

# Low-pay work in Europe: dynamics, evolution and the role of institutional factors

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## Abstract

**Purpose** – This paper investigates the temporary or persistent nature of low-pay work in Europe. The evolution over time of low-pay state dependence is explored by considering relevant subperiods. The role of institutional factors is also examined.

**Design/methodology/approach** – The analysis is based on longitudinal sections of the European Union Statistics on Income and Living Conditions survey covering the 2003–2020 period. The authors adopt a dynamic framework to characterize the possible transitory or permanent nature of low-paying jobs. To better identify mobility and persistence, they consider the entire spectrum of labor market outcomes (non-employment, low-pay work and high-pay work), thus adopting a multinomial logit specification. The issue of initial conditions is addressed and correlated random effects are assumed.

**Findings** – The authors find that being employed, either in low-paying or standard/high-paying job, might be considered a protective factor against the risk of nonemployment. They find evidence of genuine state dependence in the majority of countries explored, with important changes in magnitude. Several countries experienced a strengthening of persistence overtime in low-pay work. Some institutional factors, such as higher minimum wage and expenditure on labor market policies, might play a role in the reduction of the persistence in low-pay conditions.

**Originality/value** – The paper stresses the relevance of exploring the entire spectrum of labor market outcomes when analyzing the transitory/permanent nature of low-pay work. It provides novel evidence on the evolution of persistence in low-pay jobs and the role of institutions in Europe.

**Keywords** Europe, Dynamic model, Persistence, Institutional factors, Low pay work

**Paper type** Research article

## 1. Introduction

Low-paid work is a long-standing phenomenon in European labor markets, but it is only in recent decades that it has increasingly attracted the interest of researchers and policy-makers. Its persistence can be explained by a combination of factors, including demographic shifts, skill-biased technological change, globalization, changes in industry composition, and broader transformations in the employment structure (e.g. [Lucifora and Salverda, 2011](#)). Low-pay work is defined as earning less than two-thirds of the median hourly wage. This definition was first introduced by the [OECD \(1996\)](#) and later adopted by Eurostat and researchers (e.g. [Lucifora et al., 2005](#); [Maitre et al., 2012](#)).

A key issue in the analysis of low-paid workers regards the transitory/permanent nature of the phenomenon. While some workers may experience low-paying jobs as occasional events, others remain trapped in this disadvantaged job position. There is debate around the stepping/trapping role of low-pay employment ([Schnabel, 2021](#)). From the perspective of the stepping



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role, low-pay work is a temporary phenomenon that is preferable to unemployment, as it may serve as a stepping stone toward high-paying positions and prevent skill obsolescence (e.g. [Knabe and Plum, 2013](#); [Cai et al., 2018](#)). The trapping role perspective stresses that some workers may experience little upward mobility, meaning that low-pay work may be a permanent phenomenon, in light of the adverse signal that it sends to potential employers and the risk of being stuck in a low-pay/non-employment cycle (e.g. [Stewart, 2007](#); [Clark and Kanellopoulos, 2013](#); [Fok et al., 2015](#); [Bavaro and Tullio, 2024](#)).

Characterizing the nature and sources of persistence in low-pay work may be important to identify and remove barriers that prevent upward mobility. One may distinguish between at least two types of factors, i.e. genuine state dependence and heterogeneity. Genuine state dependence originates from a “low-pay” scarring effect because of human capital depletion, and it identifies the causal effect of past low-pay conditions on the current probability of being a low-paid worker. Heterogeneity refers to structural differences in observable and unobservable factors. Some authors (e.g. [Schnabel, 2021](#)) have stressed that circumstances related to institutional settings, such as collective bargaining, minimum wages, labor market policies, union coverage, or other macroeconomic aspects, such as the diffusion of atypical contracts, the unemployment rate, or the share of the tertiary sector, may also play a role.

Multicountry studies on low pay are scarce, with [Gautié and Schmitt \(2010\)](#) and [Clark and Kanellopoulos \(2013\)](#) as notable exceptions. The former provides comparative evidence on how institutional frameworks shape the incidence and quality of low-wage work across countries and sectors, while the latter analyzes cross-country differences in low-pay persistence and the role of labor market institutions and macroeconomic factors.

This study proposes an analysis of low-pay dynamics in twenty-five European countries, exploiting available longitudinal sections of the European Union Statistics on Income and Living Conditions (EU-SILC) database in the 2003–2020 period (see [Borst and Wirth, 2022](#)). This dataset allows us to investigate a wide range of periods during which European economies faced the Great Recession, the implementation of austerity measures, and relevant changes in labor markets. They all potentially affected low-pay dynamics.

In line with a strand of literature (e.g. [Uhlendorff, 2006](#); [Fok et al., 2015](#)), we explore the entire spectrum of labor market outcomes (i.e. non-employment, low-pay work, high-pay work) and not just the dichotomy of low/high-paying jobs (e.g. [Clark and Kanellopoulos, 2013](#)). Doing so enables us to compare low-pay work to other available alternatives, which may be relevant considering that individuals should prefer, in turn, to take up a low-paying job or to remain unemployed and wait for a high-paying job in the future (e.g. [Schnabel, 2021](#)). This calls into question both the role of individual preferences for work and the design of unemployment benefits and social protection schemes. Consistently, we assume that the utility associated with each alternative is not intrinsically ordered, and thus, our empirical approach is based on the estimation of a dynamic multinomial logit model. For each country, we estimate the state-dependence parameter and mobility parameters across labor market states. This allows us to uncover the transitory/permanent nature of low-pay work across European countries.

Second, we learn about the evolution over time of low-pay state dependence by interacting the lagged labor market status with a variable identifying four periods in the 2003–2020 time span (pre-Great Recession, Great Recession, the Austerity era, and the post-Great Recession years). We link this interaction to the changes that characterized European countries in the analyzed period.

Finally, we provide a deeper investigation of the determinants of low-pay state dependence and other labor market transitions by exploring the role of institutional factors. We conduct two exercises. First, we pool country information in a unique European dataset and exploit geographical and time variability to estimate augmented model specifications where the lagged labor market states are interacted with indicators of labor market institutions. Second, we perform a correlation analysis between institutional factors and macroeconomic variables and estimate low-pay state dependence, in the spirit of [Clark and Kanellopoulos \(2013\)](#).

