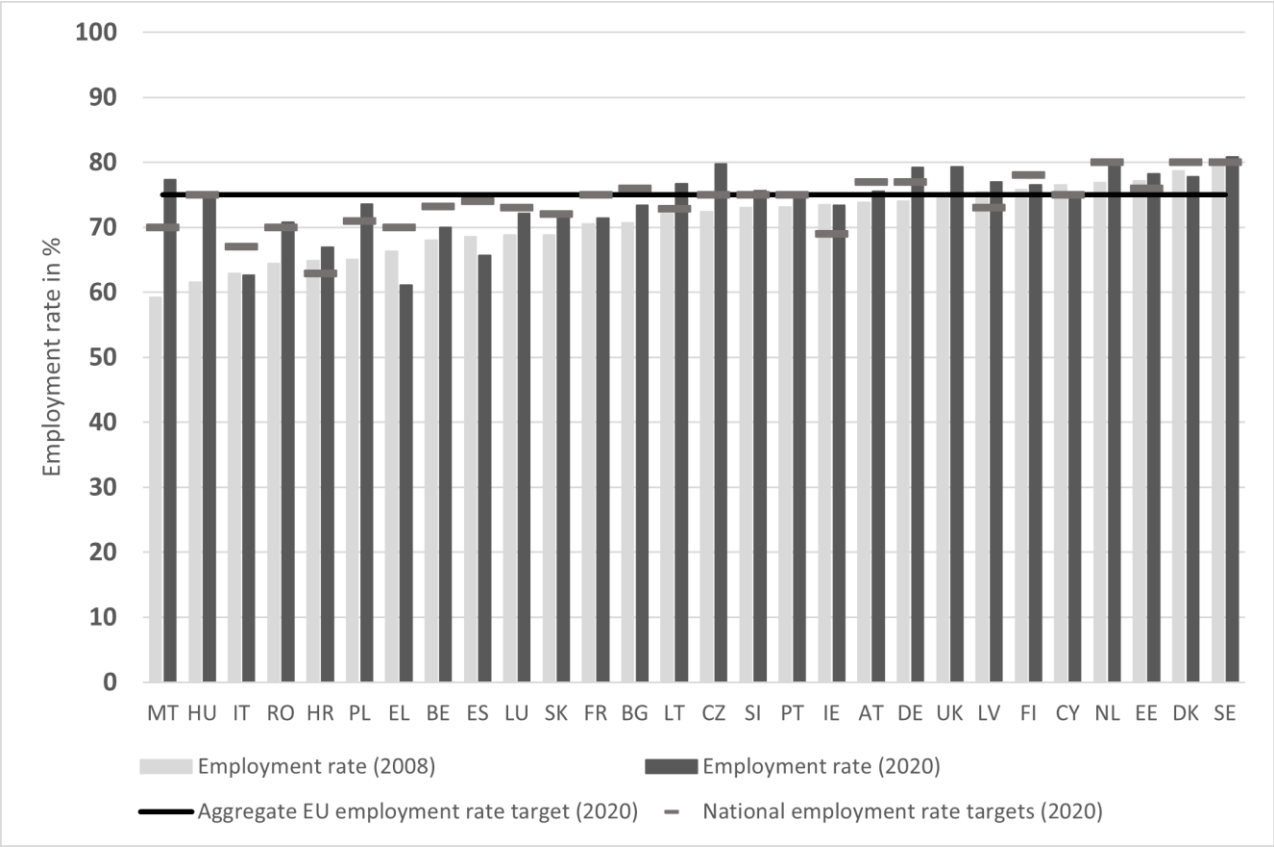
Supplementary File

A1. Employment rates in 2008 and 2020, and national and EU-level employment targets for 2020



Sources: Employment rates were retrieved from the Eurostat database on 31/07/2023; national and EU target values are from Paľová and Vejačka (2018).

A2. Description of the main indicators in the analysis

Short name	Full name	Definition	Source
EMP	Employment rate	Persons in employment as a percentage of the population of working age (20 - 64 years in this paper). Persons carrying out obligatory military or community service are not included in the target group of the survey, as is also the case for persons in institutions/collective households such as boarding houses, halls of residence and hospitals. The employed population consists of those persons who during the reference week did any work for pay or profit for at least	Eurostat database. Primary data source: EU-LFS

