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Jobs against poverty: a fixed-effects analysis on the link between gaining employment and exiting poverty in Europe

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ABSTRACT

This article analyses the role of gaining employment in escaping poverty at the individual level by using EU-SILC pooled panel data for 2010–2017 for 30 European countries. We assess this in a dynamic research setting using individual fixed effects that take into account unobserved time-invariant heterogeneity between individuals. We focus on the type and intensity of employment and the role of gender, education, and age. Overall, gaining employment increased the chances of exiting poverty by 33 percentage points among men and 30 percentage points among women. Shorter employment spells and part-time employment were less effective routes out of poverty. The results also suggest that poor individuals with higher education were more likely to benefit from employment to exit poverty. We found substantial cross-country variation. However, the unemployment rate, prevalence of precarious employment or spending on active labour market policies did not moderate the association between gaining employment and exiting poverty. Further analysis is needed on the institutional factors supporting poor people's employment and its effectiveness in significantly improving income level.

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1. Introduction

Jobs are often presented as the best protection against poverty. Certainly, the unemployed are particularly exposed to the risk of poverty in all

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European countries and the Great Recession brought forth the negative social consequences of mass unemployment. At the same time, increasing levels of in-work poverty have shown that being employed is not necessarily sufficient to escape poverty in all population groups. Therefore, in this article, our principal research question is to examine to what extent gaining employment lifts people out of poverty and, secondly, what individual and employment characteristics moderate the association between getting a job and exiting poverty. By focusing on within-person variation in employment and poverty, we provide novel insights into the determinants of poverty exits among the long-term unemployed and inactive individuals.

Previous studies have shown that labour market transitions have a significant impact on poverty transitions (Valletta 2006; Jenkins 2011; Polin and Raitano 2014), while concerns about ‘making work pay’ have also arisen both from the perspective of living wages and adequate work incentives (Marchal and Marx 2018; Trlifajová and Hurrell 2019). We should also acknowledge that many of the unemployed and inactive poor might be disadvantaged in the labour market (Dieckhoff 2011; Dengler 2019): their employment prospects are below average, and they are not likely to benefit from the job creation at the top end of the earnings distribution as they are more often low-skilled, of migrant background, and with long-standing health problems (e.g. Gallie *et al.* 2003).

Moreover, the world of work is changing rapidly. Non-standard work has become more common and in-work poverty has been increasing in Europe in recent years: rates of involuntary part-time jobs, temporary work contracts, and low-paid jobs have increased (OECD 2019). Simultaneously, the macro-level relationship between employment and poverty seems to have weakened in the past decades so that increasing employment rates have not led to an equal decrease in poverty (Marx 2007; Vandenbroucke and Vleminckx 2011; Marx *et al.* 2012; Gabos *et al.* 2015). This seems to point to the importance of examining the characteristics of employment and not just the crude distinction of being employed or not when analysing the determinants of poverty dynamics.

In this article, we contribute to the literature in several ways. First, we focus on the role of the type and intensity of employment, we address gender differences, and analyse how the educational level and age contribute to the likelihood of exiting poverty through employment. Second, we describe differences between countries in the association between getting a job and exiting poverty. We know very little about the magnitude of the cross-national variation in the role of employment concerning poverty

exits. Third, we use panel data from the EU Statistics on Income and Living Conditions (EU-SILC) covering the years 2010–2017 and employ fixed-effects linear probability models. These models rely only on within-individual variation in the poverty status. This eliminates bias with regard to unobserved time-invariant characteristics, such as work history, attitudes, and other personal characteristics, along with time-invariant country characteristics, and consequently improves the interpretation of the antecedents of poverty transitions compared to previous studies.

Examining poverty dynamics rather than static figures on the risk of poverty highlights the possibilities of poor people to exit poverty through employment. Governments reforming their labour markets and social protection policies will also find the results of this article interesting as we show that gaining employment mainly affects the poverty status of those who gain long-term employment. As previous research has illustrated the ‘scarring effects’ of unemployment (e.g. Dieckhoff 2011; Brand 2015), the quality of jobs available for the long-term unemployed and inactive poor should be considered when tackling poverty through labour market and other policies.

In the next section, we review the literature related to employment and poverty dynamics at the individual level and formulate our hypotheses. The data, variables, and methods used in the empirical part of the study are presented in Section 3, and the results in Section 4. The final section concludes with discussion, policy implications and limitations of the current study.

2. Literature review and hypotheses

2.1. Poverty dynamics and labour market attachment

Ample research has shown that poverty is a transitory state: there is a noticeable degree of movement in and out of poverty over an individual’s life course (for a review see Vaalavuo 2015). In the standard measure of income poverty used widely in Europe, poverty is defined as having a disposable income below the threshold of 60% of the national median income. At the household level, financial resources (i.e. the household income) and needs (i.e. the number of household members) determine whether a household member is considered poor. Changes in either of these elements affect poverty transitions at the household level (Layte and Whelan 2003; McKernan and Ratcliffe 2005), but we will focus on the financial resources side of the equation.

Labour market transitions are significantly linked to poverty entry and exit as labour income is the main source of income among active age citizens (e.g. Jenkins 2011; Polin and Raitano 2014). Unemployment and inactivity are connected to a higher risk of poverty everywhere in Europe, while social transfers cushion the income loss due to unemployment in various degrees. Accordingly, the transition from unemployment or inactivity to employment increases the chances of exiting from poverty.

In this article, our primary objective is to examine to what extent gaining employment lifts people out of poverty. We expect that the transition to employment improves the chances of exiting poverty overall (*hypothesis 1*).

2.2. Heterogeneous impact of gaining employment

However, the increasing rates of in-work poverty across Europe show that getting people into employment does not automatically lift them out of poverty. First, for some people, it is challenging to improve their income levels sufficiently through work especially if an increase in labour earnings is countered with a similar reduction in social transfers. Therefore, we need to move beyond averages and consider individual factors when we estimate the impact on poverty of becoming employed.

Gender plays an important role when we analyse both labour market participation and poverty. For example, the phenomenon of part-time employment is clearly gendered because significantly more women than men work on a part-time basis. While dual earnings have become more important to secure a sufficient labour income, women more often live in single-parent families facing higher levels of in-work poverty (Crettaz 2013). Moreover, women work in low-wage jobs more commonly and suffer from gender segregation in terms of wages and occupations (Salverda and Mayhew 2009; Brynin and Perales 2016). In general, differences between welfare states in terms of becoming employed and escaping poverty can be expected to be especially visible among women as female labour force participation and institutions supporting it still vary considerably from one country to another (Cantillon *et al.* 2001; Bamba 2007; Crompton and Lyonette 2010). Additionally, the underlying reasons for being poor and the solutions for escaping poverty may vary between men and women, affecting the way in which gaining employment lifts them out of poverty. For women, exiting

poverty might occur through an increase in the income of other household members reflecting the role of women as secondary earners in the family.

We conduct our analyses separately for men and women. *Hypothesis 2* of this study regarding gender is that women are less likely to exit poverty through employment.

Once a poor unemployed or inactive person finds a job, the quality of the new job may be insufficient to protect them against poverty. This is especially likely to be the case for low educated poor, individuals with little work experience, immigrants, and those in a marginalised position. A higher education is associated with higher earnings potential as well as a lower risk of poverty and unemployment (e.g. Garrouste *et al.* 2010; Tamborini *et al.* 2015), meaning that the effect of gaining employment could be different across educational groups. When analysing the employment effect in different educational groups, we expect highly educated individuals to be more likely to exit poverty due to access to better quality jobs (*hypothesis 3*).

Similarly, career prospects vary across the life cycle, with the young and old unemployed or inactive poor having access to worse quality jobs and low pay jobs (Lucifora *et al.* 2005; Salverda and Mayhew 2009; Tisch 2015). Accordingly, we estimate whether the link between gaining a job and exiting poverty varies across age groups. We expect the chances of exiting poverty to be lower among the youngest and oldest age groups (*hypothesis 4*).