To sum up, our research questions are: (1) What is the nature (transitory or permanent) of low-pay work and what are its sources? (2) How has low-pay state dependence evolved over time across European Countries? (3) What role do institutions and macroeconomic conditions play in shaping low-pay state dependence?

The paper proceeds as follows. [Section 2](#) reviews the literature. [Section 3](#) describes the data used and conducts a descriptive analysis. The empirical model is described in [Section 4](#). [Section 5](#) discusses the main findings. [Sections 6](#) and [7](#) investigate the evolution of low-pay dynamics and the role of institutional factors and macroeconomic variables, respectively. [Section 8](#) offers some concluding remarks.

## 2. Literature

A main strand of literature on low-pay work investigates the possible transitory/permanent nature of the phenomenon ([Schnabel, 2021](#)). On the one hand, some workers might experience low-pay employment as only a temporary condition, one that might act as a stepping stone toward high-paying jobs. On the other hand, low-pay work might be a permanent condition, trapping individuals in such disadvantaged labor market states and sometimes sending a negative signal to potential employers (e.g. [Stewart, 2007](#); [Fok et al., 2015](#); [Bavaro and Tullio, 2024](#)). [Fok et al. \(2015\)](#), for example, investigated the transitions between unemployment, low-pay employment, and higher-pay employment using a dynamic approach. The results suggest state dependence in both unemployment and low-pay employment and evidence of a low-pay/no-pay cycle. Unemployment increases the likelihood of entering low-pay employment, and in turn, low-pay employment increases the likelihood of entering unemployment. [Bavaro and Tullio \(2024\)](#) explored the dynamic relationship between unemployment and low-pay employment and reported the presence of important feedback effects from past unemployment to low-paying jobs.

Low-paying jobs, in some circumstances, should be considered preferable to unemployment and might be used as a step toward better labor market states, i.e. high-paying jobs, or, again, help prevent skill obsolescence (e.g. [Knabe and Plum, 2013](#); [Cai et al., 2018](#)).

For these reasons, as suggested by the literature, when exploring low-paying jobs, it is important to consider this condition compared with other labor market states (e.g. [Uhlendorff, 2006](#); [Fok et al., 2015](#)).

Most available studies have investigated the phenomenon of low-pay work by measuring the extent to which individuals are trapped in low-paying jobs and by identifying the individual and job/labor market characteristics of such workers most strongly associated with such persistence.

However, most of these studies explored one or two countries. For example, [Sloane and Theodossiou \(1998\)](#) in the UK reported that being young, highly educated, and married are individual characteristics that are positively associated with the probability of exiting a low-pay labor market condition. In contrast, [Asplund et al. \(1998\)](#) in Denmark and Finland, and similarly [Cappellari \(2000\)](#) in Italy reported that the effect of individual characteristics is not as important as that of job characteristics. In a more recent work on Italy, [Bavaro and Tullio \(2024\)](#) relaunched the relevance of individual characteristics.

One of the few attempts to analyze the low-pay phenomenon in many countries is the study by [Clark and Kanellopoulos \(2013\)](#). Their work explores whether low-pay persistence reflects true state dependence or heterogeneity in twelve European countries using data from the 1994–2001 European Community Household Panel (ECHP). They use a dynamic random effects probit framework accounting for initial conditions and unobserved heterogeneity. Measures of state dependence are also related to a range of institutional and labor market features. Their findings suggest that being trapped in a low-pay condition is not the result of genuine state dependence. It reflects, instead, differences between workers in productive abilities.

A different strand of literature focuses on the existence of an interrelation between low-pay labor market status and (in-work) poverty. Some studies confirm that in the European Union, a substantial proportion of those in poverty are employed but earn relatively low wages (see, for instance, [Bardone and Guio, 2005](#)). Although the low-pay labor market condition and in-work poverty are theoretically two distinct concepts, it is clear that an increasing proportion of a country's workforce in low-paying jobs will increase the risk of poverty at the household level ([Maitre et al., 2018](#); [Mussida and Sciulli, 2025](#)).

### 3. Data

Our data are from the EU-SILC survey, which is conducted in most European Union countries by the relevant national institutes of statistics using harmonized definitions and survey methodologies.

We explore EU-SILC longitudinal data files covering the 2003–2020 period. Since each longitudinal data file in the EU-SILC survey covers four years and follows a rotational design, we decided to use more data files to cover a longer period of time. We followed the methodology suggested by [Borst and Wirth \(2022\) \[1\]](#) to obtain a unique longitudinal dataset for twenty-five European countries [\[2\]](#) on the basis of data availability and consistency in the adopted rotation scheme. Specifically, the period available changes across countries, but in the majority of them, it is from 2005 to 2020 [\[3\]](#). The advantage of using this methodology is that we can investigate the phenomenon over a longer period. This is not a pure panel, but we adopt the same selection criteria for the sample in each four-year period panel file. For each subperiod, i.e. the four-year period, our sample includes individuals of working age, i.e. those aged 20–63 years, and interviewed in at least three of the four successive waves ( $T \geq 3$ ).

We estimate the equation for the employment outcomes by adopting a generalized structural equation model with a dynamic framework by using a multinomial logit as the link function (see [Section 3](#)). The dependent variable includes the following outcomes: non-employment (unemployment and inactivity, our base category), low-paid employees, and high-paid employees. Low-paid workers are defined as workers with a wage below the two-thirds of the median hourly wage threshold [\[4\]](#), whereas high-paid workers are those with a wage higher than this low-pay threshold. [Figure A1](#) in the [Appendix](#) reports the evolution (long period investigated) of the observed low-pay share (incidence of low-paid workers over total employment) by country. There are important heterogeneities across the countries explored in the incidence of low-pay work [\[5\]](#). We have a group of countries with relatively low rates, i.e. lower than or equal to 10%: Austria, Belgium, Finland, Norway, and Sweden; a group with an average share of 20%: Bulgaria, Hungary, Poland, Germany, Romania, and the UK; and Latvia, with the highest share, 30%, on average. We also observe differences in the evolution of the indicator. There was an increase in Norway and Bulgaria, whereas the share decreased in Latvia, Poland, and Portugal. In contrast, the incidence of low pay remained almost unchanged in Germany, Finland, France, Sweden and the UK. These discrepancies, which are due, for instance, to different labor markets, welfare states, and, more generally, institutions, stimulated our investigations of low-pay dynamics separately by country.