Short name	Full name	Definition	Source
		one hour during the reference week, or were not working but had jobs from which they were temporarily absent. In all analyses, the indicator is lagged by one year.	
AROPE 2020	At-risk-of-poverty or social exclusion rate in the total population, the social target of the EU 2020 strategy	The share of the population that is either at risk of poverty, or in a situation of severe material deprivation, or living in households with very low work intensity.	Eurostat database. Primary data source: EU-SILC. The time series is only available until 2020.
AROPE 2020(a)	At-risk-of-poverty or-social exclusion rate in the active age (18-64) population	The share of the population aged 18-64 that is either at risk of poverty, or in a situation of severe material deprivation, or living in households with very low work intensity.	Eurostat database. Primary data source: EU-SILC.
AROPE 2030	At-risk-of-poverty or social exclusion rate in the total population, the 2030 social target indicator with the revised components (EPSR action plan)	The share of the population that is either at risk of poverty, or in a situation of severe material or social deprivation, or living in (quasi-)jobless households.	Eurostat database. Primary data source: EU-SILC. The time series is only available from 2015.
AROPE 2030(a)	At-risk-of-poverty or social exclusion rate of active age (18-64) population	The share of the population aged 18-64 that is either at risk of poverty, or in a situation of severe material or social deprivation, or living in (quasi-)jobless households.	Eurostat database. Primary data source: EU-SILC.
AROP(a)	At-risk-of-poverty rate of active age (18-64) population	Headcount of individuals aged 18-64, whose income falls below the at-risk-of-poverty threshold established as 60% of median equivalent income of total population.	Eurostat database. Primary data source: EU-SILC
SMD(a)	Severe material deprivation rate of active age (18-64) population	Headcount of individuals whose household cannot afford four or more items out of the following nine: (1) to pay their rent, mortgage or utility bills; (2) to keep their home adequately warm; (3) to face unexpected expenses; (4) to eat meat or proteins regularly; (5) to go on holiday; (6) a television set; (7) a washing machine; (8) a car; (9) a telephone.	Eurostat database. Primary data source: EU-SILC.

Short name	Full name	Definition	Source
SMSD(a)	Severe material and social deprivation rate of active age (18-4) population	Headcount of individuals whose household cannot afford seven or more items out of the following thirteen: (1) to face unexpected expenses; (2) to afford paying for one week annual holiday away from home; (3) to being confronted with payment arrears (on mortgage or rental payments, utility bills, hire purchase instalments or other loan payments); (4) to afford a meal with meat, chicken, fish or vegetarian equivalent every second day; (5) to keep home adequately warm; (6) have access to a car/van for personal use; (7) replacing worn-out furniture; (8) having internet connection; (9) replacing worn-out clothes by some new ones; (10) having two pairs of properly fitting shoes (including a pair of all-weather shoes); (11) spending a small amount of money each week on him/herself; (12) having regular leisure activities; (13) getting together with friends/family for a drink/meal at least once a month.	Eurostat database. Primary data source: EU-SILC.
WI	Household work intensity	The ratio of the number of months worked during the income reference year by all working age (18-64) household members to the number of months (measured in terms of full-time equivalent) they could theoretically have worked. The ratio ranges from 0 (meaning that no one at active age worked during the preceding year) to 1 (meaning that everyone at active age was full-time full-year employed). Households composed only of children, of students (aged 18-24) and/or people aged 65+, are excluded from the calculation. The indicator is defined for the population aged 0-64. Before 2021, the upper boundary of active age was set at 59.	Eurostat database. Primary data source: EU-SILC.
VLWI 2020(a)	Very low work intensity rate, 18-59 years	If the value of household work intensity is below 0.2, for individuals in the age range 18-59.	Eurostat database. Primary data source: EU-SILC. The time series is only available until 2020.
VLWI (a)	Very low work intensity rate, 18-64 years	If the value of household work intensity is below 0.2, for individuals in the age range 18-64.	Eurostat database. Primary data source: EU-SILC. The time series is only available from 2015.

8

A3. The correlation between employment rate (20-64), AROPE and AROPE components, 2005-2020, (level and first difference)

var1	var2	Level	FD	N=
Employment rate	AROPE	-0.54**	-0,39**	438/410
Employment rate	AROPE(a)	-0.61**	-0.53**	
Employment rate	AROP	-0.34**	-0.10*	465/437
Employment rate	AROP(a)	-0.44**	-0.42**	
Employment rate	SMD	-0.48**	-0.42**	438/410
Employment rate	SMD(a)	-0.51**	-0.44**	
Employment rate	VLWI	-0.44**	-0.63**	465/437
Employment rate	VLWI(a)	-0.46**	-0.63**	

Source. Own estimates based on data retrieved from the Eurostat database on 31/07/2023.

Notes. Correlation coefficients are significant at 5%* or 1%** level.

A4. Equation for the Shift-Share Analysis

Let p_g denote the poverty rate for group g, and s_g^t denote the share of group g in year t. The aggregate poverty rate P in year t is then:

$$Pt = \sum_{g \in G} s_g^t \times p_g$$

Where G = (employed, unemployed, inactive) for employment status scenarios and G = (VLWI (very low work intensity status), LWI (low work intensity), OWI (other work intensity status)) for household level work-intensity scenarios.

