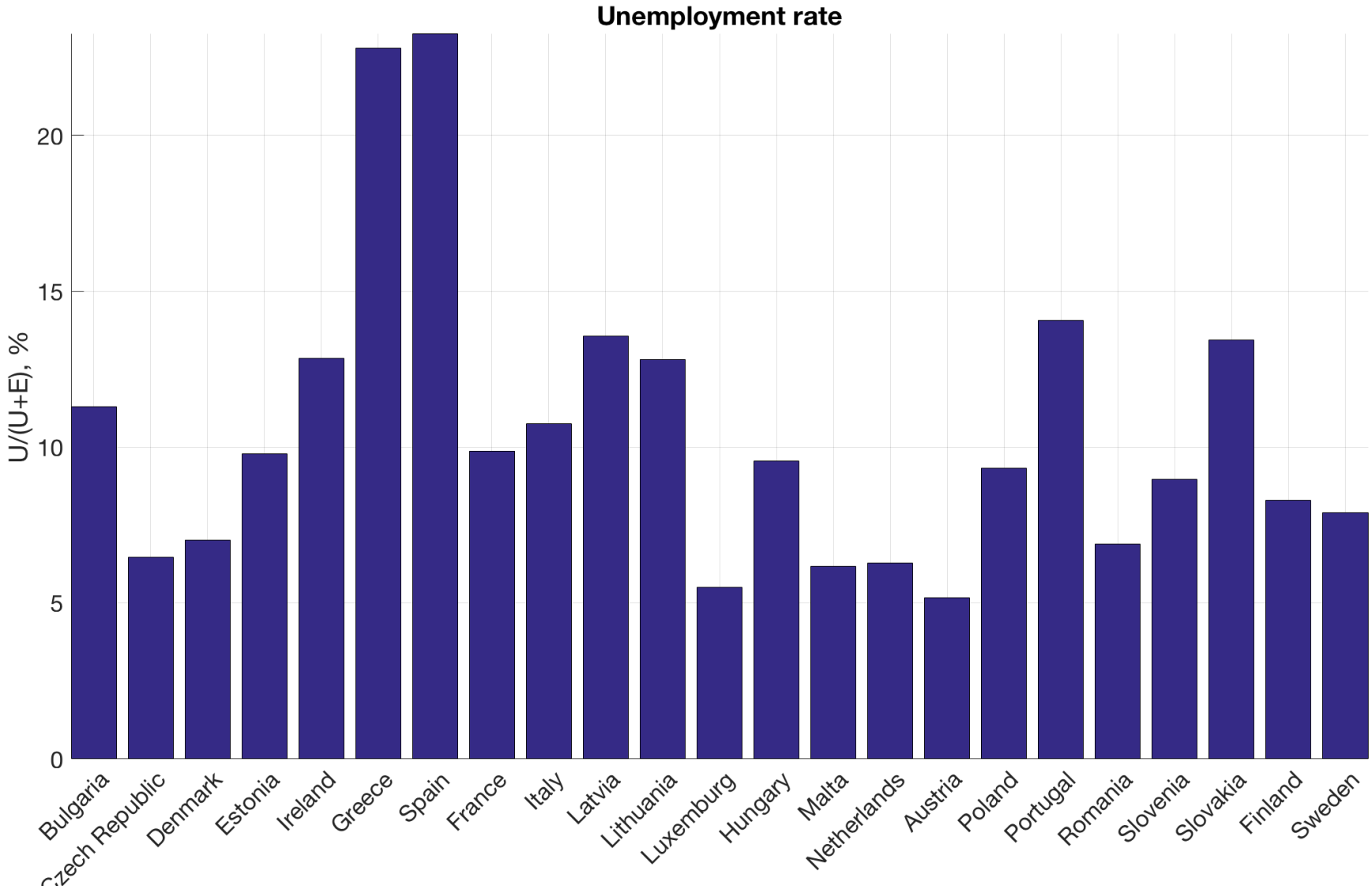
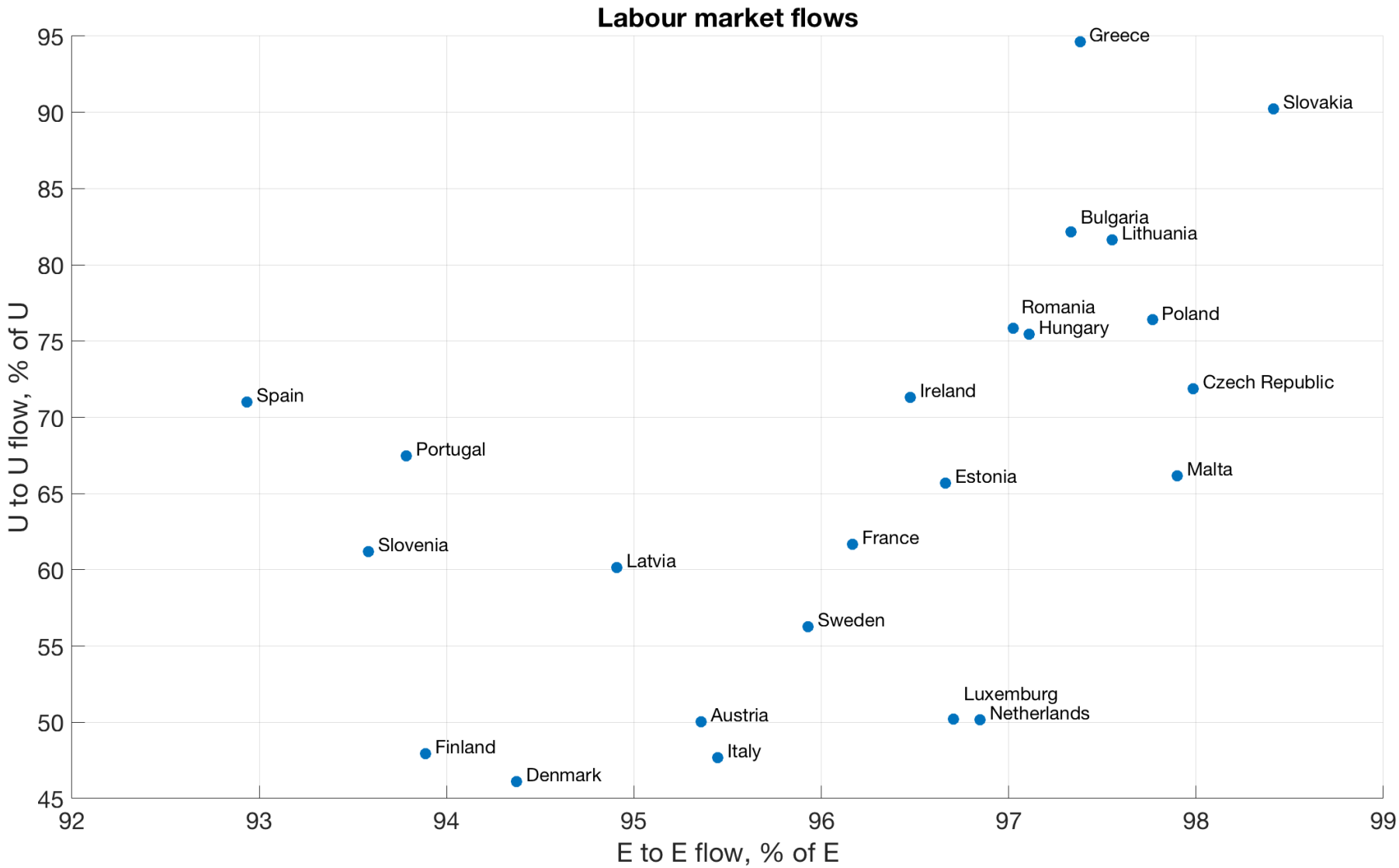
Unemployment Rate in Europe (2010q2-2015q4)



