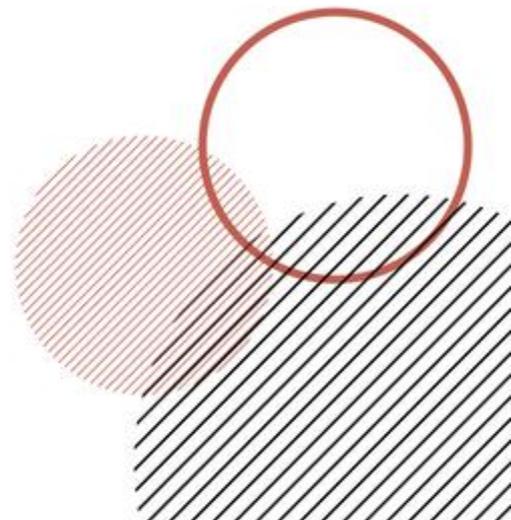


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In-work poverty in Europe: levels and determinants from a longitudinal perspective

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Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime.
Lao Tzu, VI Century B.C.

Abstract

This paper investigates levels and determinants of in-work poverty (IWP) in Europe using EU-SILC data for 2004–2015. First, we make a cross-country comparative analysis of IWP risk for different social groups considering individual labour market position and household employment pattern. Second, we examine the social class gradient in exposure to IWP. Third, we investigate drivers and patterns of longitudinal accumulation of poverty spells. Even if individual non-standard labour market conditions play a role in increasing IWP risk, the lion's share of IWP dynamics are shaped by household-level work intensity. One (standard) earner is often no longer enough to keep families out of poverty, confirming the importance of dual-earner household arrangements even if they involve non-standard employment conditions for one earner. This holds particularly true for countries with high IWP rates (e.g. Southern Europe) and less privileged social and occupational groups across countries. Analysing IWP inertia, we test for the interplay between (net) genuine state dependence (GSD) and unobserved heterogeneity in the accumulation of economic disadvantage over time. We find that previous IWP causally drives future IWP accumulation and document GSD stratification across social groups, with implications for social stratification of risk and policies designed to combat poverty accumulation.

Keywords: in-work poverty; low pay; household employment patterns; work intensity; genuine state dependence; EU-SILC

1. Introduction

Employment is among the most important factors in protecting individuals and their families against economic poverty. Acknowledging the very close link between poverty and employment (Copel and Daly 2012; De Graaf-Zijl and Nolan 2011), the European Union (EU) Europe 2020 targets use households' low work intensity as one of the main risk dimensions in their definition of poverty. Nonetheless, the non-negligible share of individuals who are poor notwithstanding employment – so-called 'in-work poverty' (IWP), or more precisely 'in work and at risk of poverty' – had become a structural phenomenon well before the COVID-19 pandemic (Eurofond 2017; European Commission 2011). According to Eurostat (2018), in 2016, nearly one-tenth (9.2%) of EU workers between the ages of 18 and 64 were at risk of poverty after social transfers. In fact, in most EU countries, IWP rates had already moderately risen before the 2009 financial crisis, a phenomenon that has attracted increasing scholarly attention in recent years (Horemans *et al.* 2016; Lohmann 2009; Lohmann and Marx 2018). The presence of IWP therefore constitutes a central challenge in Europe and indicates the need to reconsider the relationship between employment and poverty at both the individual and the household levels (Andreß and Lohmann 2008; Fraser *et al.* 2011; Peña-Casas *et al.* 2019).

The growing diffusion of IWP in contemporary societies is related to broader economic and labour market changes and, more specifically, to globalisation trends (Blossfeld *et al.* 2011) and institutionally driven processes of labour market segmentation and dualisation (Barbieri and Cutuli 2016; Brulle *et al.* 2019; Horemans 2018; Palier and Thelen 2010). It is a matter of fact that many industries have attempted to face global competition by lowering wages and reverting to 'marginal' and secondary labour market employment, which entail hourly wages and annual earning capacities that are often inadequate to shelter people from poverty exposure. Consequently, temporarily employed, involuntarily part-time and low-wage workers are reported to be systematically overrepresented among the IWP (Lohman and Marx 2018). Yet it is widely acknowledged in the literature that IWP is strongly related to underemployment (Hallerod *et al.* 2015; Horemans *et al.* 2016; Tamayo and Popova 2021), the so-called employment carousel and short-term, precarious work contracts, which turn out to be much more problematic when concentrated within the same household. Finally, the question remains open as to what extent these dynamics of risks spill over to previously sheltered middle classes (Ranci *et al.* 2021) or foster the concentration of IWP in the least advantaged social groups (Brandolini *et al.* 2018). Three main questions thus emerge in the debate around IWP: (1) Do employment and wages no longer protect against poverty? (2) Relatedly, are the effects of these tendencies independent of social class? (3) Are mechanisms of poverty traps strong determinants of IWP dynamics in European labour markets?

In a nutshell, the response is: not in these bold terms, for various reasons. A deeper understanding of the relationship between paid employment and poverty indeed seems crucial, both for policy design and to comprehend the broader dynamics of inequality and social stratification. This holds true since adverse socioeconomic conditions – IWP status no exception – tend to persist over time and trap the same individuals, households and social groups. This evidence is in line with a well-established tradition of socioeconomic literature that identifies mechanisms of cumulative disadvantage as drivers of social inequalities and stratification (Bask and Bask 2015; DiPrete and Eirich 2006; Merton 1988; O’Rand 1996; Vandecasteele 2010, 2011). To design policy measures that can tackle the drivers of poverty accumulation (Biewen 2009, 2014), an understanding of micro-level poverty dynamics and the mechanisms of the persistence of economic disadvantage is indispensable. However, as IWP rates and IWP longitudinal dynamics of accumulation vary not just at the micro level between individuals and household types but also across countries, we stress that IWP responds to the interplay of macro- and micro-level conditions: institutional welfare features, labour market settings and individual and household-level characteristics (Esping-Andersen *et al.* 2002).