As for covariates, we control for individual and household characteristics. The former include age (split into age ranges, considering the overall 20–63 age group), gender, education, and consensual union (whether on a legal basis or not). Among household characteristics, we consider whether the individual is the head of household, single, home ownership, the presence of children of different age ranges ([0–3] and [4–15] years) in the household, the number of disabled and elderly (able) persons (aged 65 years or over), the presence of other household members employed (employee or self-employed), the income of the other members of the household (other than individual labor income), as well as its squared. Finally, we control for the geographical area of residence (where available), and yearly dummy variables. Descriptive statistics are reported in the [Appendix Tables A2a and A2b](#).

#### 4. The econometric approach

We analyze the transitory/persistent nature of the low-pay work phenomenon by adopting a dynamic framework for microeconomic data. This enables us to compare low-pay employment with all alternative labor market states, including unemployment and inactivity. Thus, we start by studying the mobility between three labor market states, i.e. non-employment (*N*), low-pay work (*L*), and high-pay work (*H*), and we estimate the transition probabilities *p* between the three possible states from period *t*-1 to period *t*. The corresponding transition matrix *M* reads as follows:

$$M = \begin{pmatrix} p_{NN} & p_{NL} & p_{NH} \\ p_{LN} & p_{LL} & p_{LH} \\ p_{HN} & p_{HL} & p_{HH} \end{pmatrix} \quad (1)$$

where the elements on the main diagonal identify persistence, whereas the others identify mobility across states. We assume that the underlying process is a first-order Markov chain and that the related latent propensity  $l^*$  of an individual *i* being in state *j* in period *t* is:

$$l_{ijt}^* = \gamma_j l_{ijt-1} + \beta x_{it} + \delta z_i + \alpha_{ij} + v_{ijt} \quad (2)$$

The observed labor market state can be derived from the following discrete choice model, where an individual *i* derives the utility associated with *l* from labor market state *j* at time *t*:

$$l_{it} = j \text{ if } l_{ijt}^* = \max_k (l_{ikt}^*) \text{ for } j, k = 0, 1, 2; j \neq k; i = 1 \dots N; t = 2 \dots T \quad (3)$$

where  $l_{ijt} = (l_{i0t}, l_{i1t}, l_{i2t})$  is a column vector that contains value *j* corresponding to the labor market state of individuals at time *t* and zero otherwise.  $l_{ijt-1}$  is the lagged labor market state variable; and  $x_{it}$  and  $z_i$  are vectors of strictly exogenous time-variant and time-invariant individual and household characteristics, respectively.  $\gamma$  is a vector of state dependence parameters, while  $\beta$  and  $\delta$  are vectors of parameters related to the covariates and to be estimated. The term  $\alpha_i$  represents the unobserved time-invariant individual effects for the analyzed process, while  $v_{it}$  are identically and independently distributed error terms. We assume that it has been drawn from a Type-1 extreme value distribution. This assumption implies that the labor market state probabilities correspond to the multinomial logit probability, both of which are conditional on past observed status, covariates, and unobserved heterogeneity terms.

The assumption of a multinomial outcome reflects the assumption that the utility associated with each alternative is not intrinsically ordered, thus leaving free the individual to prefer non-employment to low-pay work and *vice versa*.

Because of the dynamic structure of the model and the possibility that the start of the observed data does not coincide with the start of the analyzed process, an initial conditions problem arises (Heckman, 1981). We address this problem by adopting the Wooldridge method (2005), which involves the use of an alternative conditional maximum likelihood (CML) estimator that considers the distribution conditional on the value in the initial period. In addition, we incorporate the Mundlak method (1978) to relax the assumption that individual-specific random effects are independent of other covariates, thus assuming correlated random effects. Such modeling allows us to distinguish between spurious effects due to unobserved heterogeneity and the genuine effects of lagged outcome variables, i.e. state dependence.

Formally, the auxiliary model for unobserved heterogeneity reads as:

$$\alpha_{ij} = \theta_0 + \theta_1 l_{ij1} + \theta_2 \bar{x}_i + \mu_{ij}, \quad (4)$$

where  $l_{ij1}$  is the labor market state at time 1, while  $\bar{x}_i$  is a set of time-averaged time-variant control variables calculated from periods 2 to T.  $\theta_0$ ,  $\theta_1$ , and  $\theta_2$  are sets of parameters to be estimated. Finally, the term  $\mu_{ij}$  reflects the residual unobserved heterogeneity, which is assumed to be independent of the initial values, covariates and error terms specified in Equations (2) and (3).

Finally, because the estimated coefficients describe the sign of the relationship but are inappropriate for determining the magnitude of the impact between the outcome and explanatory variables, we compute and report average marginal effects (AMEs).

## 5. Results

The results for mobility/persistence under the conditions of non-employment, low-pay work, and high-pay work are reported in Tables 1–3.