Persistence of Employment and Unemployment (2010q2-2015q4)



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First structural model of EU labour markets to evaluate EU-UI policy reform (see Dolls et al. (2015) and Beblacy and Maselli (2014)).

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- Long run differences between countries (LM institutions, UI systems, technology).
- Short run differences (similar economic fluctuations), in a parsimonious way.
- Calibration to EU countries.
- Map of labor market institutions across Europe.

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Analyse several policy reforms with different levels of integration:

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3: Homogeneous UI system in Europe (average of national benefit scheme);

4: Optimal national benefit schemes.

5: Optimal joint European UI (in progress).

Model: Main Elements

- Bewley economy:
  - Continuum of agents, live forever: idiosyncratic labour productivity risk, save in a riskless asset with (exogenous) return r.

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- Closed competitive labour markets, subject to frictions: job separations, job findings.
- Agents optimize whether to work or actively search for a job: Employed, Unemployed or Inactive.

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  - may reject offers.
  - if eligible, receive UI benefits. Lose eligibility with probability μ.

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- Inactive Do not actively search
  - receive job offers at a lower rate: $\lambda_{\mathbf{n}}$
  - may reject offers
  - not eligible for UI benefits
- UI financed with proportional tax τ on labour income: replacement rate b_0 and average duration $1/\mu$, conditional on search; Balanced budget.

Calibration: Common Parameters

Parameter	Definition	Value
θ	Capital share of output	0.3
β	Discount factor	0.98
ρ_z	Persistence of productivity	0.89
σ_z	Standard deviation of prod. shock	0.1
r	Real Interest rate (quarterly)	0.2%
α	Disutility of labor	1.4
$\bar{\gamma}$	Mean disutility of search	0.7

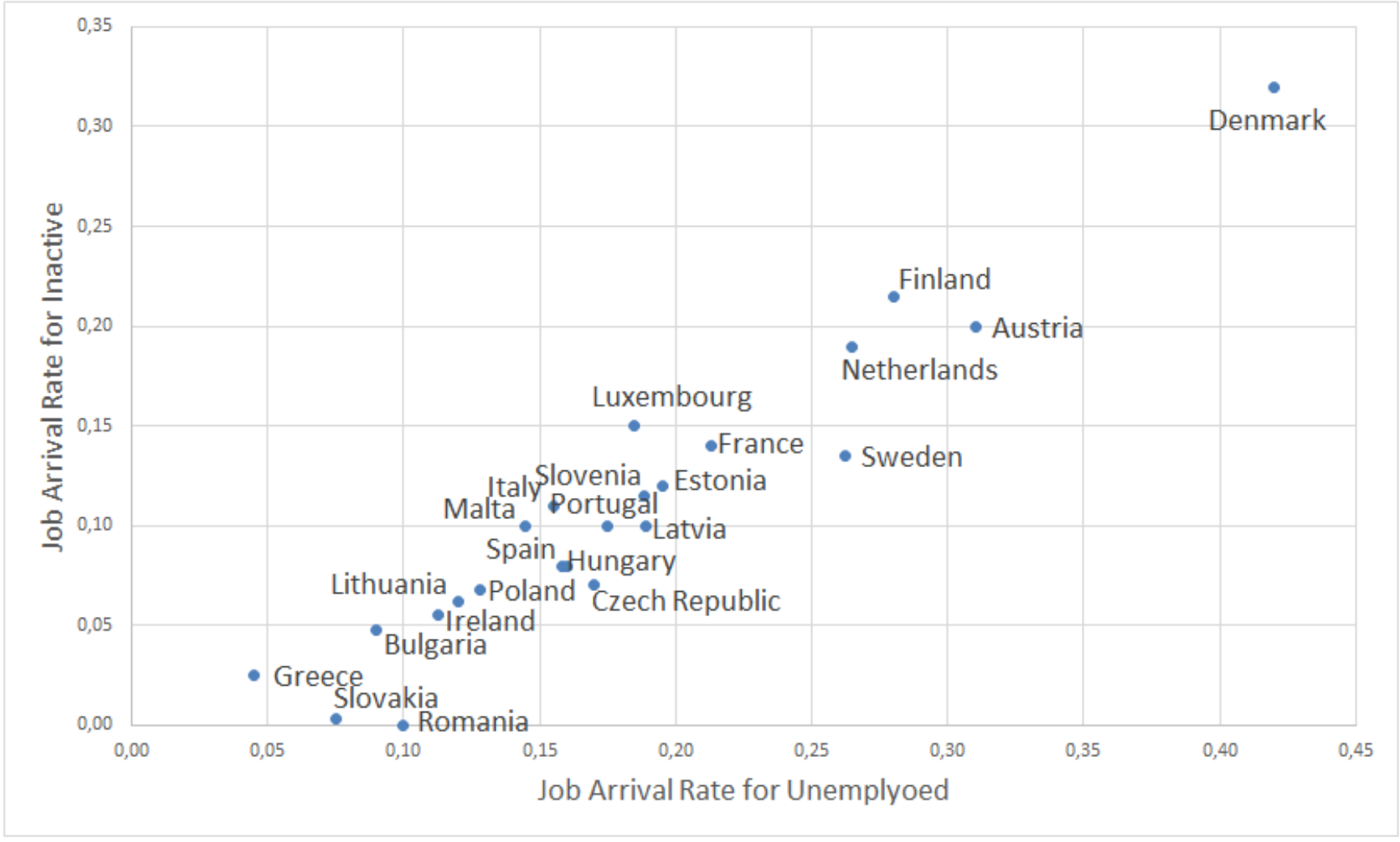
Calibration: Country-Specific Parameters