2. Definitions and background

IWP is defined by a combination of individual and household conditions (Lohmann 2018; Raitano *et al.* 2019). Individuals are considered IWP if they: (1) report employment as their main activity status for at least six months of the reference year; (2) live in a household with an equivalised disposable income of less than 60% of the national median (the standard EU definition of at risk of poverty¹). The definition thus encompasses two dimensions: the first related to individual factors such as personal endowments, labour market position (in terms of quality of occupation, employment stability and working schemes) and job remuneration and the second related to household structure and household employment composition. This implies on the one hand that an individual, if employed for a considerable portion of the year, can be considered working poor regardless of individual wage depending on household size and the earning capacity of other household members. On the other hand, individuals are not considered IWP if they fail to satisfy the employment criterion due to long spells of inactivity or unemployment, regardless of their own or their household’s economic conditions. Depending on the specific perspective adopted, those at risk of IWP can be viewed either as poor individuals who are employed, thus highlighting labour market factors, or as working people whose families have accumulated too little income, thus underscoring the relevance of the household dimension. Therefore, while IWP is substantively an interesting concept, the

¹ See: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:At-risk-of-poverty_rate

combination of individual employment and household economic situation makes it analytically complex: changes in aggregate IWP rate are indeed conditioned on the extension of the workforce at a given point in time², and individual transitions in and out of IWP are jointly conditioned on the individual's employment status and the income of the entire household.

In light of these multifaceted dynamics, the debate on stocks, trends and drivers of IWP is well established in the literature, and recent years have witnessed a lively production of socioeconomic analysis on the topic (Kalugina 2013; Lohmann and Crettaz 2018; Lohmann and Marx 2018; Polizzi *et al.* 2021; Van Winkle and Struffolino 2018). From this debate, a few main conclusions emerge: (1) the analytical and empirical distinction between low-paid work and IWP as separate phenomena (Andreß 2013; Marx 2018); (2) the relevance of employment continuity (Halleröd *et al.* 2015), which calls into question the process of labour market dualisation and the spread of employment precarity with annexed carousel careers (Barbieri 2009; Barbieri, Scherer 2009; Barbieri *et al.* 2019); (3) the growing importance for household economic stability and wealth of the contributions of multiple earners (Brady *et al.* 2019), which implies a revolution in women's roles in many countries and a radical change in traditional family models; and (4) the relevance of macro-level determinants, both in institutional and structural terms, represented by cross-country heterogeneity in income support schemes and welfare generosity (Lohmann and Crettaz 2018; Tamayo and Popova 2021) as well as labour market composition and earning distributions across EU labour markets (Salverda and Haas 2014; Stepanyan and Salas 2020).

3. Contributions

While the incidence of IWP and its distribution is relatively well documented from a static perspective, less is known about the underlying household dynamics (Vandecasteele and Giesselmann 2018) and social gradient of IWP risks or the potential persistent (causal) consequences of IWP on future economic situations (Brady *et al.* 2019; Mussida and Sciulli 2021).

We investigate trends and determinants of IWP in 14 Western European countries and analyse the dynamics of social stratification of IWP in different institutional contexts. Different levels of IWP across countries are well documented and can be traced back to welfare generosity and the functioning of specific labour markets. As our specific research interest lies in the identification of individual- and household-level stratification dynamics of IWP risk – as we expect most drivers of IWP to operate beneath institutional

² Paradoxically, however, IWP might even decline in times of crisis, as those with lower incomes lose their jobs (and thus exit from the count of IWP) disproportionately more often.

intervention – this article focusses mainly on the micro-level determinants of IWP in Western Europe, thus keeping the characteristics of the institutional context in the background.

We document the incidence of IWP in distinct sociodemographic groups and occupational class positions as well as the relevance of household composition and (changes in) families' employment situations. We also examine the details of individuals' employment situations – including contract, low-wage and part-time positions – and the relevance of these arrangements when considering household employment patterns. Our results stress the importance of household work intensity from both a static and dynamic perspective as a crucial factor influencing risk exposure, longitudinal accumulation and stratification consequences.

Our second contribution relates to the assessment of causal effects of previous IWP for current risk exposure as an analytical tool to grasp (and to contrast, in terms of policy) the 'functioning' of poverty exposure over time. Much attention has been paid to the efficacy of welfare transfers as a measure to alleviate economic strain on families – and, indeed, net social transfers are crucial instruments in reducing poverty risk (Brady *et al.* 2010; OECD 2009). However, the efficacy of policies facing poverty diffusion (more or less centred on passive measures) depends on the extent to which poverty and its persistence are causally driven by previous poverty experience or rather spurred by structural factors related to the individual and the family. We exploit longitudinal information and disentangle the descriptive persistence of IWP over time from the dynamics of IWP inertia related to mechanisms of genuine state dependence (GSD) and (intertwined) factors of unobserved heterogeneity. In this area, the results show that large portions of the population display a minor role of net mechanisms of poverty entrapment (GSD), while reiteration of risks tends rather to be associated with unobserved factors at the individual and household level.