Table 1 shows the AMEs for the non-employment state by country. Notably, both a previous condition of low-pay work and a previous condition of high-pay work are negatively associated with the (current) probability of non-employment. This finding suggests that being employed, either in a low-paying job or in a high-paying job, might be considered a protective factor against the risk of non-employment, i.e. unemployment or inactivity. The AMEs are negative and significant for all the countries explored with varying magnitude. For the transition from low-pay work to non-employment (first column of Table 1), the AMEs range from –9 p.p. in the UK to –68.1 p.p. in France. The same ranking is found for the movements

**Table 1.** Non-employment state at time t by country

	Low-pay time t-1		High-pay time t-1	
	AME	s.e.	AME	s.e.
Austria	–0.342	0.070***	–0.365	0.070***
Belgium	–0.629	0.033***	–0.652	0.032***
Bulgaria	–0.412	0.071***	–0.403	0.072***
Croatia	–0.484	0.068***	–0.488	0.070***
Czechia	–0.576	0.029***	–0.583	0.029***
Denmark	–0.269	0.056***	–0.289	0.058***
Estonia	–0.491	0.048***	–0.494	0.048***
Finland	–0.111	0.015***	–0.110	0.014***
France	–0.681	0.101***	–0.683	0.100***
Germany	–0.128	0.049***	–0.116	0.048**
Greece	–0.341	0.030***	–0.422	0.034***
Hungary	–0.286	0.030***	–0.314	0.031***
Ireland	–0.278	0.059***	–0.328	0.063***
Italy	–0.229	0.023***	–0.261	0.027***
Latvia	–0.374	0.055***	–0.364	0.058***
Lithuania	–0.473	0.065***	–0.475	0.066***
Norway	–0.361	0.054***	–0.392	0.055***
Poland	–0.647	0.033***	–0.656	0.034***
Portugal	–0.157	0.011***	–0.143	0.007***
Romania	–0.274	0.048***	–0.282	0.048***
Slovak Republic	–0.284	0.028***	–0.262	0.027***
Slovenia	–0.247	0.050***	–0.257	0.051***
Spain	–0.226	0.021***	–0.211	0.020***
Sweden	–0.177	0.047***	–0.188	0.048***
UK	–0.090	0.019***	–0.100	0.018***

**Note(s):** We control for the set of covariates described in Section 3, including regional (where available) and year dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Source(s):** Authors' calculations from 2003–2020 EU-SILC data

**Table 2.** Low pay state at time t by country

	Low-pay time t-1		High-pay time t-1	
	AME	s.e.	AME	s.e.
Austria	0.032	0.016*	-0.001	0.015
Belgium	0.067	0.014***	0.025	0.010*
Bulgaria	0.208	0.034***	0.095	0.029***
Croatia	0.173	0.034***	0.056	0.023*
Czechia	0.198	0.010***	0.090	0.007***
Denmark	0.016	0.016	-0.029	0.015**
Estonia	0.267	0.021***	0.060	0.019***
Finland	0.025	0.011**	-0.018	0.009**
France	0.143	0.012***	0.064	0.011***
Germany	0.074	0.039*	0.013	0.037
Greece	0.146	0.015***	0.023	0.008***
Hungary	0.109	0.013***	0.032	0.010***
Ireland	0.082	0.020***	0.043	0.016***
Italy	0.071	0.011***	0.014	0.009
Latvia	0.215	0.028***	0.110	0.028***
Lithuania	0.269	0.031***	0.096	0.027***
Norway	-0.021	0.017	-0.064	0.017***
Poland	0.255	0.019***	0.069	0.015***
Portugal	0.086	0.010***	0.004	0.003
Romania	0.168	0.025***	0.017	0.014
Slovak Republic	0.168	0.019***	0.070	0.013***
Slovenia	-0.041	0.030	-0.090	0.028***
Spain	0.102	0.014***	0.027	0.010***
Sweden	0.033	0.023	-0.022	0.022
UK	0.095	0.015***	0.072	0.012***

**Note(s):** We control for the set of covariates described in Section 3, including regional (where available) and year dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Source(s):** Authors' calculations from 2003–2020 EU-SILC data

from high-pay work to non-employment (second column of Table 1): the AMEs range from -10 p.p. in the UK to -68.3 p.p. in France.

In Table 2, we present the results for low-pay work. In the first column, we find the AME for the persistence/state dependence in the state. There are important heterogeneities across countries. First, persistence in low-pay work is not an issue for three Nordic countries, i.e. Denmark, Norway, and Sweden (and relatively low in Finland), with the addition of Slovenia (Central Europe). The AME associated with a low-pay condition in the previous period is not significant in these countries [6].

This finding for Nordic countries can be attributed to several factors associated with the prevailing economic and social models, such as welfare systems, institutions, and the labor market. Some evidence for these countries supports the view that individuals on temporary low-paid contracts increase their chances of integration with a permanent contract (see, for instance, Svalund and Berglund, 2018, for Norway and Sweden).

For the remaining countries, there is evidence of state dependence, with the magnitude of the AME ranging from +2.5 p.p. in Finland to +26.9 p.p. in Lithuania. The presence of state dependence/persistence in low pay has also been reported in the literature. Clark and Kanellopoulos (2013), for instance, reported persistence in all twelve European countries that they explored. Among the effects of remaining in low-pay work are the fact that some workers may experience little upward mobility, as permanence in a low-pay condition might be interpreted as an adverse signal to potential employers and the risk of being stuck in a low-pay/non-employment cycle (e.g. Stewart, 2007; Fok et al., 2015).

**Table 3.** High pay state at time t by country

	Low-pay time t-1		High-pay time t-1	
	AME	s.e.	AME	s.e.
Austria	0.310	0.063***	0.366	0.065***
Belgium	0.562	0.032***	0.627	0.032***
Bulgaria	0.204	0.053***	0.308	0.057***
Croatia	0.311	0.054***	0.432	0.061***
Czechia	0.378	0.030***	0.493	0.031***
Denmark	0.253	0.052***	0.318	0.056***
Estonia	0.224	0.039***	0.434	0.039***
Finland	0.086	0.014***	0.128	0.015***
France	0.538	0.094***	0.619	0.093***
Germany	0.053	0.026**	0.103	0.029***
Greece	0.195	0.024***	0.399	0.033***
Hungary	0.176	0.025***	0.283	0.028***
Ireland	0.196	0.056***	0.285	0.063***
Italy	0.157	0.019***	0.247	0.025***
Latvia	0.159	0.036***	0.254	0.038***
Lithuania	0.204	0.058***	0.379	0.059***
Norway	0.383	0.046***	0.456	0.048***
Poland	0.392	0.035***	0.587	0.035***
Portugal	0.070	0.011***	0.139	0.007***
Romania	0.106	0.036***	0.265	0.042***
Slovak Republic	0.116	0.019***	0.192	0.020***
Slovenia	0.288	0.037***	0.346	0.040***
Spain	0.124	0.015***	0.184	0.017***
Sweden	0.144	0.042***	0.210	0.045***
UK	-0.005	0.015	0.029	0.016*