Parameter	Definition	Related Target
A	Total factor productivity	Average wage
σ_γ	St. deviation of γ	Flow $U-U$
σ	Job separation rate	Flow $E-U$
λ_u	Job arrival rate for searchers	Flow $U-E$
λ_n	Job arrival rate for inactive	Unemployment $U/(E+U)$
μ	Prob. of loosing UB eligibility	max duration
b_0	UB replacement rate	Benefits/GDP
τ	UI payroll tax rate	Budget clearing

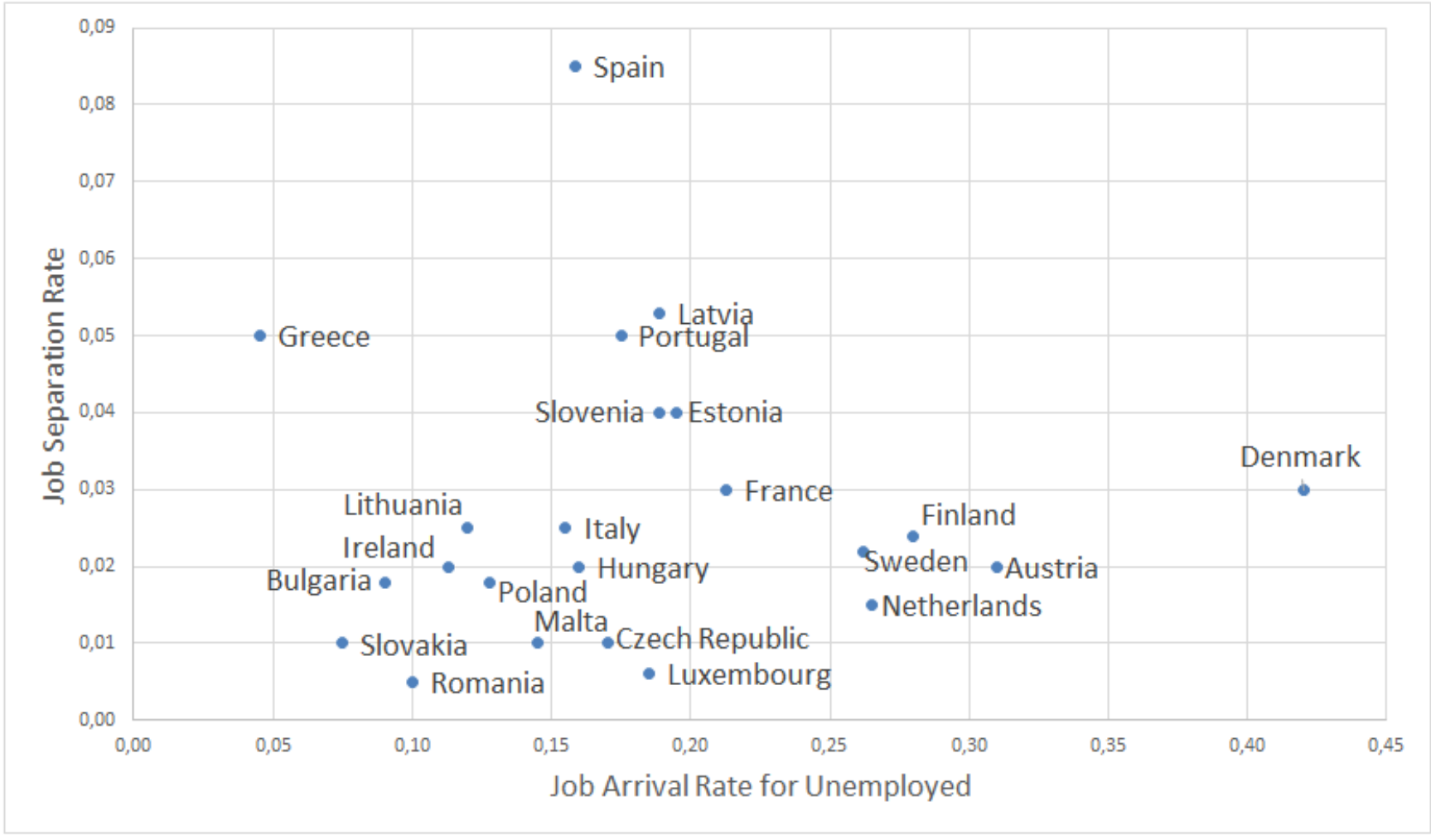
- The first panel of parameters is related to a country's labour market institutions
- The second panel refers to unemployment policies