4. Data and methods

We analysed EU-Silc data for the period of 2004 - 2015, focussing on 14 countries representing a broad set of institutional, welfare and labour market features: Austria, Belgium, Denmark, Greece, Spain, Finland, France, Ireland, Italy, the Netherlands, Norway, Portugal, Sweden and the United Kingdom. Data include information on individual and labour-market-related characteristics, disposable incomes (before and after social transfers) and allow household features to be reconstructed in terms of composition, presence of children, employment patterns and household work intensity. Being at risk of poverty is measured on the basis of equivalised net household income (adjusted by modified OECD equivalent scale accounting for household size) after

welfare transfers (pensions included), with those at risk defined as living in a household whose income falls below 60% of the national median income. To satisfy the employment condition for IWP, the individual must have been employed for no less than seven months, not necessarily consecutively. We also controlled for part-time employment. This standard definition (Eurostat 2022; Lohmann and Marx 2018) responds to a rationale of distinguishing IWP from general poverty risk more frequently associated with protracted periods of joblessness or long and reiterated employment interruptions. This definition of IWP excludes those with the least labour market attachment but still allows us to include individuals with unstable careers in our at-risk set. Limiting the sample to continuously employed individuals would produce a relevant underestimation of IWP by hiding the heterogeneity in rates across social groups characterised by huge differences in exposure to unemployment or inactivity spells, especially in dualistic labour markets. The analytical sample includes men and women aged 18 to 65. As we are interested in IWP dynamics over time, we use longitudinal information, which is in principle available for up to four successive years; however, as income measures refer to the previous year, we are de facto confined to a maximum of three observations per unit. The analyses are organised as follows. In the first step, we focus on the consequences of individuals' disadvantaged or non-standard labour market positions in terms of IWP risk. We run separate models for each country to allow household employment patterns to vary according to national and institutional contexts.

In three separate models, we analyse temporary employment, part-time work and low-wage conditions, respectively, as well as their country-specific effects. We use panel random-effects regressions in the form of linear probability models and control for core covariates, namely gender, education (compulsory, secondary and tertiary), age group (18–25, 26–35, 36–45, 46–55 and 56–65), number of household members, presence of children and number of workers in the household.

In the second step of the analysis, we aggregate at the household level the above-mentioned job conditions (fixed-term, part-time and low-wage employment) under the umbrella of 'non-standard employment' (NSE) and define a typology of household employment patterns according to a combination of number of earners (one vs two or more) and the presence of NSE in one or more members of the household. We also allow for (short-term) changes in the household's employment pattern (shifts from one to two employed components between $t - 1$ and t). We distinguish household employment patterns as follows: single-income households (for the entire observation window, ref.cat.); two workers; shift from one to two workers with both in 'standard' employment; and shift from one to two workers with one in NSE.

We assess to what extent longitudinal variation and changes in a household's work intensity and associated employment patterns shape IWP risk, also in comparison with alternative household work arrangements (in terms of either single- or dual-earner

arrangements). The analysis of changes in the overall household's labour supply is integrated with a focus on the intersection with household class position (based on European Socio – economic Groups (ESeG) classification) and defined according to the dominance criterion among earners (Rose and Harrison 2007). We distinguish these as follows: (1) managers and professionals; (2) technicians, clerks and skilled service occupations; (3) skilled industrial occupations; (4) unskilled occupations and (5) self-employed. As we are concerned with the individual- and household-level stratifiers of IWP risk, employment and social class are still powerful predictors of micro-level conditions of poverty and drivers of intergenerational transmission of unfavourable conditions. For these reasons, our models allow for an interaction between the employment patterns of the household and the household's dominant class position. Finally, to test for GSD – and thus clarify whether previous IWP causes future IWP – we build on dynamic correlated random-effects probit models (Grotti and Cutuli 2018).

The country-specific model takes the following form:

$$y_{it}^* = Z_{it}\beta + \gamma y_{i,t-1} + \alpha_1 y_{i0} + \alpha_2 \bar{w}_i + \alpha_3 w_{i0} + v_i + \varepsilon_{it} \quad (1)$$

where:

y_{it}^* : IWP risk of individual i at time t ,

Z_{it} : Individual covariates (sex, age group, education, employment contract, low wage, part time, number of employed persons in the household, hours worked per week, presence of children aged < 3 years, period effects);

$y_{i,t-1}$: Genuine state dependence of IWP;

$\alpha_1 y_{i0}$: Initial condition (value at t_0) of y ;

$\alpha_3 w_{i0}$: Initial condition (value at t_0) of individual time-varying covariates;

$\alpha_2 \bar{w}_i$: Individual means of individual time-varying covariates (low wage, part time, temporary employment, number of hours worked per week);
and

v_i, ε_{it} : Time-constant and time-varying error terms.

The model controls, alongside a vector of observable covariates (Z_{it}), for initial condition of IWP ($\alpha_1 y_{i0}$), initial conditions of time-varying covariates ($\alpha_3 w_{i0}$) and their means ($\alpha_2 \bar{w}_i$). The IWP measure in the previous year ($y_{i,t-1}$) can be interpreted as the causal or 'genuine' state dependency under the assumption that time-constant unobserved heterogeneity in this specification is proxied and captured by controls for initial conditions – a widely accepted assumption in the literature (Rabe Hesketh and Skronal 2013; Wooldridge 2005). Moreover, to better grasp the functioning of IWP inertia, we augment this base model to allow for an interaction between the main component associated with unobserved heterogeneity factors (i.e. initial condition: $\alpha_1 y_{i0}$) and GSD

(i.e. IWP one year before: $\gamma y_{i,t-1}$). In this way, we are able to stratify and quantify the magnitude of the effect of being in IWP at $t - 1$ for those already in IWP at the observed t_0 (the time of their first observation) and for those not displaying an IWP spell at t_0 . In so doing, we may detect group-specific patterns of accumulation of IWP over time. Notably, insofar as the condition at t_0 ($\alpha_1 y_{i_0}$) captures time-constant unobserved factors associated with IWP (Cutuli and Grotti 2020), we read between-group heterogeneities in magnitude of unobserved factors and GSD [$(\alpha_1 y_{i_0}) * (y_{i,t-1})$] as signals of multiplicative dynamics of protracted or reiterated IWP experiences.