2.3. Characteristics of employment and in-work poverty

Three mechanisms leading to in-work poverty have been identified in the literature: (1) hourly remuneration, (2) degree of labour market attachment at the household level, and (3) the number of children per working-age adult in the household (Crettaz 2013). The first two refer to financial resources at the household level and the last one to household needs. Low hourly wages have long been considered the main driving force behind employment that does not provide sufficient protection against poverty (in a review by Crettaz (2013), 31 out of 35 studies mention low wage/skill jobs or persons working in the low wage sector as risk groups).

The association between low-paid jobs and in-work poverty has been extensively studied, but Halleröd *et al.* (2015) argue that these results reflect other dimensions of job quality. In their analysis on EU

member states, Halleröd *et al.* (2015) showed that if employment had not helped escape poverty, it was most often due to unemployment (i.e. temporary work) and self-employment rather than low hourly wages. Complementing these findings, Horemans and Marx (2017) found that the poverty risk for the self-employed is higher compared to contracted workers, owing not only to lower earnings but also to fewer working hours. Additionally, others have shown that part-time employment is crucial in determining whether work is an antidote to poverty or not (Horemans *et al.* 2016; Brülle *et al.* 2019).

Part-time workers face a double risk of poverty as they have lower work intensity, but also because they might face a wage penalty. Part-time workers have a weaker bargaining position when compared to full-time employees, as employers typically invest more in full-time employees (Kalleberg 2009). Employment in part-time jobs has also been shown to negatively affect later career progress and hourly wages (Fouarge and Muffels 2009; Giesecke 2009). Moreover, previous evidence has shown that part-time employees – women in particular – are over-represented in low-wage sectors (Bardasi and Gornick 2008; Anxo *et al.* 2011; Eurofound 2014). The increase in involuntary part-time work during the latest financial crisis is likely to be reflected in higher rates of poverty among part-time workers because voluntary part-time work can be a sign of a sufficient income at household level (see also Horemans *et al.* 2016).

As for self-employment, in almost all EU countries, the self-employed are more likely to be at risk of poverty than salaried workers. It is also known that starting a business of one's own may take a while before yielding any positive income, thus the transition to self-employment may not immediately translate into an improved income level. Studies show that average earnings tend to be lower among the self-employed compared to employees, specifically at the beginning of employment (Åstebro and Chen 2014). Solo self-employment has especially been shown to be associated with a low income (Smeaton 2003). The self-employed are a very heterogeneous group. Some start up a new business in search of a unique market opportunity, while for older people, self-employment may be a way to facilitate their transition to retirement (Simoes *et al.* 2016). For many others, self-employment is the only available employment opportunity due to their profession, low skill level, or migrant background, for example (Sanders and Nee 1996; Dawson *et al.* 2009; Eurofound 2010). People moving from unemployment and poverty into self-employment may thus be an especially vulnerable group.

In light of the reviewed literature, we expect to see differences in the effects of gaining employment on exiting poverty across categories of workers in terms of part-time and full-time workers and those who are employed and self-employed. Those in full-time employment and/or with longer employment duration are expected to have higher chances of exiting poverty (*hypothesis 5*). As gender differences typically stem from differences in the employment type and intensity between men and women, we also hypothesise that the lower chances of exiting poverty by women through employment should be less visible when the type and intensity of the labour market participation are taken into account (*hypothesis 6*).

2.4. Cross-national variation

Previous research on static poverty and poverty dynamics indicates that welfare state regimes with more generous social security have fewer individuals living in poverty, lower poverty entry rates, and shorter poverty spells among the poor (Gallie and Paugam 2000; Layte and Whelan 2003; Fouarge and Layte 2005; Callens and Croux 2009; Fritzell and Rita-kallio 2010; Whelan and Maître 2010; Polin and Raitano 2014). However, studies on poverty dynamics conclude that welfare state regimes do not clearly illustrate how macro-level factors explain differences in *exiting* poverty as summarised by Polin and Raitano (2014).

Routes out of poverty may differ by country due to contextual and institutional features. For example, Salverda and Mayhew (2009) have shown that the incidence and trends of low pay vary dramatically between countries. Accordingly, we expect to find substantial variation between countries in the effect of employment on the exit from poverty (*hypothesis 7*). We are interested in examining the effect of gaining employment on the exit from poverty rather than poverty exits overall. Therefore, we have chosen three macro-level factors that could potentially be associated with the quality of available jobs among the long-term unemployed and poor. Consequently, we test the moderating impact of the following. First, the unemployment situation in the country is likely to affect the opportunities available for disadvantaged job seekers. Available jobs are more likely to be temporary, part-time and of lower pay during recessions (e.g. Abraham and Haltiwanger 1995; Burgess and de Ruyter 2000; Borowczyk-Martins 2017). We expect that the effect of employment on the exit from poverty will be smaller in contexts of high unemployment (*hypothesis 7a*). Second, the same can be expected

when looking at the prevalence of precarious employment. When the level of precarious employment is high, it is likely that long-term unemployed and inactive end up in jobs that are not able to lift them out of poverty (*hypothesis 7b*). Third, spending on active labour market policies (ALMP) should advance the employment opportunities of the unemployed (e.g. Rovny 2014; Wulfgramm and Fervers 2015). Therefore, we expect that the exits from poverty through employment will be more likely when ALMP spending is high (*hypothesis 7c*).

3. Data and methods

3.1. Data, analytical sample, and outcome variable

The longitudinal data of the European Union Statistics on Income and Living Conditions (EU-SILC) is a rotating panel in which individuals are interviewed annually for a maximum of four times. In this article, we have pooled together the data from the 2014–2018 datasets and included everyone in the analytical sample who was in the data for the full four years.¹ As the collected information on income refers to the previous calendar year (except for Ireland and the UK), the data cover the years between 2010 and 2017. We included data on individuals in 30 European countries.

Although gaining employment has been proposed as the key path for individuals to escape poverty, poverty is a household-level state and is thus affected also by factors other than the individual's employment. The household circumstances including the household's size and demographic composition (i.e. 'needs') and household-level work intensity (i.e. 'resources') play a central role in determining whether an individual lives in a household that has an annual income below the poverty threshold (Brady *et al.* 2010; Fraser *et al.* 2011; Marx and Nolan 2014; Horemans *et al.* 2016). In this article, we adopt a widely used strategy in which poverty is analysed at the individual level but controlled for household-level characteristics. This brings us closer to the actual effect of the transition into employment without disregarding the household-level nature of poverty. Moreover, this allows us to investigate gender, educational, and age differences in the association between gaining employment and exiting poverty.

Our analytical sample consists of poor individuals who were either *unemployed* or *inactive*. This status was deduced from information on

¹Ethical approval is not applicable in this paper as we use secondary data; data permission has been acquired from Eurostat / European Commission.

the monthly activity status, which refers to a self-declared status during the income reference period (variables PL211A-PL211L). Inactivity refers to students, the permanently disabled, persons in military service, and persons fulfilling care responsibilities, for example. We included those with zero months of employment within a year in the analytical sample, in other words the monthly activity status within a calendar year for each month refers to either unemployment or inactivity. This limits our analysis to those with *long-term exclusion from the labour market*. Furthermore, we restricted our analytical sample to working age adults (25–64 years old).

The standard EU definition of monetary poverty, or *at risk of poverty*, was used. This refers to a situation where an individual lives in a household which, adjusted for the household size and composition using a modified OECD equivalence scale, has an annual disposable household income (income after taxes and benefits) below 60% of the country's median.