**Note(s):** We control for the set of covariates described in Section 3, including regional (where available) and year dummies. \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Source(s):** Authors' calculations from 2003–2020 EU-SILC data

In the second column, we present the estimates for the transition from high-pay work to low-pay work. We observe relevant differences across countries. For some, the estimated AME is not significant, i.e. Austria, Germany, Italy, Portugal, Romania, and Sweden. For others, such as Denmark, Finland, Norway, and Slovenia, there is a negative association between the two conditions. That is, being a high-paid worker reduces the risk of moving to a low-pay condition. For the remaining countries, which constitute the majority, being a high-paid worker increases the likelihood of moving to a low-pay work. The AME ranges from +2.3 p.p. for Greece to +11 p.p. for Latvia. Among the reasons behind a transition from a high- to a low-pay job we found that some workers, especially female, might purposely choose to take up a lower-paid job to ease the conciliation between work and family duties of females. For others, poor individual characteristics, i.e. low education, and/or poor working conditions, i.e. temporary job or part-time contract, might be the causes of the shift [7].

Table 3 reports the AME for the high-pay work status. In the first columns, we note the presence of a stepping-stone effect of low-pay work to high-pay work. The AME associated with the transition from the low-pay condition to the high-pay condition is positive and significant in all countries except the UK. The magnitude of the effect is quite heterogeneous across countries, ranging from 5.3 p.p. in Germany to 56.2 p.p. in Belgium. This evidence confirms the literature that suggests that low-pay work might be a temporary condition/state that acts as a stepping stone toward high-paying positions and that it may prevent skill obsolescence (Knabe and Plum, 2013; Cai *et al.*, 2018). The second column of Table 3 shows an important persistence in the high-pay work condition, which is significant in all the countries explored and ranges from 2.9 p.p. in the UK to 62.7 p.p. in Belgium.

Finally, we stress that even though transitions across states, in principle, may be determined by marginal or even no change at all of wages levels, we actually observe substantial variations for individuals changing pay status [8]. This is particularly true for individuals who move from low-pay to high-pay work, which represent around 40–50% of individuals starting from a low-pay position.

## 6. The evolution of low-pay dynamics in European countries

In this section, we conduct an additional exercise to describe the evolution of low-pay dynamics in the European countries explored (Figure 1). We split the period under investigation (2003–2020) into four subperiods: (1) the pre-Great Recession period (2003–2007), (2) the Great Recession period (2008–2009), (3) the Austerity measures period (2010–2014), and (4) the post-Great Recession period (2015–2020). The analysis covers 23 countries, as Germany and Croatia were excluded due to insufficient data availability in terms of years and indicators. Doing so enables us to uncover how the persistent/transitory nature of low-pay work evolved over time. The red line refers to the low-pay state dependence in each of the four periods analyzed here. The blue line represents the transition from non-employment to low-pay work, whereas the green line the transition from high-pay to low-pay work. Focusing on the red line, we note important heterogeneities in the evolution of low-pay state dependence. Several countries have experienced a strengthening of state dependence, meaning that low-pay work has become increasingly persistent over time. This has taken place especially in Bulgaria, Czechia, Spain, and Ireland. In some of these countries, the increase is concentrated in the Great Recession/Austerity measures periods (e.g. Czechia and Spain), whereas in other countries, the state dependence parameter gradually increased [9]. Another group of countries underwent a fluctuation of state dependence, without indicating a substantial change in state dependence between the pre- and post-Great Recession periods. This is the case for Greece (which shows a peak corresponding to the Great Recession period), Italy, Norway, and Poland. Finally, while Hungary and the UK [10] experienced a slight decrease in state dependence, Portugal showed a significant reduction. Some studies, such as Silva *et al.* (2018), suggest that despite the regulated wage bargaining system, wages in Portugal are relatively flexible. This, together with the important employment losses subsequent to the Great Recession, helps explain the relevant drop in low-pay state dependence (Carneiro *et al.*, 2014).

Finally, Figure A2 (see the Appendix) shows a graph that highlights how the probability of transiting from low-pay work to high-pay work (red line) evolved over the periods explored.