5. Results

5.1. Micro level: individual- and household-level determinants

Some findings are well established in the literature (Lohmann and Marx 2018), and we find confirmation of these as well without reporting them in detail. We confirm the presence of relevant cross-country heterogeneity in terms of overall rates of IWP, with Southern European countries (Italy, Spain, Greece, Portugal) clearly exhibiting relatively higher levels compared with Continental (Austria, Belgium, France, Netherlands), Anglo-Saxon (Ireland, UK) and Northern European (Denmark, Finland, Norway, Sweden) countries. Women and young people are overrepresented among low-wage earners everywhere (Lohmann and Marx 2018; Maître *et al.* 2012) and are generally not prevalent among those experiencing IWP, as expected. This is true especially in Southern European countries, with a gradient toward more gender-neutral IWP distributions moving towards countries with higher employment participation among women. This seemingly contradictory result depends on a double selection process in employment (for women) and in timing of postponed exit from the parental ‘nest’ (for young labour market entrants). These two phenomena are comparatively more noticeable in Southern Europe, where female employment rates are considerably lower than elsewhere, employed women are selected mainly on an educational basis and young people tend to continue living in their parents’ homes for longer periods. This confirms that, when dealing with IWP, national specificities in terms of group composition can mirror diverging dynamics of (self-)selection into employment, with different gender- and age-related employment gaps in distinct contexts that plausibly require the adoption of differently targeted policies. Low educational endowments and unfavourable labour market conditions are, as expected, associated with IWP and especially with low-wage employment in all countries.

In what follows, we first look at inflows and outflows over time in distinct national contexts. Second, we profile the determinants of risk exposure, focusing on individual labour market conditions and household employment characteristics. Third, we link the

dynamic evolution of risk exposure to variation in household employment patterns, paying attention to the class stratification of IWP. Household work intensity is a relevant policy lever to reduce the occupational class gradient in risk exposure. Fourth, we investigate the longitudinal persistence of IWP over time, with the aim of detecting any mechanisms of GSD and their possible interplay with unobserved factors that may account for the descriptively high levels of IWP inertia.

Table 1. Incidence, entry and persistence in IWP (in %)

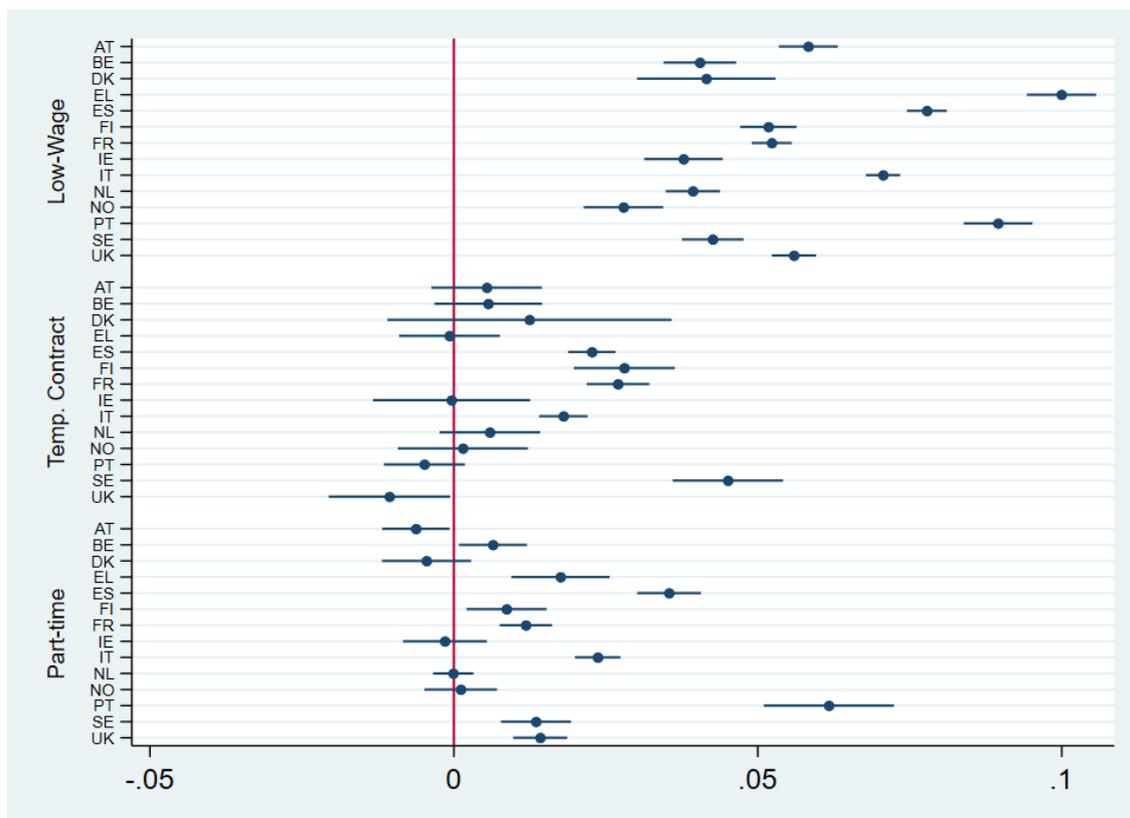
	AT	BE	DK	EL	ES	FI	FR	IE	IT	NL	NOO	PT	SE	UK
Overall IWP	5,8	2,5	1,3	13,1	9,1	2,6	6,8	3,7	9,5	2,7	2,6	8,0	4,2	5,7
Men	6,4	2,5	1,2	14,9	9,8	2,4	7,1	3,7	10,9	3,0	2,6	8,6	4,0	5,3
Women	4,9	2,5	1,4	10,5	8,1	2,7	6,4	3,6	7,2	2,4	2,6	7,2	4,5	6,1
Entry in IWP	2,6	1,4	0,5	5,0	4,7	1,6	3,2	2,3	3,4	0,8	1,0	3,4	1,7	3,6
Still in IWP at t+1	36,3	33,1	35,8	63,4	55,6	45,6	46,4	44,1	58,4	39,5	32,3	63,4	43,7	32,0
IWP at t0	7,0	3,6	3,2	15,7	9,2	3,1	8,2	4,9	9,7	3,4	4,4	8,9	4,2	6,1