▸ model fit

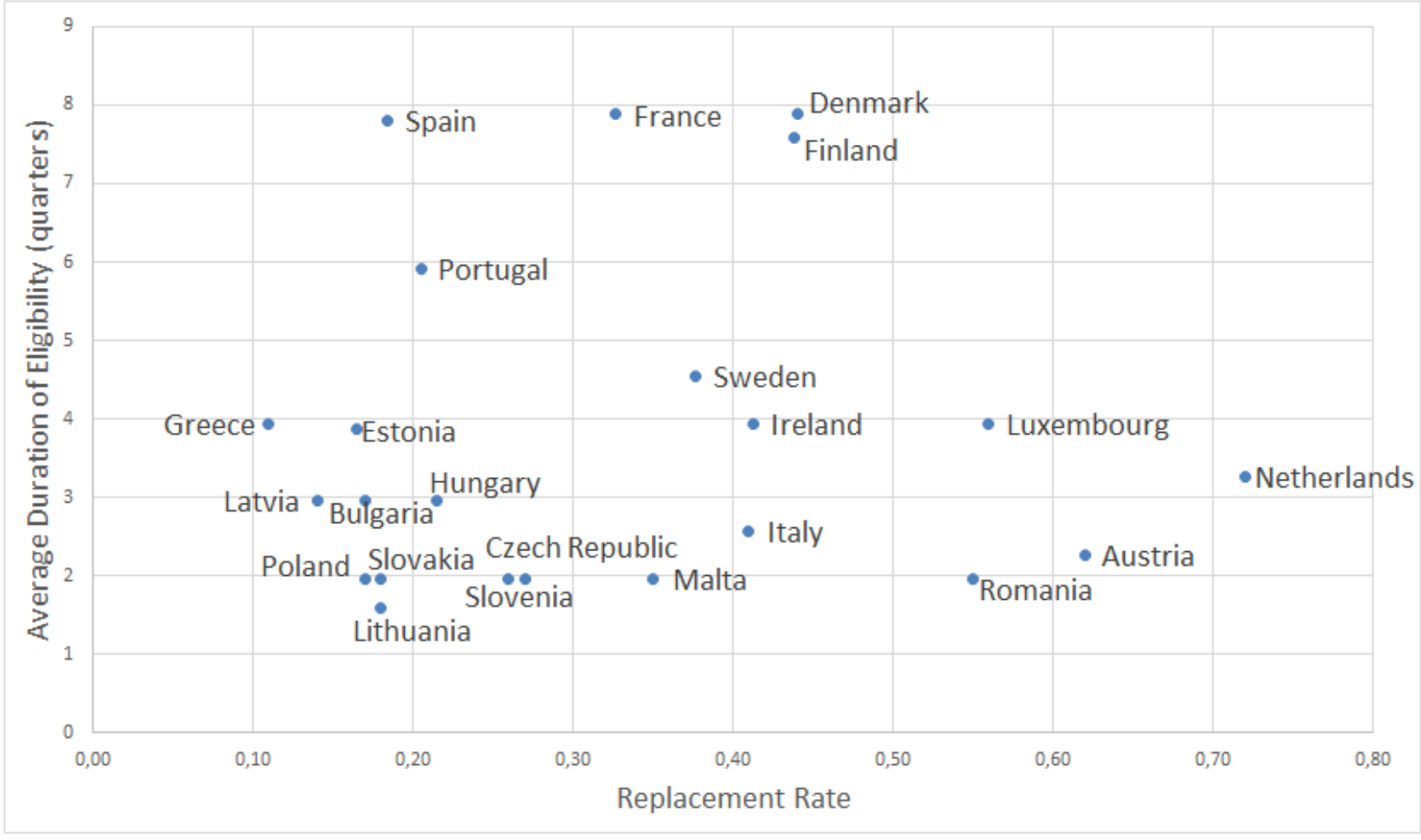
Job Arrival Rates



Labour Market Rigidity



Unemployment Policies



Policy Experiments

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- Autarky: taxes increase in recessions and decrease in expansions:
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- European UI System: eliminates the tax movements.
- Insurance is actuarially fair: government's intertemporal budget constraint is satisfied in expectation.

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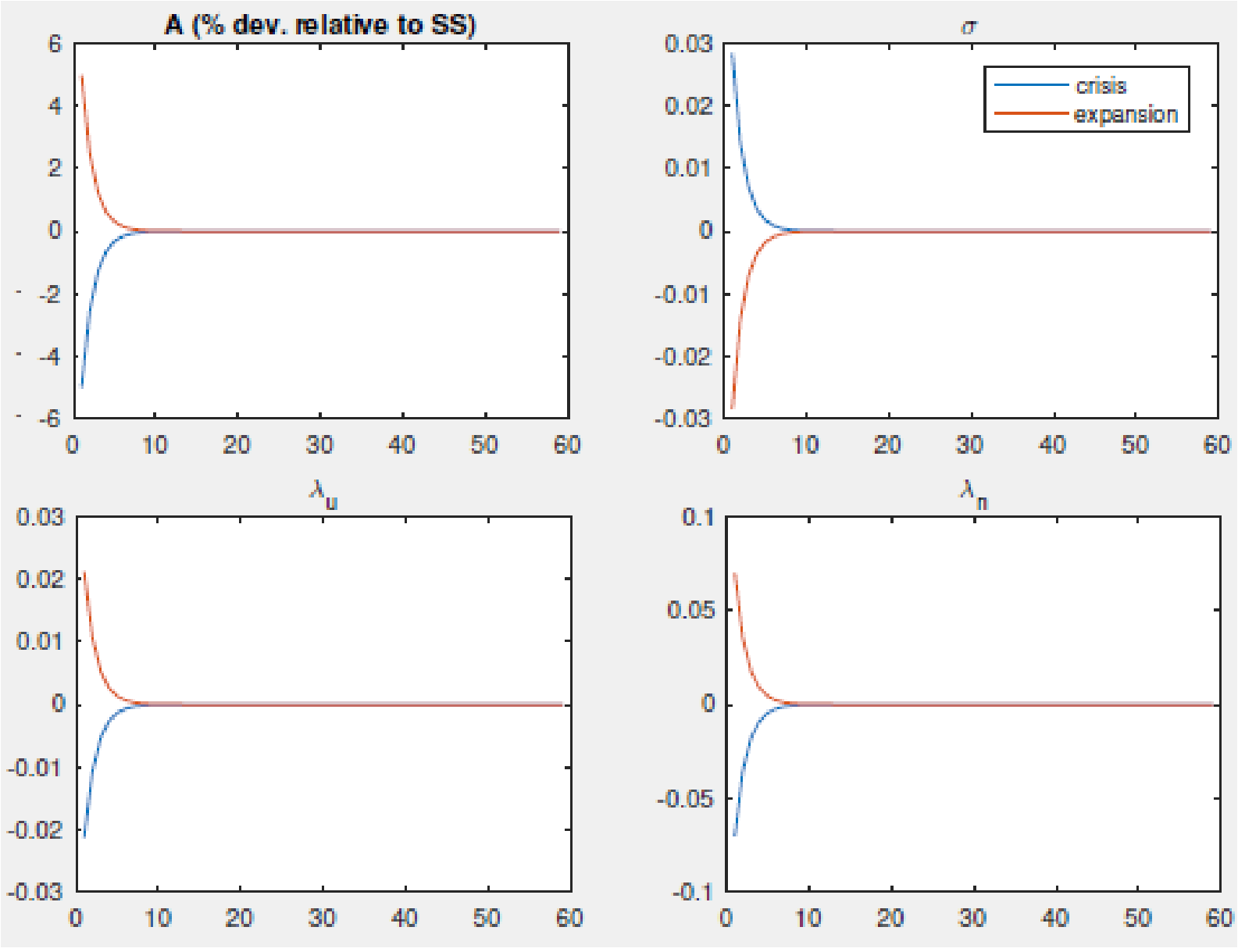
- Welfare measure: compare ex-ante expected utility of going through the crisis/expansion in Autarky vs. with a constant tax.