In the simulation, the poverty rates p_g are either held constant (static scenario) or extrapolated linearly from observed trends between 2009 and 2019.

To simulate the employment rate at the level of the 2030 employment rate targets, we compute the employment gap:

$$\Delta s_e = s_e^{2030} - s_e^{2019}$$

This gap is filled through the reallocation of individuals from other groups:

From the group of the unemployed and then the inactive in the case of SS_UI scenarios and from very low work intensity households first, followed by low-work-intensity households in the SS_VLWI scenarios.

The resulting counterfactual poverty rate in 2030 is:

$$p^{2030} = \sum_{g \in G} s_g^{2030} \times p_g$$

This corresponds to a reweighting of the 2019 population structure to reflect employment growth consistent with EU policy targets, under fixed or trend-adjusted poverty risks across the specified groupings.

A5. Country-specific employment rate and AROPE targets for 2030 (% of population in 2019)

Country	National employment target for 2030 (in % of active age population)	National AROPE target for 2030 (% of population based on 2019)
AT	79,9	13,88
BE	80,0	17,29

BG	79,0	21,96
CY	80,0	17,35
CZ	82,2	10,74
DE	83,0	*
DK	80,0	*
EE	81,3	20,53
EL	71,1	20,50
ES	76,0	19,93
FI	80,0	12,47
FR	78,0	15,78
HR	75,0	13,32
HU	85,0	16,69
IE	78,2	18,66
IT	73,0	19,40
LT	80,7	17,50
LU	77,6	18,73
LV	80,0	21,41
MT	84,6	15,73
NL	82,5	15,31
PL	78,3	13,36
PT	80,0	13,70
RO	74,7	23,18
SE	82,0	18,22
SI	79,5	12,98
SK	76,5	13,30

Source: "State of Play on the National Targets for 2030" retrieved from https://employmentsocial-affairs.ec.europa.eu/policies-and-activities/european-pillar-social-rights-building-fairer-and-more-inclusive-european-union/european-pillar-social-rights-action-plan on 20.05.2025. *DE and DK express their AROPE targets

in terms of a reduction in the number of people living in very low work-intensity households. AROPE targets were officially expressed in terms of the reduction in the number of people at risk of poverty and social exclusion. For the comparative purposes of this study, these were converted to % of the population in 2019.

A6. Multinomial Logit Model Specifications

We estimate a multinomial logit model of employment status for working-age individuals (aged 20–64). The dependent variable captures three mutually exclusive labour market states:

$Y = 1$ (Unemployed)

$Y = 2$ (Part-time employed)

$Y = 3$ (Full-time employed)

The model includes the following independent variables:

- Age and age squared
- Gender
- Educational attainment (four categories: primary education, lower secondary, upper secondary, tertiary)
- Logarithm of household non-labour income
- Country of birth (EU / non-EU)
- Disability or health limitations
- Presence of partner
- Number of children
- Interaction terms: gender × age, gender × family status, gender × country of birth

The probability of individual i being in employment category j is estimated as:

$$P(Y_i = j) = \frac{exp(\beta_j X_i)}{1 + \sum_{k=2}^{3} exp(\beta_j X_i)} \; for \; j \in \{2, 3\}$$

where X_i is the vector of explanatory variables and β_j are the corresponding parameter vectors. The unemployed category $(Y = 1)$ is used as the reference group.

For educational attainment, individuals with primary or no education were omitted and thus served as the reference category. However, in country samples where the upper secondary category lacked variation, Stata automatically omitted it instead. In those cases, upper secondary education functions as the reference group for interpreting the education coefficients

A7. Key Parameter estimates (log-odds coefficients and 95% confidence intervals)