The risk of entering IWP is rather moderate in all examined labour markets, as can be seen in Table 1. Relevant country differences instead emerge in the stickiness of IWP (i.e. protracted or reiterated IWP exposure) over subsequent years for individuals and their households. This evidence points toward a relevant role of welfare states (in terms of decommodification capacity, targeting and effectiveness of welfare transfers) and labour market functioning for IWP flows.³

Regarding drivers of IWP within each country, individual labour market positions – and especially household-level employment patterns – are the most relevant factors shaping IWP distribution. This holds in all contexts from both a static and a longitudinal perspective. In Figure 1, we consider individual labour market positions in terms of temporary, part-time and low-wage employment and their associations with IWP, presenting average marginal effects (AMEs).

³ In fact, the countries under scrutiny display relevant heterogeneity in terms of generosity and targeting of income supports as well as differences in pre-transfer and post-transfer IWP rates (results not shown, available upon request).

Figure 1. In-work Poverty and Low-wage, Temporary and Part-time Employment.



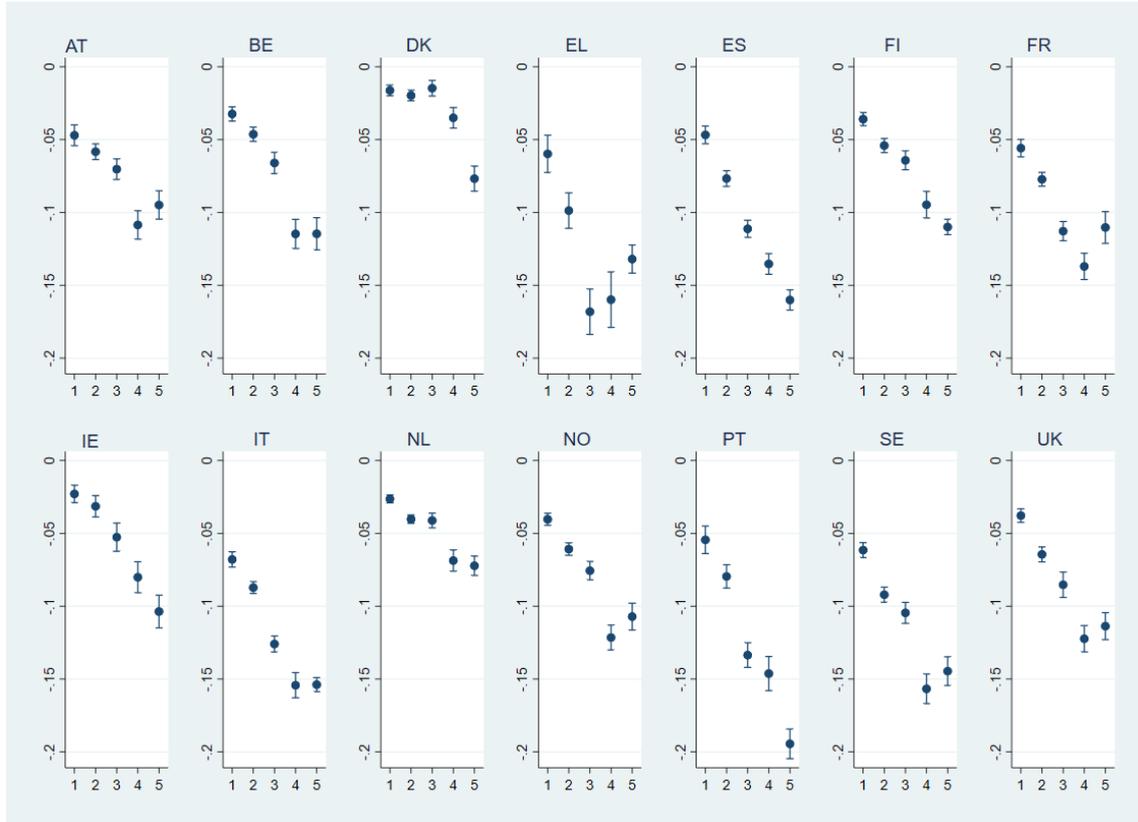
Note: Average Marginal Effects (AME) obtained in three separate random effects (RE) linear probability models (LPM), by interacting individual labour market conditions with country fixed effect. Control variables: period fixed effects, gender, age groups, education, number of workers in HH, household size, presence of children aged < 3.

As expected, working in a low-wage job notably increases IWP risk in all countries. However, these effects are particularly strong in contexts with a less developed welfare state, like Southern Europe (Italy, Spain, Greece, Portugal). In contrast, associations between temporary and part-time employment and IWP risk are ubiquitous, and the results are much less pronounced than for low-wage jobs.