All the poor who were either unemployed or inactive in any of the first three waves were entered for the follow-up in our analysis. Altogether 29,149 individuals were followed. They were followed until they exited poverty, until the last wave, until they turned 65, or until they retired (at least one month of retirement within a year).² Those who gained employment but stayed poor remained in the sample as they still belonged to the population at risk of exiting poverty. Consequently, our analytical sample included one to four observations per individual, with the average number of person-years per individual being 2.8 and the total number of person-years being 80,333. Our study population is described in [Table 1](#) for each country separately.

As our outcome variable, we focused on the poverty transition, namely *exiting poverty*, between any two waves of the 4-wave dataset. Our outcome variable refers to being non-poor, but since we only included poor individuals in our sample, the indicator for being non-poor refers in practice to exiting poverty. Thus, our outcome refers to being poor at $t-1$ and non-poor at $t-0$.

3.2. Employment-related variables

All employment-related variables are time-variant and were measured in concurrence with exiting poverty. *Being employed* refers to being

²1.1% of the sample entered the follow-up twice because they became unemployed or inactive poor after first exiting poverty.

Table 1. Basic statistics of study population, by country.

	Person-years	% aged 25–34	% aged 35–54	% aged 55–64	% lowest level of education	% women
Austria	1,061	23	54	23	45	68
Belgium	2,678	18	51	31	50	58
Bulgaria	3,281	26	46	29	63	49
Croatia	4,383	20	51	29	47	54
Cyprus	2,068	21	43	36	49	60
Czechia	1,539	18	56	26	40	59
Denmark	156	20	59	21	46	39
Estonia	2,877	19	45	35	35	51
Finland	1,388	24	37	39	36	45
France	2,963	21	45	34	50	63
Greece	8,911	25	54	21	44	61
Hungary	4,390	20	46	34	52	56
Iceland	126	25	47	28	53	40
Ireland	970	15	54	30	55	54
Italy	8,496	18	54	28	61	69
Latvia	2,988	18	51	31	35	53
Lithuania	2,369	22	50	29	27	54
Luxembourg	1,072	19	49	32	60	64
Malta	608	12	55	33	92	77
Netherlands	733	8	46	46	36	53
Norway	309	18	52	30	52	54
Poland	6,972	20	44	37	31	62
Portugal	1,721	18	52	29	86	62
Romania	3,663	32	52	17	56	70
Slovakia	1,397	21	55	24	30	55
Slovenia	2,729	22	50	28	32	58
Spain	8,528	18	56	26	70	57
Sweden	218	27	37	36	35	58
Switzerland	757	26	42	32	44	72
United Kingdom	1,457	23	51	26	51	56

Note: EU-SILC weights used in the analyses.

employed or self-employed for at least one month within a given year according to the aforementioned measure of monthly activity status. As our analytical sample included those without jobs for the entire calendar year, the indicator for being employed refers in practice to gaining a job. To test whether there was a lag between gaining employment and exiting poverty, we also included a sensitivity analysis in which being employed was interacted with being employed during the previous calendar year.

To account for employment intensity, we specified a variable denoting the *number of months being employed*: this variable was categorised into less than 6 months of employment, 6 to 9 months of employment, and 10 to 12 months of employment within a calendar year.

To measure the *employment type*, being employed was further broken down into four categories: full-time employee, part-time employee, full-time self-employed, and part-time self-employed. Building also on the

measure of the monthly activity status, the employment type variable was constructed as the most prevalent status within a year. If an equal number of months for two (or more) statuses was reported, a full-time status was chosen over a part-time status and being an employee was chosen over being self-employed.

Taking low-wage employment into account is difficult due to data availability as the hours worked refer to different time periods than earnings in the EU-SILC data, thus, we did not analyse the hourly wage levels.³

3.3. Individual-level control variables

All individual- and household-related variables are time-variant and were measured in concurrence with exiting poverty. To account for household-level characteristics that are associated with poverty risk, we included indicators for a household's other members ('needs') and their incomes ('resources'). Variables describing household members included the *number of working age people*, *number of children* (under 18 years of age), and *number of seniors* (over 64 years of age) living in the same household. We also included variables on *other household members' gross earnings* (in 1000 euros) and *other household members' gross benefits* (in 1000 euros).

Additional control variables included education (primary or lower secondary, (upper) secondary, and tertiary level education), calendar year, and age. Education and age groups (25- to 29-year-olds, 30- to 49-year-olds, 50- to 59-year-olds, and 60- to 64-year-olds) were also used in interaction models to test whether the effect of employment varied according to their levels.

3.4. Macro-level variables

We studied three macro-level factors that are measured annually for each country. First, the *unemployment rate*, made available by Eurostat, refers to the percentage of 20- to 64-year-old population in the labour force without employment. Second, the *precarious employment rate*, derived from Eurostat, refers to the percentage of employees with a short-term contract of up to 3 months. Third, *active labour market policies*⁴

³Variable descriptions and reference periods for each variable can be found at: <https://www.gesis.org/en/missy/metadata/EU-SILC/2016/Panel/original> (accessed 16 August 2021).

(ALMP), made available by the OECD, refers to the public expenditure on ALMP as a percentage of GDP (see Appendix Tables A5–A7). All macro-level variables were standardised and included in the models with a one-year lag.

3.5. Methods and modelling strategy

We analysed the association between gaining employment and exiting poverty using linear probability models with individual fixed effects. We chose to use a linear probability model instead of a logistic regression model as the estimates derived from the former can be more reliably compared between groups (Mood 2010). Additionally, the (conditional) logistic fixed effects model would drop all individuals who do not exit poverty. A fixed effects model controls for all observed and unobserved time-invariant characteristics and concentrates on the individual-level attributes that change simultaneously with the outcome (i.e. exiting poverty). Exploiting the longitudinal nature of the data and using the individual fixed effects model allowed us to better control for unobserved selectivity into unemployment and poverty in terms of individual characteristics such as personality and behaviour, and previous experiences, and thus brought us closer to the actual effect of gaining employment on poverty. However, any unobserved time-variant variables cannot be taken into account, such as changes in health. This matters for the causal interpretation if such variables can plausibly affect employment chances and poverty the status at the same time. Sensitivity analyses were conducted with random effects regression models: the yielded results were similar to those obtained with the linear probability models (see Appendix Table A4).

We separately assessed (1) the overall effect of being employed, (2) the effect of months being employed, and (3) the effect of the employment type. We further analysed the interaction between education and age and gaining employment. Models were run for each gender to demonstrate gender-specific associations. In addition to results including all countries simultaneously, we ran a model on the overall effect of being employed (1) with cross-level interaction between countries and being employed to illustrate underlying macro-level differences. Finally, we

⁴Information on ALMP was not available for Bulgaria, Croatia, Cyprus, Iceland, Greece, Malta, and Romania. For the UK, information was available only until 2011.

ran separate models for each macro-level variable in interaction with the overall effect of being employed (1).

The fixed effects analysis accounts for the selection of individuals into employment and thus provides a more reliable means of comparing its role in different contexts. We estimate the equation below:

$$y_{ikt} = B_0 + B_1 \text{empl}_{ikt} + B_n X_n + \eta_i + u_{ikt} \quad (1)$$

where y_{ikt} refers to the poverty status of individual i in country k in year t , empl_{ikt} refers to the employment status of individual i in country k in year t , $B_n X_n$ is a matrix of covariates, η_i stands for the individual-level fixed effect and u_{ikt} is a person-year error term. In the last set of models that include cross-level interaction between the individual and country level, we estimate a model as follows:

$$y_{ikt} = B_0 + B_1 \text{empl}_{ikt} + B_2 Z_{kt} + B_3 Z \times \text{empl}_{ikt} + B_n X_n + \eta_i + u_{ikt} \quad (2)$$

where, again, y_{ikt} refers to the poverty status of individual i in country k in year t , and $B_1 \text{empl}_{ikt}$, $B_n X_n$, η_i and u_{ikt} are defined as in Equation (1). Z_{kt} is a macro-level variable in country k in year t , and $Z \times \text{empl}_{ikt}$ refers to an interaction term between an individual-level measurement of gaining employment and a country-level measurement of a macro-level factor. We used statistical programme Stata 16.0 for the analyses and our codes can be found online (<https://github.com/INVEST-flagship/Vaalavuo-Sirnio-2022-Jobs-against-poverty-A-fixed-effects-analysis-on-the-link-between-gaining-empl>).