Experiment 1: Country Specific Shock



Policy Experiment 1: Welfare comparison

Experiment 1: National level UB policy, constant national tax during transition.

	Welfare gain**	Approval E*	Approval Ue*	Approval Une*	Approval I*	Approval Total*
Denmark	**0.003%**	89%	15%	16%	0%	66%
Spain	**0.003%**	91%	90%	100%	0%	64%
France	**0.001%**	89%	1%	26%	0%	67%
Italy	**0.002%**	97%	0%	17%	0%	70%
Netherlands	**0.001%**	84%	0%	0%	0%	67%
Poland	**0.001%**	97%	0%	7%	0%	72%
Portugal	**0.002%**	95%	51%	80%	0%	67%
Finland	**0.002%**	86%	0%	3%	0%	66%

** consumption equivalent, % of autarky consumption

* % population group/Total

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Netherlands	**0.001%**	84%	0%	0%	0%	67%
Poland	**0.001%**	97%	0%	7%	0%	72%
Portugal	**0.002%**	95%	51%	80%	0%	67%
Finland	**0.002%**	86%	0%	3%	0%	66%

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Experiment 1b:

- small probability $p = 0.1$ of going through a crisis and $1 - p$ of remaining at the steady state.
- welfare gains not higher than 0.005% for this set of countries.

Policy Experiment 3

- Introduce common UI policy: average b_0^U and duration d^U, financed jointly: τ^U.
  - Transfers from countries with low to countries with high eligible unemployed (post reform).
  - The common UI system also affects job acceptance and search decisions.
  - Transfers and welfare gains need not have the opposite sign.
- We calculate these steady state transfers and the welfare gains/losses from the joint scheme.

Policy Experiment 3: Welfare comparison

Experiment 3: Commom level UB policy, common tax (joint budget)

	E	U	I	τ (%)	b0	d
Denmark	68.5%	5.4%	26.2%	1.7%	0.44	7.9
Spain	51.3%	14.1%	34.5%	2.3%	0.18	7.8
France	68.8%	7.1%	24.1%	1.7%	0.33	7.9
Italy	66.4%	8.5%	25.1%	1.2%	0.41	2.6
Netherlands	74.5%	6.4%	19.1%	2.4%	0.72	3.3
Poland	69.1%	7.0%	23.9%	0.2%	0.17	2.0
Portugal	59.3%	8.7%	32.0%	1.2%	0.21	5.9
Finland	70.9%	7.3%	21.8%	1.7%	0.44	7.6

	E	U	I	τ U (%)	b0 U	d U	Transfer***	Welfare gain**
Denmark	67.7%	4.6%	27.7%	2.4%	0.36	5.6	1.0%	-1.6%
Spain	52.9%	17.7%	29.4%	2.4%	0.36	5.6	-3.1%	2.7%
France	68.2%	6.9%	24.9%	2.4%	0.36	5.6	0.5%	-0.3%
Italy	67.7%	9.2%	23.1%	2.4%	0.36	5.6	0.5%	-0.6%
Netherlands	73.3%	5.6%	21.2%	2.4%	0.36	5.6	1.2%	-2.1%
Poland	77.4%	9.1%	13.5%	2.4%	0.36	5.6	0.4%	0.8%
Portugal	61.4%	11.3%	27.4%	2.4%	0.36	5.6	-0.9%	0.6%
Finland	68.7%	7.0%	24.3%	2.4%	0.36	5.6	1.0%	-1.4%

*** % gdp

**consumption equivalent, % of autarky consumption.

Policy Experiment 4: Country Level Reform

- Calculate the optimal (b_0, μ) policy for each country.
- Compute implied welfare gains and the effects on labour markets.
- Characterize optimal policy as a function of labour market institutions.

Policy Experiment 4: Country Level Reform.

Experiment 4: UB policy reform, country level.

	τ (%)	τ' (%)	b0	b0	d	d	Welfare gain* (%)
Denmark	1.7%	**0.7%**	0.44	**0.35**	7.9	∞	**0.06%**
Spain	2.3%	**14.0%**	0.18	**0.30**	7.8	∞	**1.72%**
France	1.7%	**4.1%**	0.33	**0.35**	7.9	∞	**0.89%**
Italy	1.2%	**5.0%**	0.41	**0.35**	2.6	∞	**1.44%**
Netherlands	2.4%	**2.2%**	0.72	**0.40**	3.3	∞	**0.64%**
Poland	0.2%	**5.1%**	0.17	**0.40**	2.0	∞	**6.72%**
Portugal	1.2%	**7.0%**	0.21	**0.30**	5.9	∞	**1.56%**
Finland	1.7%	**2.1%**	0.44	**0.35**	7.6	∞	**0.56%**