The role of household work intensity (i.e. number of employed household members) and its interplay with occupational social class is visualised in Figure 2. Not surprisingly, the social class gradient in the AME of household work intensity is substantial in all contexts. The presence of an additional earner in the household (working no less than six months, thus satisfying the employment criterion of the IWP definition), is a relevant factor in reduction of IWP risk – up to approximately 15 percentage points per each additional worker, in some cases. This is particularly evident in Southern Europe, testifying to the importance of the labour market attachment of each family member for lower-class families. As in the vast majority of cases we deal with a single ‘added worker’ effect

(where the added worker is typically the wife), our results stress the IWP-protective role of bringing lower-class women into paid and non-marginal employment as a relevant measure for sheltering their entire family from poverty risk.

Figure 2. In-work Poverty and Household Work intensity by Occupational Class.



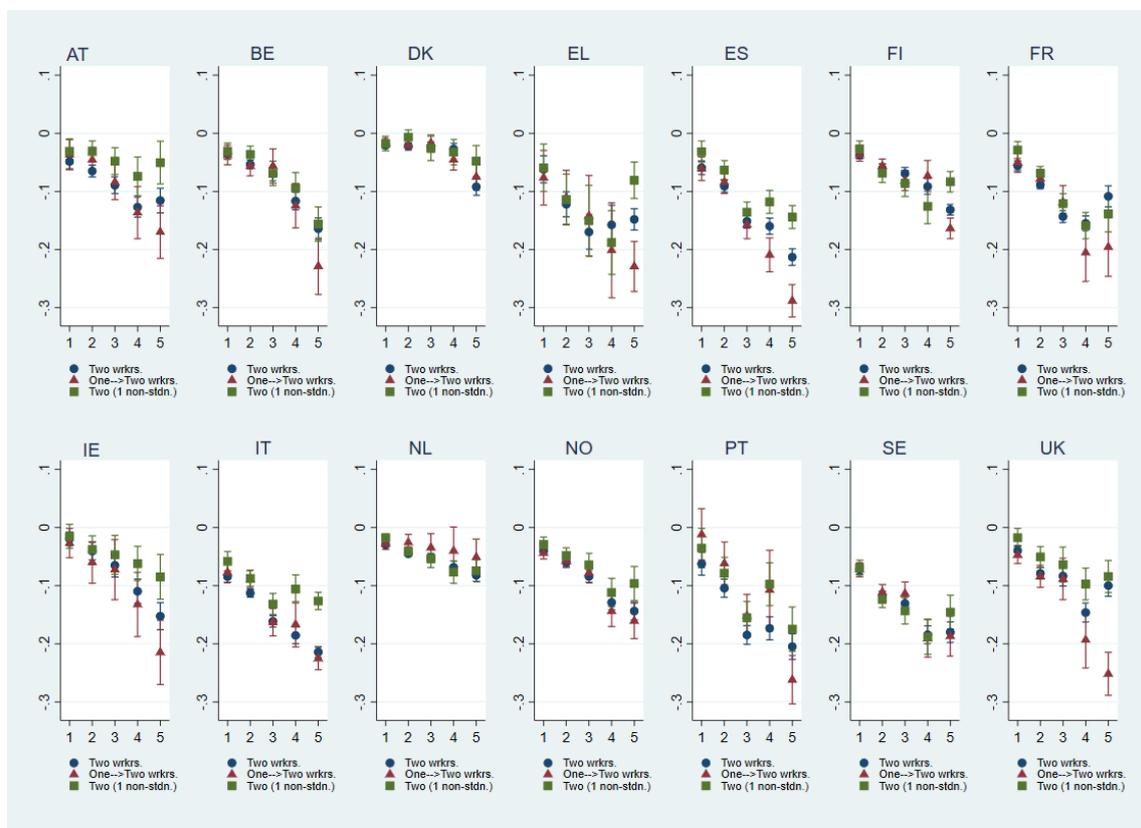
Note: AME of number of additional workers in the HHs. Country specific RE LPMs interacting household work intensity (number of workers) and HH level occupational class (dominance criterion): 1 Manager/Professionals; 2 Technicians, Clerks, Skilled Service workers; 3 Skilled Industrial workers; 4 Unskilled workers; 5 Self-Employed.

Control variables: year fixed effects, gender, age groups, education, part time, temporary, low-wage, household size, presence of children aged < 3.

Figure 3 combines the main pieces of evidence regarding IWP risk, looking jointly at social class IWP gradient, household employment patterns together with longitudinal increments in household work intensity over the observation window, and individual NSE. The AMEs show a clear picture of the relevance of both social class and household work intensity in all country contexts. Interestingly, the role of NSE position in shaping IWP risk depends critically on household work intensity, especially for lower classes (4: unskilled workers and 5: self-employed), who are structurally more exposed to IWP risk. Members of two-earner households display lower risk than single-earner households in

all countries. Shifting from a single income to two (or more) incomes has a clear sheltering effect, even in families where the second earner is in a temporary, low-wage or part-time employment position, provided a certain continuity of the employment spell over the year. Unsurprisingly, this protective effect of the added worker is much greater among lower occupational classes. Hence, the traditional one-breadwinner, continuously employed, usually male-centred ‘family model’ reveals its inadequacy as a valid arrangement to shelter families from poverty exposure across the entire set of countries considered.

Figure 3 In-work Poverty Risks by Household Employment Patterns and Occupational Class (AME).



Note: AME of household level employment patterns. Country specific RE LPMs interacting employment patterns (One worker along the entire obs. window (ref.cat.); Two workers along the entire obs. window; Shifting from one to two standard workers; Shifting from one to two workers, one of them in NSE) and occupational class (dominance criterion) (1 Manager/Professionals; 2 Technicians, Clerks, Skilled Service workers; 3 Skilled Industrial workers; 4 Unskilled workers; 5 Self-Employed). Control variables: year fixed effects, gender, age groups, education, household size, presence of children aged < 3.