4. Results

Figure 1 presents the share of individuals that exited poverty listed by their employment status, country and gender. It shows that approximately a third of individuals exited poverty during the study period, ranging between less than 20% (men in Sweden) and 54% (women in Denmark). Women exited poverty on average more often than men, but women's exits occurred more probably without gaining employment.

Table 2 presents results from linear probability models with individual fixed effects by gender, combined for all countries. Five models are presented, analysing the overall effect of employment on poverty exit (Model 1), the effect of employment intensity (Model 2), the effect of employment type (Model 3), the interaction between employment and educational level (Model 4), and the interaction between employment and age (Model 5).

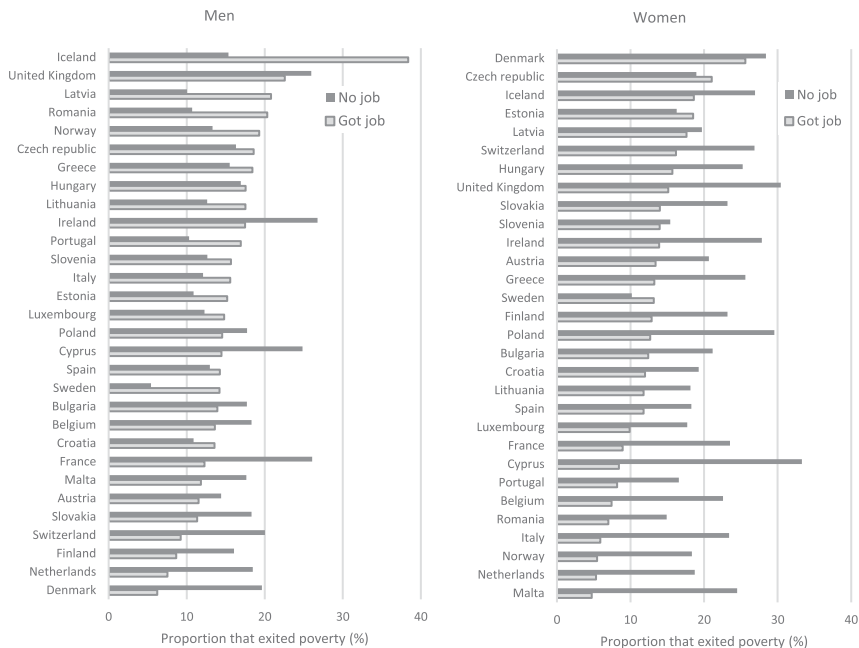


Figure 1. Poverty exits and gaining employment, by country and gender. Note: Countries sorted according to the proportion of individuals who gained employment and exited poverty, by gender. EU-SILC weights used in the analyses.

The results show that gaining employment increased the probability of exiting poverty as was expected (*hypothesis 1*), by 33 percentage points for men and 30 percentage points for women. The gender difference was to the expected direction (*hypothesis 2*). However, a short duration of employment might not help a person to escape from poverty if the person finds employment at the end of the year; as getting a job at the end of the year is not necessarily enough to lift you out of poverty that calendar year, although it might lead to exiting from poverty the following year. Sensitivity analyses (Appendix [Table A1](#)) show that the chances of exiting poverty were higher if the individual was already employed the year before.

To develop a deeper understanding of the association between gaining employment and exiting poverty, Models 2 to 4 in [Table 2](#) continue with a more detailed view of the characteristics of employment. In Model 2, we examined the association between employment intensity and exiting poverty. As expected in *hypothesis 5*, a higher number of months in employment elevated the probability of escaping from poverty more compared to fewer months. The pattern was similar for men and women.

Table 2. Association between employment and exiting poverty. Results from linear probability models with individual fixed effects by gender.

		Men			Women		
		B	Sig	95% CI	B	Sig	95% CI
Model 1: Employment (ref: not employed)	Employed	0.33	***	[0.30,0.36]	0.30	***	[0.28,0.33]
	Constant	-1.13		[-2.34,0.08]	0.01		[-0.86,0.88]
Model 2: Employment intensity (ref: not employed)	<6 months	0.15	***	[0.11,0.19]	0.18	***	[0.14,0.21]
	6-9 months	0.35	***	[0.30,0.40]	0.31	***	[0.26,0.36]
	10-12 months	0.42	***	[0.37,0.46]	0.37	***	[0.34,0.41]
	Constant	-1.00		[-2.20,0.21]	0.05		[-0.82,0.91]
Model 3: Employment type (ref: not employed)	Full-time employed	0.36	***	[0.32,0.41]	0.37	***	[0.34,0.41]
	Full-time self-employed	0.28	***	[0.21,0.36]	0.30	***	[0.21,0.39]
	Part-time employed	0.22	***	[0.15,0.28]	0.26	***	[0.21,0.30]
	Part-time self-employed	0.34	***	[0.28,0.39]	0.27	***	[0.22,0.32]
	Constant	-1.11		[-2.32,0.11]	-0.01		[-0.88,0.85]
Model 4: Interaction between employment and education ^a (ref: not employed; basic-level education)	Employed	0.29	***	[0.24,0.33]	0.27	***	[0.23,0.31]
	Upper secondary	0.05	*	[0.00,0.09]	0.03	*	[0.00,0.07]
	Tertiary	0.05		[-0.03,0.12]	0.05		[-0.02,0.11]
	Employed X Upper secondary	0.09	**	[0.03,0.15]	0.06	*	[0.00,0.11]
	Employed X Tertiary	0.13	*	[0.02,0.24]	0.10	*	[0.02,0.18]
	Constant	-1.17		[-2.38,0.03]	-0.01		[-0.88,0.86]
Model 5: Interaction between employment and age ^b (ref: not employed, aged 25-29)	Employed	0.36	***	[0.24,0.51]	0.36	***	[0.24,0.51]
	Aged 30-49	0.03		[-0.03,0.08]	0.03	**	[0.01,0.05]
	Aged 50-59	0.03		[-0.04,0.10]	0.02		[-0.01,0.05]
	Aged 60-64	0.03		[-0.06,0.12]	0.02		[-0.01,0.06]
	Employed x 30-49	-0.03		[-0.08,0.02]	-0.06	*	[-0.12,-0.00]
	Employed x 50-59	-0.06	*	[-0.11,-0.00]	-0.05		[-0.11,-0.08]
	Employed x 60-64	-0.03		[-0.11,0.05]	0.01		[-0.10,0.12]
	Constant	-0.62		[-1.36,0.11]	-0.13		[-0.74,0.49]
No. persons			11,349			17,800	
No. person-years			30,880			49,453	

Notes: Weighted parameter estimates adjusted for household composition (number of adults, number of children, number of seniors), other household members' total gross earnings and benefits, age, calendar year, and educational level. See full model for model 1 in the Appendix (Table 2). EU-SILC weights used in the analyses.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

^aThe interaction between employment and education statistically significant for men ($p < 0.01$) and for women ($p < 0.05$).

^bThe interaction between employment and age groups statistically non-significant ($p > 0.05$) for men and for women.

Model 3 in [Table 2](#) illustrates that part-time employed had the lowest chances of exiting poverty both for men and women as suggested by *hypothesis 5*. Full-time self-employment improved the probability of escaping poverty less than full-time employment for both men and women. For men, the effects of part-time self-employment did not statistically differ from that of full-time employment, while women who found part-time self-employment had lower chances of exiting poverty compared to women in full-time employment. Accordingly, our hypothesis regarding the worse position of self-employed did not hold consistently. As suggested by *hypothesis 6*, the gender difference in the coefficients was smaller when specific categories of employment type were examined. For example, there was no gender difference in exiting poverty when gaining full-time employment.