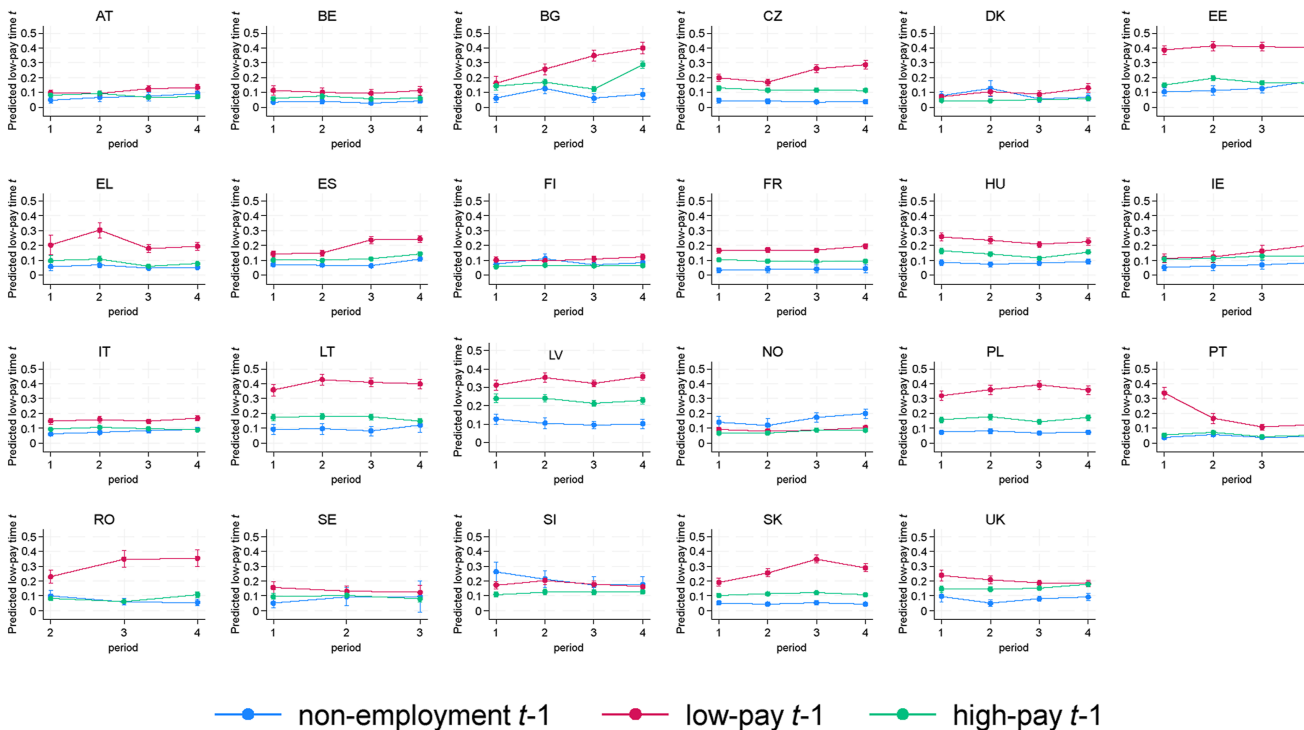
## 7. The role of institutional factors

This section proposes a comparative analysis to uncover whether and how countries cluster together, as suggested by various theories, such as varieties of capitalism (Hall and Soskice, 2001), employment regimes (Gallie, 2007), welfare regimes (Esping-Andersen, 1990), and power-resource theory. Such comparative approaches may explain the incidence of low pay through different mechanisms, such as liberal versus coordinated markets, segmentation, redistribution, and welfare generosity, or the political and organizational power of labor.

We conduct a microeconomic and macro-level exercise to explore the role of institutional factors and macroeconomic variables in low-pay state dependence and in other labor market transitions. In Section 7.1, we analyze the interaction between four indicators of labor market institutions and lagged labor market status, whereas in Section 7.2, we offer a macroeconomic correlation analysis (e.g. Clark and Kanellopoulos, 2013) between lagged low-pay state dependence and many institutional. Finally, we offer some reflections (Section 7.3).

### 7.1 Low-pay dynamics and institutional factors

In this exercise, we collapse the information for 23 countries into a unique dataset to exploit geographical and time variations, to identify the effect of labor market institutions on low-pay



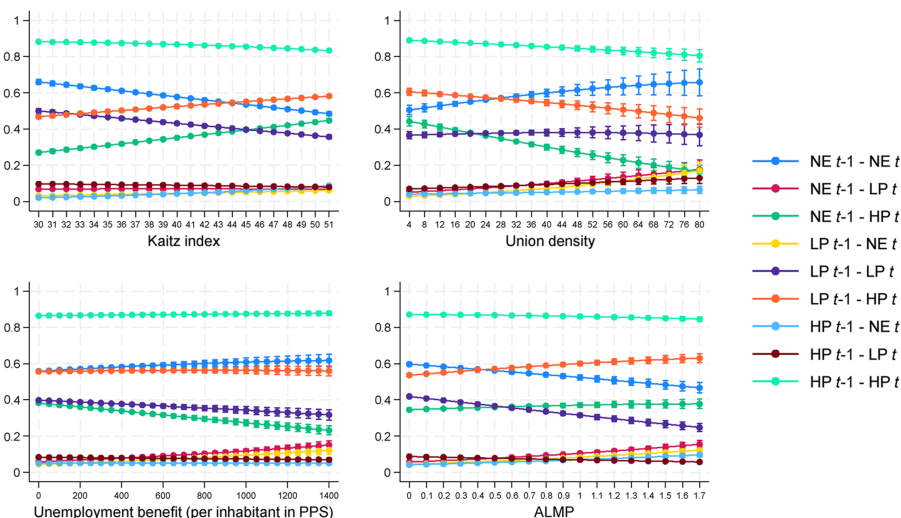
**Figure 1.** The evolution of low-pay dynamics: being low-pay at time  $t$ . Source: Authors' calculations from 2003–2020 EU-SILC data

dynamics. The evidence on how institutions shape low-pay work across developed economies remains relatively scarce (i.e. [Pineda-Hernández et al., 2022](#)). With this objective, we run an augmented model specification where the lagged labor market status interacts with four indicators of labor market institutions.

We consider the following indicators: the Kaitz index, the trade union density index, the level of unemployment benefits, and the expenditure on active labor market policies (ALMPs). Data discontinuity and, in some cases, scarce variability over time limit the analysis of further indicators. The Kaitz index expresses the monthly minimum wage as a proportion of average monthly earnings for employees in all sectors or, at least, most sectors [11]. The trade union density index is the ratio between the number of wage earners who are trade union members and the total number of wage earners. Unemployment benefits are in PPS average values for recipients, as calculated from the information on social protection benefits (unemployment function). Finally, ALMPs refer to the expenditure (relative to GDP) on measures covering interventions that provide temporary support for groups that are disadvantaged in the labor market. The first two indicators are taken from OECD statistics, whereas the last two are from Eurostat statistics.

Our results are plotted in [Figure 2](#). For the sake of brevity, we focus on selected labor market transitions.

We find that a higher Kaitz index is associated with a lower probability of persisting both in low-pay jobs and in non-employment. In contrast, the probability of moving toward high-pay work increases for individuals who were either not employed or were in a low-pay status at time  $t-1$ . The transition from non-employment to low-pay work shows a modest increase. Theoretical models stressed that the minimum wage, as well as trade union density, compresses the wage distribution. In a competitive labor market, a minimum wage set above the market-clearing level increases the equilibrium wage level and reduces employment. This outcome may result in a displacement of low-paid workers and the entry of other workers into the labor market at the minimum wage level. The employment effects are more mixed in non-competitive labor markets, according to the setting of the minimum wage level. At the empirical level, [Cengiz et al. \(2019\)](#) in the U.S. reported that increases in minimum wage levels produced modest effects on the overall number of low-wage jobs. In addition, the direct effect of the minimum wage on average earnings was amplified by modest wage spillovers at



**Figure 2.** Low-pay dynamics and institutional factors. Source: Authors' calculations from 2003–2020 EU-SILC data, OECD and Eurostat Statistics

the bottom of the wage distribution. Evidence from Germany (i.e. [Dustmann et al., 2022](#)) stressed that the minimum wage raises wages and does not lower employment, leading to a reallocation of low-wage workers from small, low-paying firms to larger, higher-paying firms.