In sum, our results show that increasing labour market participation and work intensity is a demonstrably effective means of combatting IWP and that dual-earner household arrangements have the potential to create substantially more equality – not only between men and women but also across social strata by significantly reducing poverty risk among lower-class families (and, needless to say, the risk of intergenerational transmission of disadvantage).

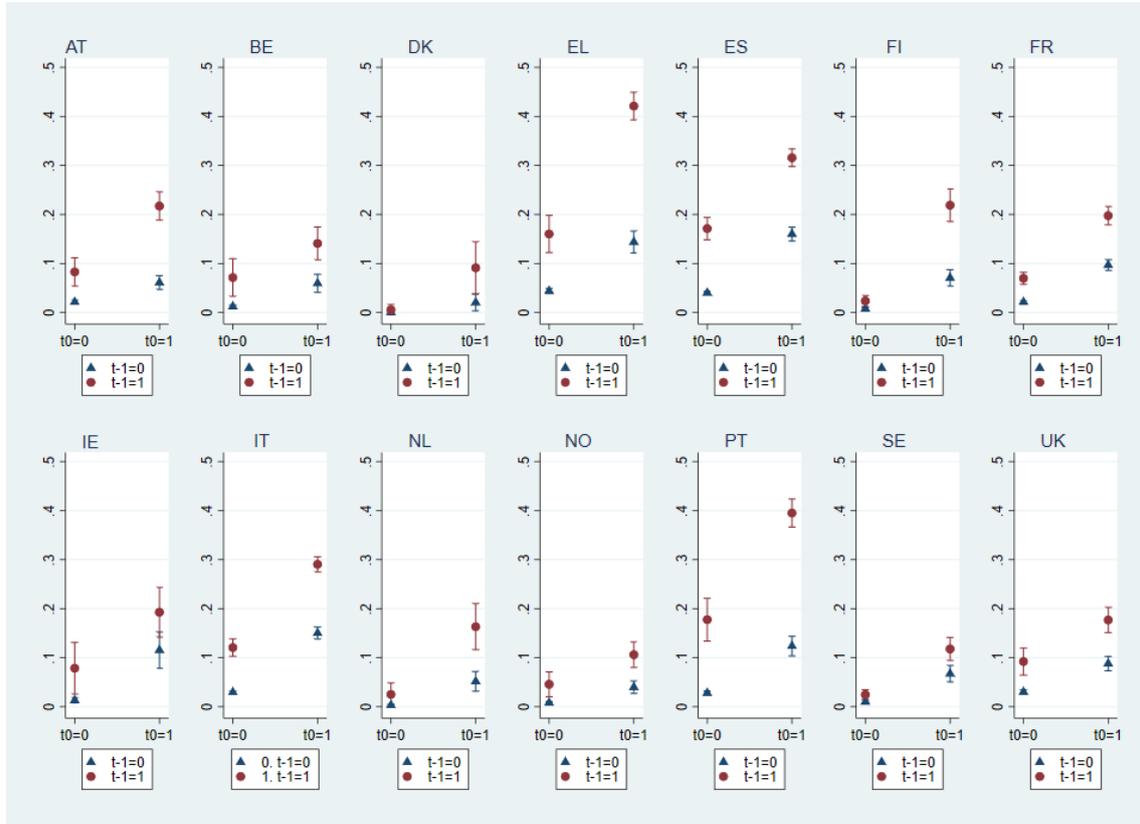
Additionally, our results confirm the higher IWP risk among the working classes, independent of the specific contexts. Thus, our findings do not corroborate the thesis that the middle classes in the last decades have been significantly exposed to economic vulnerability and poverty as a consequence of the financial crisis or due to ongoing processes of structural change related to globalization or technological innovation (OECD 2019; Pressman 2007; Ranci *et al.* 2021). More generally, our results indicate that, in recent decades in Europe, social class has continued to be a powerful stratifier of opportunities and social risks. However, our results also indicate that dual-income household setups are capable of partially reducing the class-based stratification of social risk.

5.2. Patterns and factors in IWP accumulation over time

So far, we have demonstrated IWP to be a persistent phenomenon with highly stratified risk, though activating an additional income in the family proved a viable exit strategy. We now turn to the question of to what extent current IWP experience causally increases the probability of incurring future poverty spells. Indeed, a scarring effect in terms of GSD dynamics could be considered a net driver of IWP stratification as well as a potential lever to focus on policies contrasting poverty accumulation by (timely) breaking poverty chains through welfare transfers.

If the accumulation and stratification of IWP are rather due to more stable and structural characteristics of the individuals and households (here captured by Y_t0), and not to previous IWP as such (here measured by means of $Y_t - 1$), this would cast doubt on the efficiency of passive policy measures such as welfare transfers. As anticipated above, in the last section of the analysis, we relax the assumption of unobserved heterogeneity and current IWP exposure, treating them as merely additive factors. We test for multiplicative dynamics between (un)observed factors and poverty entrapment as a potential mechanism of cumulative disadvantage.

Figure 4. Predicted probabilities at t of In-work Poverty according to the situation at ($t-1$) and at ($t0$).



Note: Predicted probabilities obtained by means of country specific random effect probit models interacting $(\alpha_1 y_{i0}) * (y_{i,t-1})$.

Control variables: year fixed effects, gender, age groups, education, temporary employment, low-wage condition, part time condition, hours worked per week, household size, number of wrkrs. in household, presence of children aged < 3, IWP initial conditions, IWP $t-1$, initial conditions and within unit avgs. (temporary employment, low-wage, part time, hours per week).