[Table 3](#) presents the characteristics of those in our analytical sample who gained employment. We can see that full-time employment was more prevalent for men than women (50% of those who gained employment compared to 40%), while a longer duration of employment was slightly more common for women than men.

We also studied the extent to which the association between employment and the exit from poverty varied according to the level of education. These results, presented in Model 4 in [Table 2](#), show that employment among the low educated poor and inactive advanced exits from poverty less compared to other educational groups, confirming *hypothesis 3*. This interaction was statistically significant both for men and women. Finally, we analysed whether the extent to which employment helped escaping from poverty varied by age (Model 5 in [Table 2](#)). This interaction proved to be statistically non-significant for both genders against our expectations (*hypothesis 4*). To better account for a prior work history, we also tested whether adjusting for the number of years spent in paid work during working life would partly explain the association between employment and exiting from poverty, but this seemed not to be the case ([Appendix Table A3](#)).

Next, we move on to the differences between countries. The country-specific estimations on the effect of employment on exiting from poverty are presented in [Figure 2](#). The estimated model analysed the association between employment and exiting poverty (as in Model 1, [Table 2](#)) by including the interaction between country and employment ($p < 0.000$ for both men and women). The association between gaining employment and exiting poverty varied substantially between countries as was expected (*hypothesis 7*), while we were unable to identify any meaningful

Table 3. Descriptive statistics of analysed unemployed or inactive poor who gained employment.

	Men					Women				
	Employed for 10–12 months	Full-time employed	Full-time self-employed	Part-time employed	Part-time self-employed	Employed for 10–12 months	Full-time employed	Full-time self-employed	Part-time employed	Part-time self-employed
Austria	42	60	8	13	18	50	22	6	46	25
Belgium	48	53	4	18	25	52	27	3	46	24
Bulgaria	35	37	1	11	51	38	28	3	6	63
Croatia	41	64	6	1	29	41	58	11	11	20
Cyprus	32	39	4	17	40	47	58	2	14	26
Czechia	37	67	9	7	17	36	56	5	20	19
Denmark	75	13	0	74	13	14	70	0	0	30
Estonia	38	60	7	19	15	47	62	3	22	13
Finland	30	42	1	33	24	36	47	3	30	21
France	38	34	12	10	44	38	17	3	37	43
Greece	55	44	12	16	27	64	37	18	18	27
Hungary	45	69	3	19	10	38	65	1	16	18
Iceland	53	67	27	4	2	75	36	0	41	24
Ireland	63	19	30	22	30	64	13	8	44	35
Italy	71	41	15	15	29	71	22	10	32	36
Latvia	42	66	10	5	19	43	64	3	12	21
Lithuania	25	65	5	11	19	44	69	1	13	17
Luxembourg	44	67	1	6	26	39	37	2	39	23
Malta	49	53	0	32	14	40	12	0	83	6
Netherlands	40	14	1	60	25	61	3	0	36	61
Norway	63	55	8	6	30	58	33	0	41	26
Poland	37	66	6	9	19	41	50	6	22	22
Portugal	66	68	10	12	9	58	62	12	21	5
Romania	88	31	17	1	52	85	27	27	2	44
Slovak republic	38	89	5	6	0	54	83	5	12	0
Slovenia	49	48	29	10	14	37	55	13	12	20

(Continued)

Table 3. Continued.

	Men					Women				
	Employed for 10–12 months	Full-time employed	Full-time self- employed	Part-time employed	Part-time self- employed	Employed for 10–12 months	Full-time employed	Full-time self- employed	Part-time employed	Part-time self- employed
Spain	47	51	10	14	25	53	33	9	30	29
Sweden	52	36	0	52	12	71	14	6	55	26
Switzerland	42	27	3	59	11	44	5	0	57	38
United Kingdom	69	64	14	16	6	78	23	12	48	17
Average	49	50	9	19	22	51	40	6	28	26

Note: EU-SILC weights used in the analyses.

clusters that would conform with the idea of welfare state regimes, for example. For men, the effect was lowest in Norway, Switzerland, Denmark, and Luxembourg (the effect size being 20 percentage points or less) and was the highest in the Czech Republic, Belgium, Slovakia, the United Kingdom, and Ireland (43 percentage points or more). For women, employment increased the probability of exiting from poverty least in Norway, Luxembourg, Lithuania, and the Netherlands (23 percentage points or less), while the highest increase was found in Finland, Ireland, Iceland, and Denmark (47 percentage points or more). In short, the ranking of countries differed by gender and both

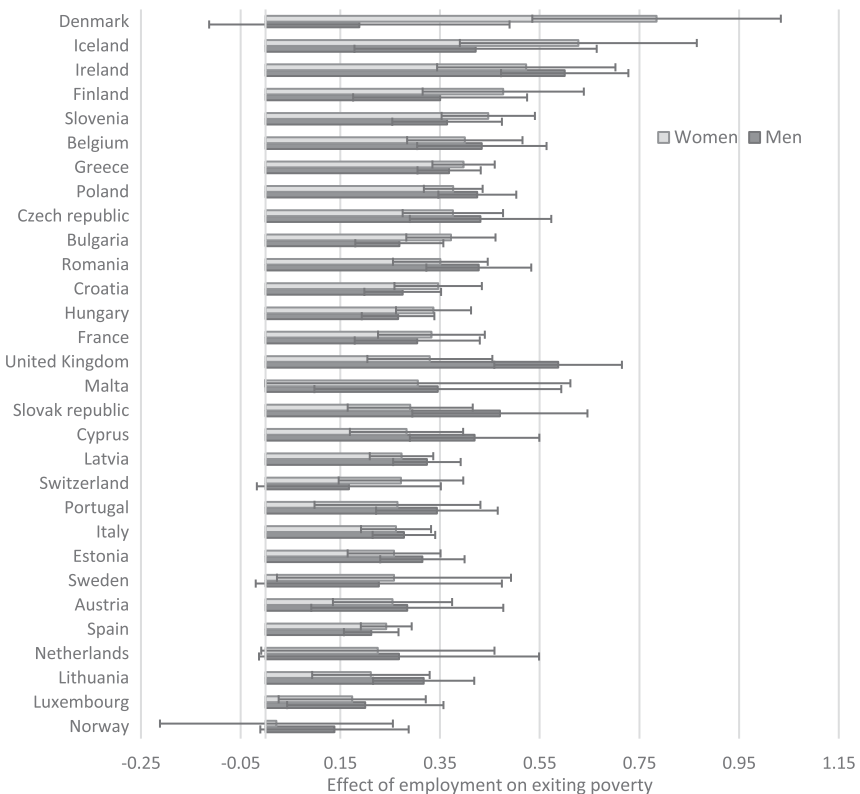


Figure 2. Association between employment and exiting poverty by country, separately for men and women. Results from linear probability models with individual fixed effects. Weighted parameter estimates from a model including the interaction between employment and country, adjusted for household composition (number of adults, number of children, number of seniors), other household members' total gross earnings and benefits, age, calendar year, and educational level. Note: EU-SILC weights used in the analyses.

Table 4. Interaction between employment and macro-level variables. Results from a linear probability model with individual fixed effects by gender.