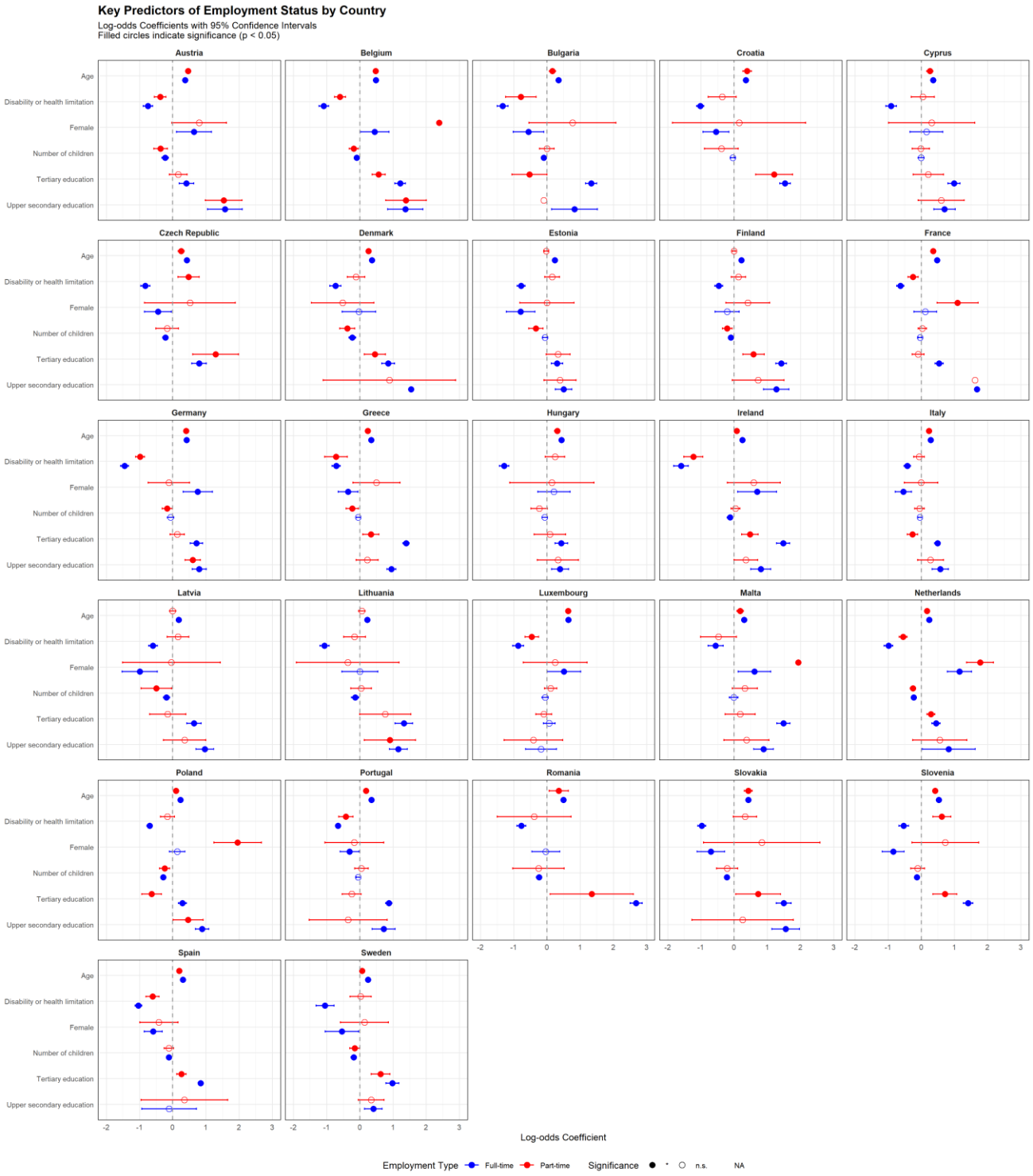


Figure A7 presents the key parameter estimates (log-odds coefficients and 95% confidence intervals) from the multinomial models for 27 EU countries. Predictors significant at $p < 0.05$ are indicated with filled circles. To maintain visual clarity and conserve space, numerical values are not shown, but are available upon request, including those from sensitivity analyses.

A8. Differences between the targeted and simulated AROPE (in thousand persons, SMSD kept constant) after increasing the employment rate to the country-specific employment rate target for the population aged 20–64, EU-27.

	Target Difference (AROPE, thousand persons)	Simulated Difference RB_Float (5)	Simulated Difference RB_Fixed (6)
EL	–860	884	417
IT	–3200	2889	2887
RO	–2532	1644	1216
HR	–298	328	180
ES	–2815	2119	–84
BE	–279	90	–227
FR	–1100	861	–624
PL	–1500	1124	–878
LU	–4	3	–24
BG	–787	798	655
IE	–90	104	–52
PT	–765	718	496
SK	–70	179	129
MT	–15	10	–22
CY	–10	57	22
AT	–204	186	–96
FI	–100	249	103
SL	–9	30	–18
LV	–95	106	41
HU	–292	343	343
LT	–223	299	180
DK	N.A.	–48	–53
DE	N.A.	847	–1731
CZ	–120	187	49
EE	–39	54	28
NL	–163	49	–280
SE	–15	62	–38
EU27	–15 000	14171	2618

Note: The target difference is missing for DE and DK as they express their AROPE targets in terms of a reduction in the number of people living in VLWI households. Source for the target difference: https://ec.europa.eu/social/BlobServlet?docId=25728&langId=en