As for the role of trade union density, we note that persistence in low-pay work remains substantially unchanged, whereas the probability of remaining in non-employment increased. The probability of upward mobility along the wage distribution (moving from low-pay work to high-pay work or from non-employment to high-pay work) decreases as trade union density increases. Finally, we note an increase in the probability of moving from non-employment to low-pay work. These results are suggestive of an equalizing role of trade union density, especially at the bottom of the wage distribution, whereas transitions toward high-paying positions appear limited. This result only partially matches theoretical predictions. These predictions suggest that unionized workers have higher average wages and smaller variance than nonunionized workers do because the former are a more homogenous group and because unionized firms offer lower payoffs for skills ([Boeri and van Ours, 2021](#)). At the empirical level, there is no direct evidence of a relationship between low-pay dynamics and union density. However, [Benassi and Vlandas \(2022\)](#) show that nonunion members are more exposed to the risk of low pay in highly unionized sectors, whereas increasing union density has a significant negative effect on individual low-pay risk during job spells ([Svarstad, 2024](#)).

We note a decrease in the probability of persisting in low-pay work corresponding to higher unemployment benefits, whereas the probability of moving from low-pay work to high-pay work remains unchanged. Interestingly, we note an increase in the probability of moving from low-pay work to non-employment. Finally, the probability of being trapped in non-employment is slightly higher where unemployment benefits are higher. These results well match theoretical predictions. In principle, higher benefits, followed by increasing reservation wages, may reduce the probability of individuals accepting low-paying jobs, thus increasing the probability of persisting in non-employment. In addition, improving the fallback option may increase wage claims and the wages required to deter shirking ([Boeri and van Ours, 2021](#)), which may increase the probability of moving from low-pay work to non-employment.

Finally, we note that higher levels of expenditure on active labor market policies are associated with lower persistence in low-pay work and non-employment. In contrast, the probability of moving toward high-pay work (both from non-employment and low-pay work) increases for higher ALMPs levels. The probability of moving from non-employment to low-pay work also increases. These results also match the theoretical and empirical evidence. Theory suggests that active labor market policies can potentially reduce unemployment by increasing the job-finding rate and helping workers obtain better jobs, including high-skilled jobs, through training ([Schnabel, 2021](#)). In addition, the probability of moving from low- to higher-paying jobs is higher for workers who have received training or vocational courses ([Clark and Kanellopoulos, 2013](#)) and, in particular, for those who receive on-the-job training ([Blázquez Cuesta and Salverda, 2009](#)).

### *7.2 Correlation analysis of low-pay state dependence and institutional and macroeconomic factors*

We reconduct [Clark and Kanellopoulos's \(2013\)](#) analysis of the relationship between institutional factors and macroeconomic variables with low-pay state dependence, providing evidence based on more countries and a more recent and longer period. The reference value for each indicator corresponds to the average of the values observed year by year in the period under investigation. Thus, the correlations reflect the variability of low-pay persistence because of country variations in institutional factors. The results are summarized in the [Appendix \(Figure A3\)](#) through 14 graphs, where the AMEs of the lagged low-pay variable in the low-pay outcome are associated with the abovementioned indicators. Overall, we confirm the results from the microeconomic exercise presented in [Section 7.1](#). Some indicators are positively related to lagged low-pay variables, whereas others are negatively correlated. The

former suggests that a greater value in the indicator is associated with more persistent low-pay conditions. The latter indicates that a higher value of the indicator is associated with more transitory low-pay conditions. The slope is a possible indicator of the intensity of the relationship.

Examining [Figure A3](#), we find a positive correlation of low-pay state dependence with the index of the strictness of employment protection legislation (EPL), with the indicator of earnings inequality (as measured by the p90/p10 ratio of the earnings distribution), with income inequality (as measured by the Gini index) and with the level of long-term unemployment (LTU). The slope of the correlations varies across indicators, and it is stronger for the inequality measures. These results suggest that stronger earnings and income inequality are associated with a more persistent low-pay phenomenon. The positive correlation between the p90/p10 ratio and low-pay state dependence possibly suggests that higher inequality, by determining higher gaps between low-pay work and the low-pay cut-off, makes upward mobility more difficult. The positive association with EPL may be coupled with the negative association of low-pay state dependence with the share of temporary employment. The results suggest that more labor market rigidity is detrimental to the transitory low-pay phenomenon reflects the higher job turnover characterizing flexible labor markets.

Low-pay state dependence is negatively associated with several labor market institutions affecting the wage distribution, such as collective bargaining coverage and union density. The relationship with the Kaitz index is also negative but weaker. All this evidence is suggestive of the positive role of wage protection in the transitory low-pay phenomenon and partly matches the results in [Section 7.1](#).

Macroeconomic evidence related to active and passive labor market policies is also consistent with the microeconomic evidence on ALMPs ([Section 7.1](#)). This stresses the importance of policies aimed at contrasting skill obsolescence and training to prevent persistent low-pay conditions. The importance of social measures to combat the persistent low-pay phenomenon is confirmed by the general indicator based on the percentage of total social expenditure relative to GDP.

We find that low-pay state dependence is negatively correlated with the share of part-time employment, the net replacement rates in unemployment, and the tax wedge. The former is coupled with the abovementioned negative association of low-pay state dependence with the share of temporary employment. However, while these results suggest that they both prevent persistent low-pay conditions, they are not conclusive about the upward/downward mobility role of atypical contracts. Finally, the negative correlation of low-pay state dependence with the net replacement rate, in line with the microeconomic evidence, indicates that more generous unemployment benefits may make individuals more prone to leave low-pay work for unemployment, thus reducing persistent low-pay conditions.