	Unemployment rate			Precarious employment rate			Active labor market policies		
	<i>B</i>	Sig	95% CI	<i>B</i>	Sig	95% CI	<i>B</i>	Sig	95% CI
Men									
Employed	0.33	***	[0.29,0.37]	0.33	***	[0.29,0.37]	0.31	***	[0.26,0.36]
Unemployment rate	0.01		[−0.02,0.03]						
Employed × Unemployment rate	−0.01		[−0.06,0.04]						
Precarious employment rate				−0.02		[−0.05,0.01]			
Employed × Precarious employment rate				−0.03		[−0.06,0.01]			
ALMP							0.00		[−0.01,0.02]
Employed × ALMP							−0.01		[−0.05,0.03]
Constant	−0.65		[−1.36,0.06]	−0.61		[−1.32,0.10]	−0.87	*	[−1.62,−0.12]
No. persons	11,349			11,349			8,165		
No. person-years	30,880			30,880			21,788		
Women									
Employed	0.31	***	[0.29,0.33]	0.31	***	[0.28,0.34]	0.30	***	[0.26,0.34]
Unemployment rate	0.02		[−0.01,0.05]						
Employed × Unemployment rate	−0.01		[−0.05,0.03]						
Precarious employment rate				−0.04	**	[−0.06,−0.02]			
Employed × Precarious employment rate				−0.01		[−0.04,0.03]			
ALMP							0.00		[−0.02,0.02]
Employed × ALMP							0.03		[−0.01,0.07]
Constant	−0.15		[−0.73,0.42]	−0.06		[−0.67,0.55]	−0.36		[−1.17,0.45]
No. Persons	17,800			17,800			12,665		
No. person-years	49,453			49,453			34,520		

Notes: Weighted parameter estimates adjusted for household composition (number of adults, number of children, number of seniors), other household members' total gross earnings and benefits, age, calendar year, and educational level. Macro-level variables are standardised and included with a one-year lag.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

extremes (high and low rates of poverty exit through employment) included the Nordic countries.

Table 3 already indicated that in some countries the gender differences in employment characteristics are important. This led us to believe that also the gender differences in the effect of employment would vary between countries more than in our pooled analysis. However, gender differences *within* countries were statistically non-significant with the exception of Denmark and the UK.

Lastly, we looked at the cross-level interaction between the individual-level indicator of gaining employment and macro-level variables describing employment prospects and the quality of employment, namely the unemployment rate, precarious employment rate and spending on active labour market policies. Table 4 shows that the interaction between employment and each macro-level variable was statistically non-significant both for men and women. Thus, contrary to our *hypotheses 7a–7c*, the association between gaining employment and exiting poverty did not seem to vary according to the studied macro-level factors.

5. Conclusion

In this article, we analysed what role gaining employment plays in exiting from poverty in Europe. This was done by following unemployed and inactive poor individuals in 30 European countries employing EU-SILC panel data and fixed effects models. More specifically, the focus was to investigate what employment characteristics were most connected to a positive transition out of poverty and whether gender, educational, or age differences could be identified. Poverty risk is highly related to work status. It is well known that the unemployed suffer a higher risk of poverty than the working population. Nevertheless, work is not always enough to lift individuals out of poverty. Indeed, recent years have witnessed a rise in in-work poverty in Europe. Poor unemployed and inactive individuals may also be in a disadvantaged position in the labour market, not benefiting from high quality jobs. A dynamic perspective on transitions is thus essential.

One-third of the long-term unemployed or inactive poor who gained employment were not able to lift themselves above the poverty threshold with considerable variation across countries. Overall, gaining employment increased the chances of exiting poverty by approximately 30 percentage points when other factors and unobserved heterogeneity were controlled for.

Our findings illustrate that characteristics of a job in terms of contract type (self-employed, part-time employee, full-time employee) and work intensity (months worked during the calendar year) in particular are important determinants in how effectively work lifts people out of poverty. This is in line with previous studies indicating that short employment spells and part-time work are the key antecedents of in-work poverty (Halleröd *et al.* 2015; Horemans *et al.* 2016; Horemans and Marx 2017; Brülle *et al.* 2019). If the unemployed and inactive poor are more likely to end up in non-full-time and short-term jobs, the financial work incentives can be modest at least in some countries. The results also suggest that poor individuals with a higher education were more likely to benefit from employment and be able to exit poverty. However, we also showed that the effect of employment might not be immediate, however, in those cases the likelihood of poverty exit increased in the following year after being employed.

Country-level features could play a role in the extent to which employment is an effective route out of poverty. Previous studies have found that institutional features such as extensive income support does affect poverty and poverty exit (e.g. Brady *et al.* 2010; Nolan and Whelan 2014). In contrast, we showed that no clear patterns emerged from our cross-country comparison of employment effects. To dive deeper into this question, we investigated three macro-level factors that could potentially *modify* the effect of gaining employment on exiting poverty. However, the association between employment and poverty did not vary according to any of the factors included, namely the unemployment rate, prevalence of precarious employment and active labour market spending. Examining country differences provides an interesting avenue for future research.

Furthermore, our findings indicate that gender differences were rather small *within* countries and statistically significant differences were only found in Denmark and the UK. Results from all countries combined did not suggest that employment increased the chances of exit from poverty more for men than women when the employment type was taken into account. The higher likelihood of women working in low pay sectors was not reflected in our results. This could indicate that, as opposed to the general population, poor long-term unemployed/inactive men and women have more things in common when it comes to labour market opportunities. However, our descriptive evidence did show that men exit poverty more often than women through employment.

While earlier literature and poverty statistics on self-employment led us to expect poorer outcomes among those who ended up in self-

employment, the results did not consistently confirm this hypothesis. It seems that the duration of work is more important for poverty outcomes than the type of employment in terms of being employee or self-employed. In general, some reservations should be made about poverty risks among the self-employed because measuring the income from self-employment has proven to be difficult (e.g. Kukk *et al.* 2020).

We also find that employment elevates the chances of an exit from poverty less for those with the lowest level of education. This highlights how ‘work-first strategy’ benefits most notably the poor whose position in the labour market is relatively advantageous. Low education hinders access to employment due to the low skill level and accumulation of other disadvantages, and the pay of the accessible jobs is often lower. Concentrating solely on job creation without acknowledging the diverging employment prospects among the unemployed and inactive and paying attention to the quality of the new jobs appears to be an unlikely path to reduce poverty.

An individual fixed effects analysis with panel data is an effective method to account for individual-level unobserved heterogeneity that can bias estimates of poverty dynamics. However, it should be noted that our approach does not take into account time-varying cross-country differences in unemployment and poverty: the group of unemployed and inactive poor may differ greatly between countries in terms of accumulation of other disadvantages, for example. Such differences are notably linked with the employment prospects of the poor. Further research is needed to examine how the employment prospects of the poor vary between different contextual settings and address the role of different macro-level determinants on poverty exit.

Some forms of non-standard work are already becoming typical work in Europe. Making work pay is a solution for both better work incentives and poverty reduction and is usually accepted across the ideological lines. Policymakers as well as researchers should continue to study how new forms of employment and self-employment affect poverty and inequality in our societies and how to support people in more precarious contracts. When more longitudinal data becomes available, it will allow us to also study the changes across time in the chances of work lifting people out of poverty and different chances of becoming employed among poor and non-poor individuals.

Our study faces some limitations due to data availability. First, we did not have information on hourly wages, which made it impossible to analyse the impact of becoming employed in a low-wage job. While the wage level is an

important characteristic of job quality (Gutiérrez *et al.* 2009), previous research has shown that low wages are less often the reason behind in-work poverty compared to underemployment (Halleröd *et al.* 2015). Regardless, it would be beneficial to include information on wage level in future studies as it could partially explain the phenomenon. Second, information on the sector, industry or firm would have made it possible to study the association between getting a job and exiting poverty in more detail. Third, more variables on the job are needed to make inferences about the quality of the job. Fourth, employment prospects are linked to poverty duration (e.g. Andriopoulou and Tsakloglou 2015). We should further investigate how left-hand censoring in our data affects the results. Those with a longer duration in both poverty and unemployment are less likely to, first, get a job, and second, exit poverty through employment.