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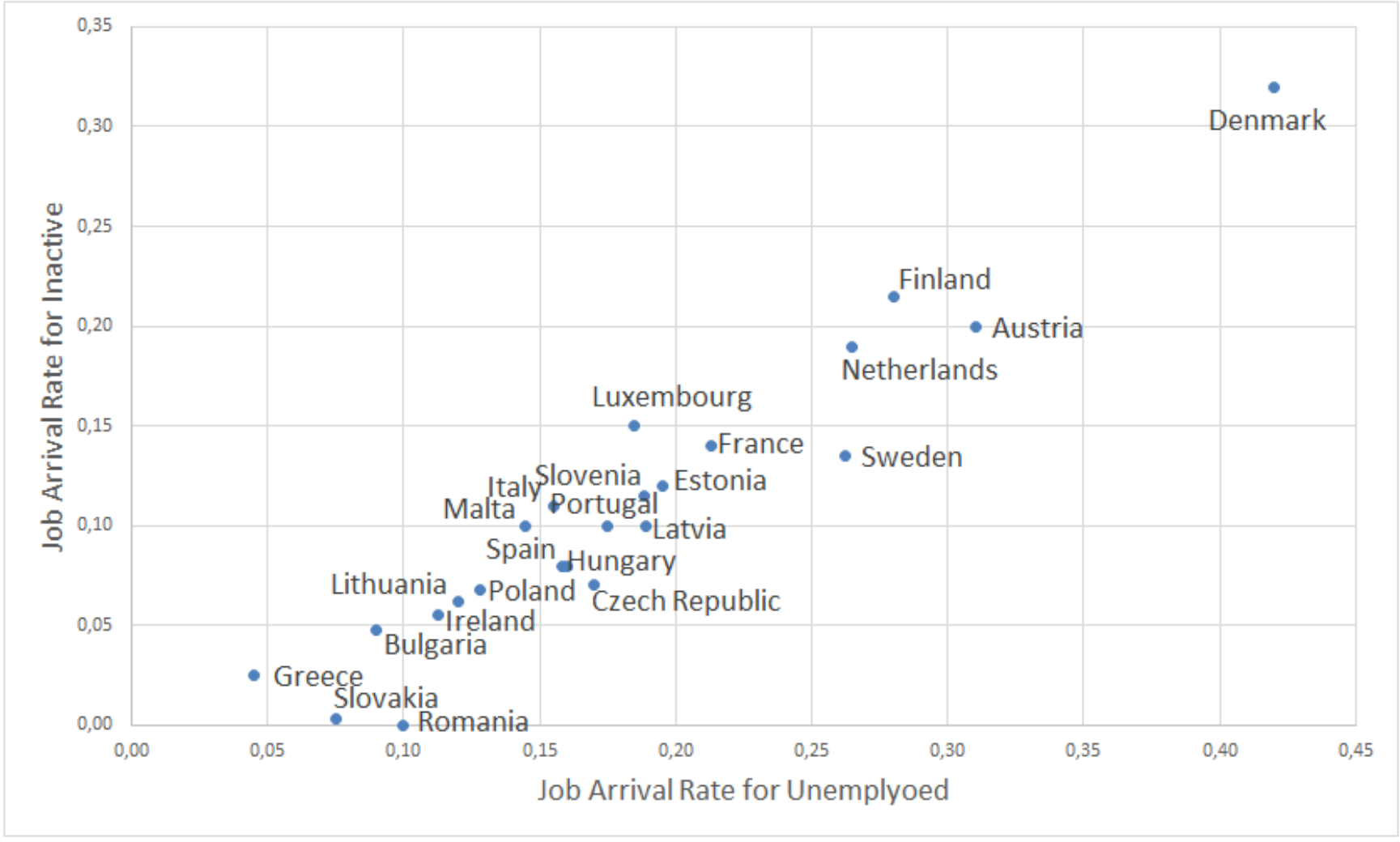
National policy
Policy reform

Labour Market Institutions



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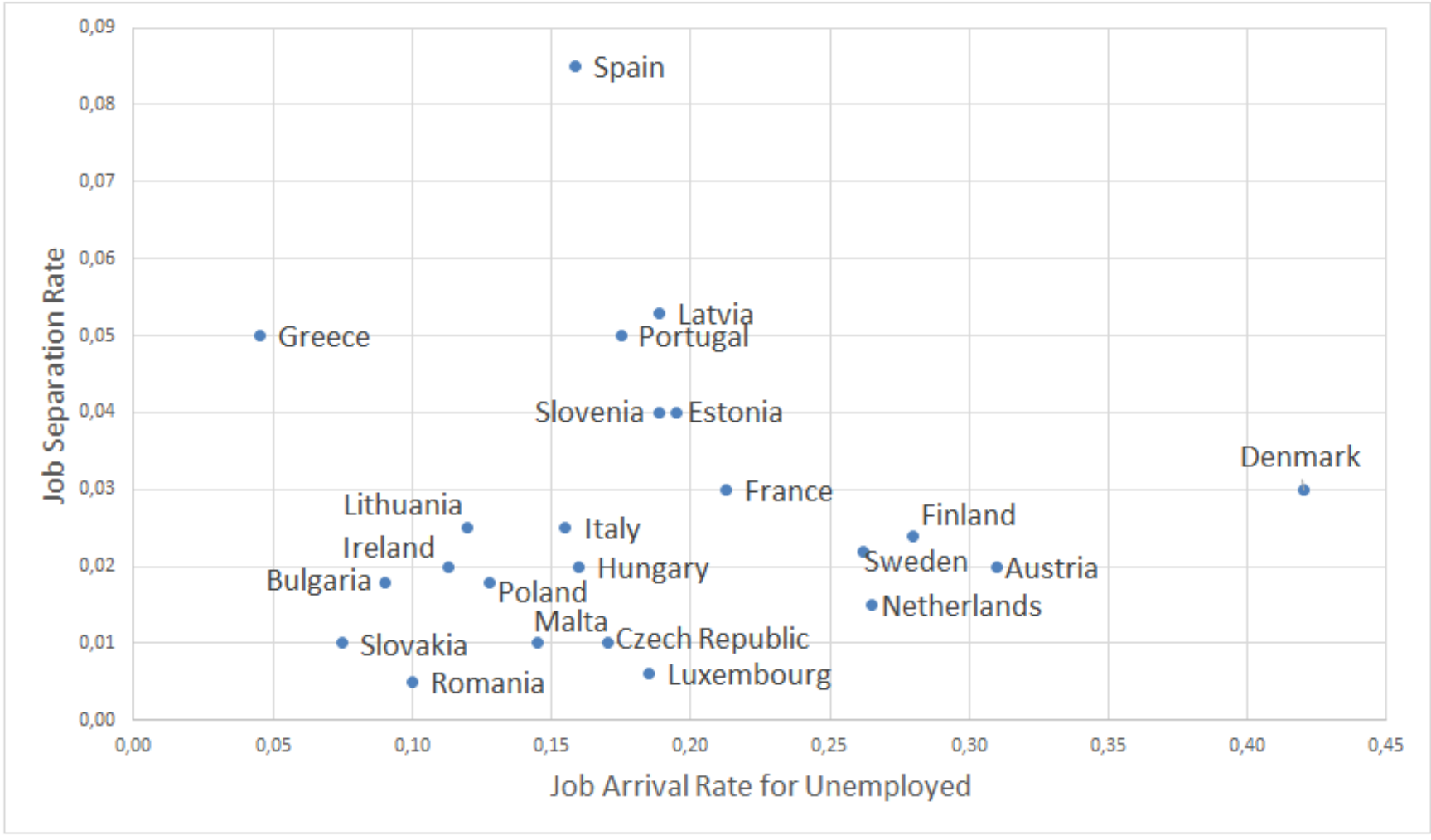