### *7.3 Some additional reflections*

Overall, our results tend to match better the employment regimes theory ([Gallie, 2007](#)), according to which it is possible to identify three broad clusters, i.e. inclusive, market, and dualist countries. The former refers to coordinated economies, with strong welfare states and active labor market policies, as in the Nordic countries. They usually show higher job quality and lower incidence of low-pay work. Market regimes are found in liberal market economies, such as the UK and Ireland, that are usually characterized by weaker collective bargaining, greater flexibility, and weaker welfare systems. Despite the wider wage dispersion, they are characterized by a moderate level of low-pay work and greater upward mobility when compared to dualist countries. These latter are referred to as Southern European economies and some continental countries. Their labor markets are significantly segmented and characterized by persistent inequalities, with a high incidence of low pay and precarious work, and weaker protections for disadvantaged groups.

## 8. Conclusions

In broad terms, our investigation suggests that being employed, either in a low-paying or in a high-paying job, might be considered a protective factor against the risk of non-employment. If we consider low-pay work, for the majority of the countries explored, we find evidence of genuine state dependence, with a magnitude and an evolution that vary importantly across countries. Several countries have experienced a strengthening of state dependence over time in low-pay work, whereas a few countries (e.g. Hungary, Portugal, and the UK) have experienced a decrease, thus suggesting an overall widening of the phenomenon in Europe.

For state dependence in low-paying jobs, our microeconomic and macro-level correlation analyses offer interesting and consistent insights into the possible role of selected institutional factors and macro variables.

From the microeconomic investigation, we found a negative role of the Kaitz index, i.e. a higher minimum wage level, and (expenditure on) active labor market policies in persistence in low-paying jobs. Notably, we also found a “discouraging role” of unemployment benefits in that they increase the likelihood of moving from low-pay work to non-employment. In contrast, trade union density did not affect persistence.

The macrolevel correlation exercise suggests that among the factors positively associated with persistence in a low-pay condition, there are stronger earnings and income inequality; additionally, the level of employment protection legislation matters. The factors contributing to the reduction in low-pay persistence include the share of temporary employment, collective bargaining coverage and union density, as well as social expenditure on both active and passive labor market policies. Therefore, both suggest a clear role for some institutions. Social expenditure on labor market policies, especially active policies, should reduce persistence in a condition of low-pay work. This stresses the relevance of interventions aimed at combating skill deterioration and obsolescence by, for instance, offering training or vocational courses. Our findings also help reveal a role for the minimum wage. An increase in the minimum wage, for instance, might motivate low-paid workers to invest in career advancement opportunities, such as training and/or education programs, to qualify for higher-paying jobs. Therefore, the joint role of social expenditure on labor market policies and increased minimum wages might help low-paid workers break the vicious cycle of persistent low-paying work opportunities.

All in all, our results seem to match better the predictions of the “employment regimes” theory, according to which inclusive regimes reduce low pay most effectively, while dualist regimes perform worst.

Notably, our estimates also suggest that for many of the countries explored, being a high-paid worker does not prevent the risk of a movement to a low-pay condition (high-pay/low-pay transition). Finally, we find evidence of a stepping-stone effect of low-pay work to high-pay work in all countries (except the UK).

Both low- and high-pay jobs act as protective factors against the risk of non-employment. However, labor market perspectives on low-pay work are heterogeneous across population sub-groups, as it can represent a stepping stone to high-pay employment for some workers, while remaining a persistent state for others.

These results stress both the importance of exploring the entire spectrum of labor market outcomes and considering the specific characteristics and preferences of each population subgroup.

## Notes

1. Available online at: <https://www.gesis.org/gml/european-microdata/eusilc/>. For an application, see: Barbieri *et al.* (2024).
2. Austria, Belgium, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the UK. Details on observations and available years are reported in the [Appendix \(Table A1\)](#).
3. Germany is an exception, with data available from 2015 to 2019.

4. We rely on a national-level threshold that allow comparing the phenomenon of low-pay work across the European countries explored (i.e. [Lucifora et al., 2005](#); [Maitre et al., 2012](#)). As the EU-SILC data are not fully representative at the sub-national level and cost-of-living indices within countries are often unavailable or inconsistent, we avoid applying regional price indices that could introduce further bias or measurement error. Geographic controls are included in our models to account for potential regional variation/heterogeneity at the regional level.
5. We use the official personal cross-sectional weight (RB060 variable in the EU-SILC code) to ensure the representativeness (national population) of our samples.
6. We run an alternative analysis identifying low-pay and high-pay positions in terms of annual earnings. As expected, this determines a rise in low-pay incidence because of the contribution of fewer annual working hours of part-time and temporary employment. Our estimates reveal that low-pay persistence is smaller, presumably because of the double sources of variability in earnings dynamics, i.e. hourly wages and working hours. For the sake of brevity, such results are available upon request.
7. We compared the individual characteristics of those moving from a high-to-a low-pay job with the ones of those remaining high-pay workers. On average, those changing status were more frequently female, low educated and with poor working conditions (temporary job and/or part-timers).
8. We plotted the wage distribution for individuals remaining in low-pay work and compare them to those that moved to high-pay work. We find the latter are significantly positioned to the right of the former. Related graphs are available upon request.
9. From [Figure 1](#), we note that the most important increase in all periods occurred in Bulgaria. This result should be due to both the increase in minimum wages and the Great Recession, which reduced the opportunities to escape the condition of being a low-paid worker (i.e. [Stoilova, 2016](#)). This was also the case for Poland but to a lesser extent.
10. For the UK, [Gregg et al. \(2014\)](#) documented an unprecedented drop in real wages after the Great Recession, which may be explained by the rising earnings inequality in the pre-Great Recession period and the extremely poor productivity record associated with low wages.
11. The data cover all member states and the candidate countries where a national minimum wage is applied.

### Supplementary material

The supplementary material for this article can be found online.

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