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Data availability statement

Data is available for researchers through Eurostat. See instructions: <https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions>

Disclosure statement

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Appendix

Table A1. Interaction between employment $t=0$ and $t=1$ and exiting poverty. Results from a linear probability model with individual fixed effects by gender.

	Men			women		
	<i>B</i>	Sig	95% CI	<i>B</i>	Sig	95% CI
Employed t_0	0.28	***	[0.24,0.32]	0.24	***	[0.21,0.27]
Employed $t=1$	-0.04	*	[-0.07,-0.01]	-0.09	***	[-0.12,-0.06]
Employed $t_0 \times$ Employed $t=1$	0.19	***	[0.13,0.26]	0.30	***	[0.24,0.36]
Constant	-0.87		[-2.36,0.63]	0.21		[-0.84,1.26]
No. persons	10,895			17,244		
No. person-years	24,275			38,777		

Note: Same controls as in Table 2. Only individuals who exited poverty in third or fourth wave are included.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Table A2. Association between employment and exiting poverty. Results from a linear probability model with individual fixed effects by gender (Model 1).

	Men			Women		
	<i>B</i>	Sig	95% CI	<i>B</i>	Sig	95% CI
Not employed	0.00		[0.00,0.00]	0.00		[0.00,0.00]
Employed	0.33	***	[0.30,0.36]	0.30	***	[0.28,0.33]
Household-level controls						
No. of working age ppl (18–64 years old)	0.00		[-0.03,0.03]	0.01		[-0.01,0.03]
No. of children (under 18 years old)	0.01		[-0.02,0.04]	0.00		[-0.02,0.02]
No. of seniors (over 64 years old)	0.09	***	[0.04,0.14]	0.10	***	[0.07,0.14]
Other HH members earnings (1000 EUR)	0.02	***	[0.01,0.03]	0.02	***	[0.02,0.03]
Other HH members benefits (1000 EUR)	0.03	***	[0.02,0.03]	0.03	***	[0.03,0.03]
Other controls						
Age	0.02		[-0.01,0.05]	-0.01		[-0.03,0.01]
<i>Calendar year (income reference period)</i>						
2010	0.00		[0.00,0.00]	0.00		[0.00,0.00]
2011	0.07	**	[0.02,0.11]	0.12	***	[0.09,0.15]
2012	0.13	***	[0.06,0.19]	0.21	***	[0.16,0.26]
2013	0.12	**	[0.03,0.22]	0.26	***	[0.20,0.33]
2014	0.18	**	[0.05,0.30]	0.34	***	[0.25,0.43]
2015	0.23	**	[0.08,0.38]	0.42	***	[0.31,0.53]
2016	0.23	*	[0.05,0.41]	0.48	***	[0.35,0.61]
2017	0.28	**	[0.07,0.49]	0.51	***	[0.36,0.67]
2018	0.18		[-0.09,0.45]	0.58	***	[0.36,0.80]
<i>Education</i>						
Basic	0.00		[0.00,0.00]	0.00		[0.00,0.00]
Upper secondary	0.07	**	[0.03,0.11]	0.04	**	[0.01,0.07]
Tertiary	0.09	*	[0.01,0.16]	0.06	*	[0.00,0.13]
Constant	-1.13		[-2.34,0.08]	0.01		[-0.86,0.88]
No. of persons	11,349			17,800		
No. of person-years	30,880			49,453		

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Table A3. Contribution of employment history in exiting poverty. Results from a linear probability model with individual fixed effects by gender.

	Men			Women		
	<i>B</i>	Sig	95% CI	<i>B</i>	Sig	95% CI
Employed	0.32	***	[0.29,0.36]	0.30	***	[0.27,0.33]
Years spent in paid work ^a	0.00	*	[0.00,0.00]	0.00	*	[0.00,0.00]
Constant	-1.15		[-2.36,0.06]	-0.01		[-0.88,0.86]
No. persons	11,349			17,800		
No. person-years	30,880			49,453		

Note: Same controls as in Table 2.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

^aNumber of years spent in paid work during working life. The interaction between employment and number of years spent in paid work proved to be statistically insignificant.

Table A4. Association between employment and exiting poverty. Results from a random-effects linear probability model by gender (Model 1).

	Men			Women		
	<i>B</i>	Sig	95% CI	<i>B</i>	Sig	95% CI
Not employed	0.00		[0.00,0.00]	0.00		[0.00,0.00]
Employed	0.31	***	[0.31,0.31]	0.30	***	[0.30,0.30]
Household-level controls						
No. of working age ppl (18–64 years old)	-0.01	***	[-0.01, -0.01]	-0.01	***	[-0.01, -0.01]
No. of children (under 18 years old)	-0.02	***	[-0.02, -0.02]	-0.01	***	[-0.01, -0.01]
No. of seniors (over 64 years old)	-0.01	***	[-0.01, -0.01]	0.01	***	[0.01,0.01]
Other HH members earnings (1000 EUR)	0.01	***	[0.01,0.01]	0.01	***	[0.01,0.01]
Other HH members benefits (1000 EUR)	0.01	***	[0.01,0.01]	0.01	***	[0.01,0.01]
other controls						
Age	0.00	***	[0.00,0.00]	0.00	***	[0.00,0.00]
Calendar year (income reference period)						
2010	0.00		[0.00,0.00]	0.00		[0.00,0.00]
2011	0.05	***	[0.05,0.05]	0.07	***	[0.07,0.07]
2012	0.07	***	[0.07,0.07]	0.10	***	[0.10,0.10]
2013	0.05	***	[0.05,0.05]	0.09	***	[0.09,0.09]
2014	0.07	***	[0.07,0.08]	0.09	***	[0.09,0.09]
2015	0.10	***	[0.10,0.10]	0.12	***	[0.12,0.12]
2016	0.07	***	[0.07,0.07]	0.11	***	[0.11,0.11]
2017	0.10	***	[0.10,0.10]	0.09	***	[0.09,0.09]
2018	0.03	***	[0.03,0.03]	0.10	***	[0.10,0.10]
Education						
Basic	0.00		[0.00,0.00]	0.00		[0.00,0.00]
Upper secondary	0.02	***	[0.02,0.02]	0.04	***	[0.04,0.04]
Tertiary	0.04	***	[0.04,0.04]	0.06	***	[0.06,0.06]
Constant	-0.05	***	[-0.05, -0.05]	-0.07	***	[-0.07, -0.06]
No. persons	11,349			17,800		
No. person-years	30,880			49,453		