Policy Reform: France

	Tax Rate	Replacement Rate	Duration
Baseline	1.7%	33%	8
Reform	**4.1%**	**35%**	**Unlimited**

	Employed	Unemployed Eligible	Unemployed Non-Eligible	Inactive
Baseline	69.0%	3.7%	3.4%	23.9%
Reform	**80.1%**	**8.3%**	**0.1%**	**10.5%**

Job Offer Rejections	Unemployed	Inactive
Baseline	1.94%	21.44%
Reform	**2.17%**	**25.63%**

	Voluntary Separations
Baseline	59.74%
Reform	**37.32%**

Policy Experiment 4: Country Level Reform.

Experiment 4: UB policy reform, country level.

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Italy	1.2%	**5.0%**	0.41	**0.35**	2.6	∞	**1.44%**
Netherlands	2.4%	**2.2%**	0.72	**0.40**	3.3	∞	**0.64%**
Poland	0.2%	**5.1%**	0.17	**0.40**	2.0	∞	**6.72%**
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Finland	1.7%	**2.1%**	0.44	**0.35**	7.6	∞	**0.56%**

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National policy
Policy reform

Policy Experiment 5: Optimal EU-UI

- Optimal Reforms on country level are very similar ($b_0 \approx 1/3$, long duration of eligibility)
- For many countries an optimal EU system may be preferable to current national policies.
- Transfers are prevented by varying contribution payments (taxes) that depend on labour market institutions.

Preliminary exercise 5: Welfare improving EU-UI

Experiment 5: common UB policy reform, country level.

	τ (%)	τ' (%)	b0	b0	d	d	Welfare gain* (%)
Denmark	1.7%	**0.7%**	0.44	**0.35**	7.9	∞	**0.06%**
Spain	2.3%	**19.45%**	0.18	**0.35**	7.80	∞	**-0.84%**
France	1.7%	**4.1%**	0.33	**0.35**	7.9	∞	**0.89%**
Italy	1.2%	**5.0%**	0.41	**0.35**	2.6	∞	**1.44%**
Netherlands	2.4%	**1.34%**	0.72	**0.35**	3.26	∞	**0.37%**
Poland	0.2%	**4.18%**	0.17	**0.35**	1.97	∞	**6.12%**
Portugal	1.2%	**8.50%**	0.21	**0.35**	5.91	∞	**1.27%**
Finland	1.7%	**2.1%**	0.44	**0.35**	7.6	∞	**0.56%**

Baseline policy

Better EU policy

* consumption equivalent, % of autarky consumption.

Preliminary exercise 5: Approval rates

	Approval E*	Approval Ue*	Approval Une*	Approval I*	Approval Total*
Denmark	100.0	45.6	100.0	100.0	98.5
Spain	14.1	98.6	85.8	28.6	30.0
France	95.4	100.0	100.0	100.0	96.9
Italy	66.6	99.4	99.9	99.7	77.7
Netherlands	96.0	38.2	99.8	96.8	94.9
Poland	100.0	100.0	99.8	100.0	100.0
Portugal	50.3	100.0	100.0	96.0	69.2
Finland	100.0	80.8	100.0	100.0	99.5

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  - Gains from reforming national systems *in a similar way* can be large.
  - There seems to be room for agreement on a EU-UI system that smooths taxes and better integrates the European labour market.
- Work in progress: optimal EU-UI system.

Appendix: Model fit

Model Fit: France

Flows:

Data			
	E	U	I
E	0,96	0,02	0,02
U	0,21	0,62	0,17
I	0,03	0,03	0,94

Model			
	E	U	I
E	0,95	0,02	0,03
U	0,21	0,61	0,18
I	0,10	0,08	0,82

Stocks:

Data			
E	U	I	U/(U+E)
58,1%	6,0%	35,9%	9,3%

Model			
E	U	I	U/(U+E)
74,4%	7,7%	18,0%	9,3%

Model Fit: Unemployment Rate

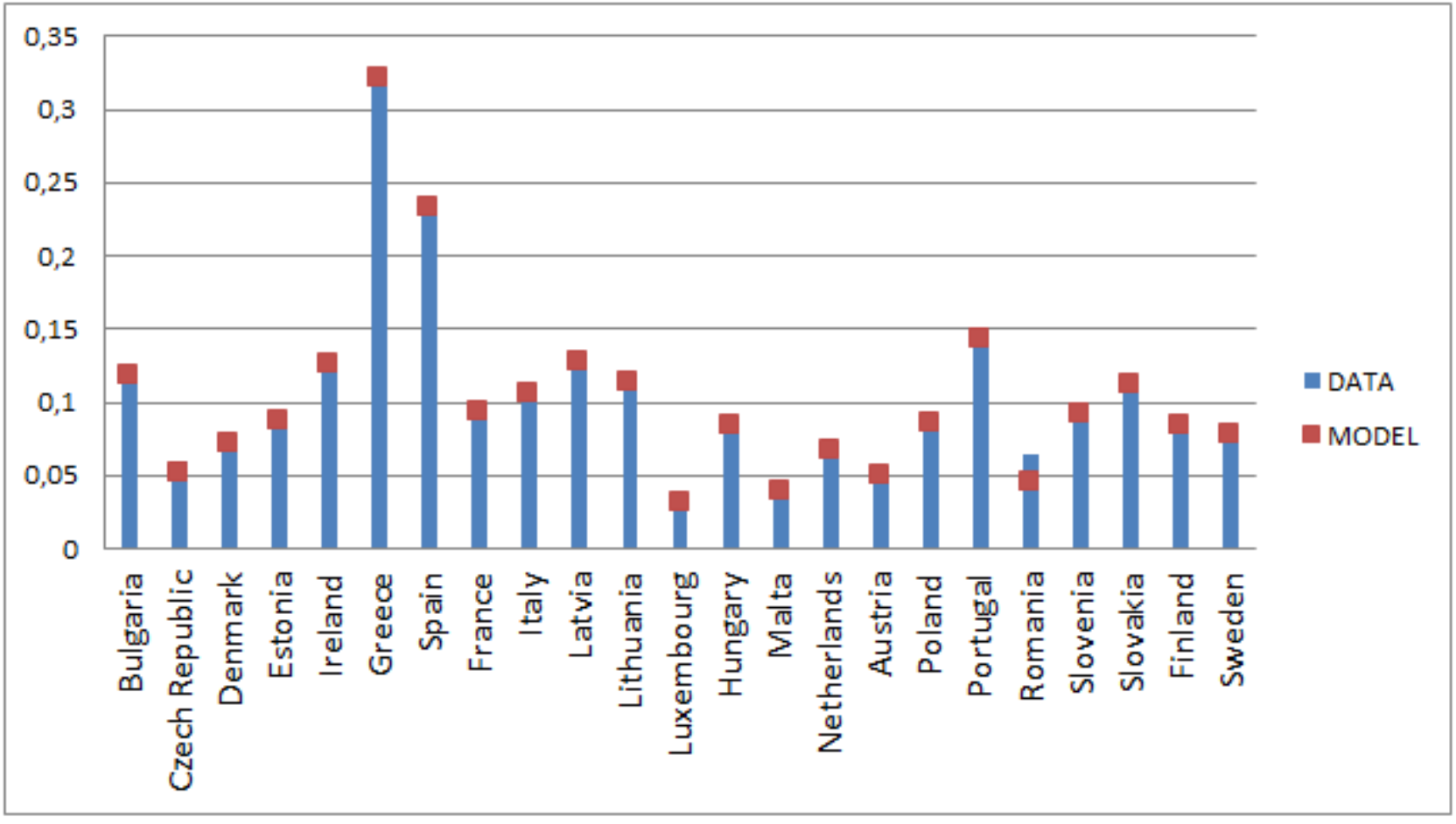

Figure: Unemployment Rate

Model Fit: Share of Employed

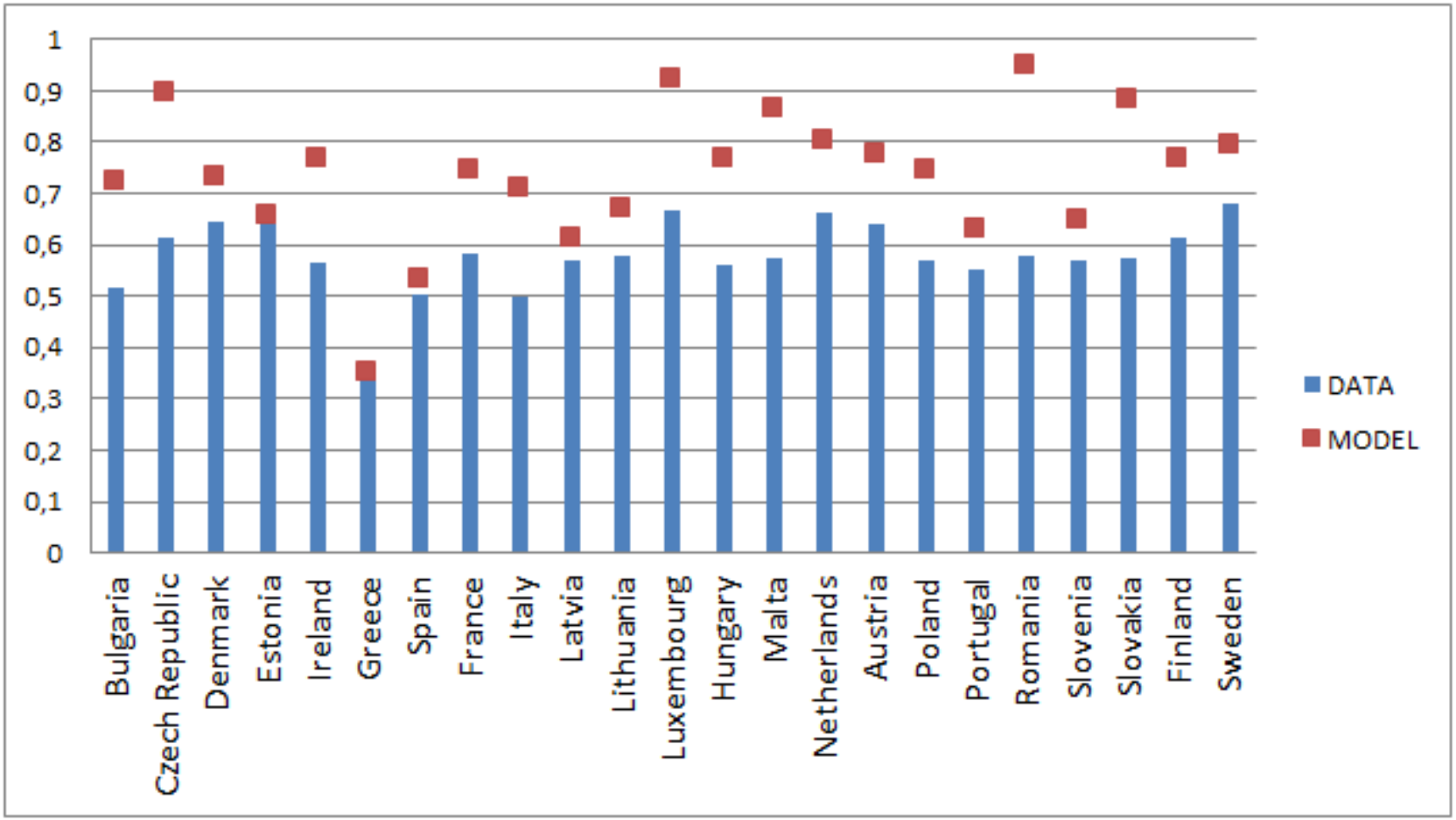

Figure: Share of Employed

parameters