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Table A5. Macro-level variables: unemployment rate (% of population aged 20–64).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	5.0	4.6	4.3	4.7	5.1	5.5	5.6	5.8	5.3	4.7
Belgium	7.7	8.0	6.9	7.4	8.3	8.4	8.4	7.7	7.0	5.8
Bulgaria	6.6	10.0	11.0	12.0	12.7	11.3	9.1	7.6	6.1	5.1
Switzerland	4.0	4.7	4.3	4.4	4.6	4.8	4.7	4.8	4.8	4.7
Cyprus	5.4	6.2	7.8	11.8	15.8	16.0	14.9	12.9	11.1	8.4
Czech Republic	6.5	7.1	6.5	6.8	6.8	6.0	5.0	3.9	2.8	2.2
Denmark	5.8	7.1	7.0	7.2	6.9	6.5	6.0	5.6	5.3	4.8
Estonia	13.3	16.7	12.2	10.0	8.6	7.3	6.1	6.8	5.7	5.1
Greece	9.5	12.7	17.8	24.3	27.3	26.4	24.9	23.5	21.4	19.3
Spain	17.2	19.3	20.9	24.3	25.6	24.1	21.7	19.3	16.9	14.9
Finland	7.4	7.6	7.1	7.0	7.5	8.0	8.8	8.2	8.1	6.8
France	8.3	8.5	8.5	9.0	9.6	9.9	10.0	9.7	9.1	8.8
Croatia	8.8	11.1	13.2	15.5	16.6	16.5	15.5	12.5	10.8	8.2
Hungary	9.9	11.1	11.0	10.9	10.0	7.6	6.7	5.0	4.0	3.6
Ireland	12.0	14.0	14.9	14.9	13.3	11.5	9.6	8.1	6.4	5.4
Iceland	6.6	6.8	6.4	5.3	4.8	4.4	3.5	2.8	2.4	2.3
Italy	7.5	8.1	8.1	10.3	11.9	12.5	11.7	11.5	11.1	10.5
Lithuania	13.7	17.8	15.4	13.5	11.9	10.8	9.2	8.0	7.2	6.3
Luxembourg	4.9	4.2	4.8	5.0	5.7	5.6	6.3	5.9	5.3	5.3
Latvia	17.3	19.3	16.1	14.9	11.9	10.9	9.9	9.8	8.8	7.5
Malta	5.9	6.0	5.6	5.3	5.5	5.3	4.9	4.3	3.6	3.3
Netherlands	3.8	4.4	4.4	5.2	6.7	6.9	6.4	5.5	4.4	3.4
Norway	2.6	3.1	2.9	2.8	3.0	3.3	4.0	4.3	3.8	3.4
Poland	8.1	9.5	9.5	10.0	10.2	8.9	7.4	6.1	4.8	3.8
Portugal	9.7	11.1	12.8	15.8	16.5	14.1	12.5	11.2	8.9	7.0
Romania	6.7	7.0	7.2	6.7	7.1	6.7	6.7	5.7	4.8	4.0
Sweden	7.3	7.6	6.9	7.1	7.1	7.1	6.7	6.3	6.0	5.6
Slovenia	5.8	7.3	8.2	8.9	10.2	9.8	9.0	8.1	6.6	5.1
Slovakia	11.7	14.0	13.2	13.6	13.9	12.9	11.3	9.5	7.9	6.4
United Kingdom	6.6	6.8	7.0	6.9	6.7	5.4	4.6	4.3	3.8	3.6

Source: Eurostat.

Table A6. Macro-level variables: precarious employment (% of population aged 20–64).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	0.8	0.8	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Belgium	2.5	2.4	2.8	2.6	2.6	2.7	3.0	3.2	3.5	3.5
Bulgaria	0.4	0.5	0.6	0.8	0.8	0.8	0.7	0.7	0.7	0.6
Switzerland	1.2	1.7	1.6	1.5	1.5	1.4	1.7	1.4	1.5	1.4
Cyprus	0.6	0.6	0.5	0.6	0.6	0.8	0.7	0.7	0.6	0.5
Czech Republic	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.3	0.3
Denmark	1.2	1.1	1.1	1.0	1.0	1.0	0.9	1.7	1.3	1.0
Estonia	0.7	1.2	1.3	0.9	0.9	1.0	1.0	0.9	1.1	1.2
Greece	1.4	1.7	1.7	1.8	1.8	1.8	1.7	1.5	1.4	1.3
Spain	4.0	4.1	4.2	4.1	4.5	4.7	4.6	4.5	4.6	4.2
Finland	2.5	3.5	3.4	3.4	3.4	3.3	3.4	3.6	3.4	3.5
France	4.1	4.5	4.6	4.5	3.9	4.2	4.4	4.6	4.9	4.7
Croatia	3.2	3.7	4.6	4.6	4.7	4.7	6.5	8.0	6.9	6.5
Hungary	3.6	3.8	3.8	3.4	3.6	3.5	3.5	2.1	2.1	1.9
Ireland	0.5	0.6	0.7	0.7	0.7	0.6	0.6	0.5	0.8	1.2
Iceland	3.1	3.6	3.7	4.2	3.8	3.6	3.6	3.0	2.8	2.3
Italy	1.9	2.0	2.2	2.3	2.4	2.5	2.8	3.1	3.4	3.7
Lithuania	1.0	1.4	1.8	1.4	1.3	1.4	0.9	0.8	0.7	0.7
Luxembourg	1.0	0.9	0.9	0.9	0.8	1.0	1.7	1.3	1.2	1.4
Latvia	1.3	1.9	1.9	1.4	1.6	1.2	1.5	1.4	1.1	1.1
Malta	0.5	0.5	0.7	0.7	0.9	1.1	0.7	0.7	0.6	0.4

(Continued)

Table A6. Continued.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Netherlands	0.8	0.8	0.7	0.7	0.8	0.9	1.0	0.9	0.9	0.8
Norway	0.6	0.6	0.6	0.6	0.7	0.5	0.5	0.5	0.4	0.5
Poland	3.6	4.2	4.3	4.4	4.4	4.7	4.6	4.4	3.8	3.6
Portugal	1.0	1.1	3.4	3.3	3.3	2.9	3.1	3.1	2.7	2.6
Romania	0.2	0.1	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2
Sweden	3.6	4.0	3.9	3.9	3.9	3.8	3.6	3.0	2.7	2.7
Slovenia	4.1	4.3	4.8	4.4	3.9	4.1	4.6	4.2	4.5	3.7
Slovakia	0.8	0.9	1.0	1.1	1.3	2.1	2.8	2.2	1.8	1.3
United Kingdom	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3

Source: Eurostat.

Table A7. Macro-level variables: public expenditure in active labour market policies (% of GDP).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	0.81	0.81	0.73	0.72	0.76	0.79	0.74	0.76	0.78	0.75
Belgium	0.74	0.72	0.72	0.71	0.72	0.74	0.71	0.72	0.87	0.90
Switzerland	0.56	0.60	0.55	0.54	0.56	0.56	0.58	0.61	0.61	0.59
Czech republic	0.27	0.31	0.26	0.24	0.29	0.36	0.42	0.36	0.31	0.31
Denmark	1.61	2.02	2.02	1.94	1.93	2.03	2.04	2.02	1.95	1.89
Estonia	0.23	0.22	0.22	0.28	0.23	0.19	0.21	0.30	0.41	0.47
Spain	0.85	0.92	0.88	0.65	0.52	0.56	0.59	0.57	0.69	0.71
Finland	0.87	1.00	0.97	0.98	1.00	1.05	0.99	0.98	0.98	0.94
France	0.96	1.07	0.89	0.86	0.88	0.94	0.93	0.97	0.90	0.75
Hungary	0.47	0.62	0.48	0.75	0.87	0.96	0.87	0.91	0.84	0.63
Ireland	0.82	0.90	0.90	0.89	0.86	0.78	0.56	0.51	0.42	0.36
Italy	0.45	0.42	0.40	0.45	0.42	0.37	0.49	:	:	0.42
Lithuania	0.30	0.30	0.26	0.24	0.24	0.24	0.31	0.30	0.30	0.27
Luxembourg	0.50	0.55	0.60	0.63	0.62	0.64	0.66	0.79	0.79	0.72
Latvia	0.31	0.56	0.37	0.23	0.24	0.19	0.14	0.19	0.19	0.18
Netherlands	1.09	1.09	1.01	0.87	0.82	0.82	0.76	0.71	0.64	0.59
Norway	0.59	0.62	0.56	0.53	0.50	0.51	0.52	0.53	0.47	0.42
Poland	0.61	0.68	0.41	0.43	0.49	0.48	0.46	0.44	0.42	0.36
Portugal	0.75	0.67	0.58	0.50	0.50	0.57	0.55	0.47	0.40	0.32
Sweden	0.90	1.09	1.14	1.26	1.34	1.31	1.25	1.16	1.12	1.11
Slovenia	0.34	0.50	0.35	0.27	0.37	0.37	0.24	0.24	0.25	0.23
Slovakia	0.25	0.32	0.29	0.25	0.22	0.20	0.19	0.26	0.23	0.24
United Kingdom	0.39	0.38	0.22	:	:	:	:	:	:	:

Source: OECD.