Figure 4 reports the country-specific predicted probabilities of IWP based on a dynamic probit model. According to different initial conditions (left: not in IWP at the first observation; right: in IWP at $t0$), it plots the IWP probabilities (at time t) for those who were IWP in the previous year (IWP $t-1=1$) and for those who were not (IWP $t-1=0$). The results of the interaction between conditions at $t0$ and at $t-1$ provide relevant information on the accumulation dynamics of IWP. Looking at the large segments of the population that did not report IWP as their initial condition ($t0=0$), the marginal effect of previous IWP spells – that is, the differences between in predictions for those in IWP in the previous year ($t-1=1$) and not in IWP ($t-1=0$) – are negligible in Nordic countries (Denmark, Finland, Norway, Netherlands, Sweden), relatively small in Central and Anglo-Saxon countries (Austria, Belgium, France, Ireland, UK) and slightly higher (about 10 percentage points) in Southern European countries (Italy, Spain, Greece, Portugal). Put differently, at least for individuals and households with limited risk of becoming IWP (i.e. not in IWP as an initial situation at $t0$), there seems to be little GSD

in poverty entrapment in most national contexts. For these groups, the rare occasional spell of IWP (*entry rates* in IWP have been shown to be low everywhere: see Table 1) is indeed associated with small or no increases in subsequent IWP. Altogether, the risk of GSD in IWP shows a considerable degree of heterogeneity among countries following a north–south divide.

The situation changes for those reporting IWP in their first available observation ($t_0 = 1$). This small and selected group of people (Table 1) shows not just overall higher IWP risk, as expected, but also relevant differences according to situations one year before, suggesting carousels in and out of IWP and clarifying the presence of a causal effect of previous ($t - 1 = 1$) IWP in determining actual IWP risk. This implies that, net of possible GSD components, IWP persistence is significantly associated with unobserved individual and household attributes as well as with broader structural conditions, altogether captured by the initial condition at t_0 . Notably, despite clear heterogeneity in level and magnitude of the interaction between t_0 and $t - 1$ [$(\alpha_1 y_{i0}) * (y_{i,t-1})$], in all countries the risk of IWP is particularly high in the event of co-occurrence of IWP at initial condition and previous IWP exposure.⁴

Loosely speaking, unobserved heterogeneity (initial condition) and IWP spells do not work additively to shape longitudinal accumulation of IWP risk. Rather, stratification of IWP can be seen as a multiplicative result of the interaction between net dynamics of GSD ($y_{i,t-1}$) and pre-existing individual and household level risk factors, captured by $\alpha_1 y_{i0}$ (i.e. Y at t_0). All in all, if GSD dynamics come into play, they do so especially for selected disadvantaged segments of the workforce already characterised by higher risk of re-entering IWP in the course of their career.

This last piece of evidence entails relevant policy implications. First, in light of the results, policies supporting poor individuals and households through transfers aimed at blocking poverty chains are effective insofar (and limited to the workforce segments for whom) IWP persistence is largely attributable to net GSD dynamics. In the same vein, a larger component of IWP diffusion and IWP persistence is also associated with transitions between spells of poverty and non-poverty, especially among those with unfavourable initial conditions. Thus, rather than focusing on GSD risk and transfer-based measures conditioned on current IWP condition, policies should focus more heavily on supply-side endowments and demand-side factors structurally associated with individual employability and sustained work intensity.⁵ Relatedly, this evidence also suggests the

⁴ Figure 4 must be interpreted considering that it plots three different IWP situations (yes/no) at three different time points: the time of the interview (t), one year before ($t - 1$) and at first observation (t_0 or initial condition). Of course, the strongest effects of GSD are verified when $t_0 = 1$, $t - 1 = 1$ and $t = 1$ (red dots on the right side of each country graph).

⁵ Focusing on implemented policies, the minimum wage has been the most important policy for tackling IWP in most EU member states, followed by taxation policies and reductions in social contributions by individuals at the lowest income levels. Alongside these targeted policies, minimum income schemes, Active Labour Market Policies (ALMPs) (including educational and training policies) and policies aimed at tackling labour market segmentation are signalled by the European Commission as relevant and effective measures against IWP (Peña-Casas *et al.* 2019).

opportunity to organise welfare policies as follow-up procedures tailored to the workforce segments most at poverty risk and with recent past poverty exposure, regardless of the contingent condition of IWP at each point in time.

6. Conclusion and discussion

Risk of IWP has gained attention in recent contributions to the socioeconomic literature and in political debates (Peña-Casas *et al.* 2019). While the concept of IWP is descriptively suggestive, analytically it is still disputed, and evidence to date on its dynamics and causal drivers is rather inconclusive. These areas are where this paper makes its contributions.

First, we have shown that IWP in contemporary Europe is still a strongly stratified phenomenon that tends to concentrate and accumulate over time among specific segments of the workforce, especially in terms of occupational class positions. Working-class occupations are the most exposed to IWP risk, and this picture is quite homogeneous across the analysed sample of Western European countries.

Second, we have shown how the process of EU labour market deregulation that took place in the last decades played a role in determining the micro-level conditions at the basis of IWP diffusion. The spread of temporary, low-wage, precarious and part-time positions and the process of labour market dualisation produced by deregulation (Barbieri and Gioachin 2022; Barbieri *et al.* 2019) has contributed to the increase in IWP rates in European labour markets.

However, and notwithstanding the diffusion of employment precarity, our results also show that employment has not lost its centrality in protecting individuals and households against IWP. In this sense, we stress that *employment and labour policies are still the solution, and not the cause, of IWP*. Thus, our results stress that, whatever the country, increased household work intensity is crucial in keeping families out of poverty. In particular, we stress that a second income is relevant especially for working-class households, where the presence of an additional salary can partially compensate for the social stratification of IWP risk. In these situations, labour policies become essential: activating a second income implies bringing more women into – ‘*reasonably contingent*’ and *decently paid* – work. Relatedly, we highlight that, in terms of poverty reduction, the debate should be re-centred in favour of a social stratification perspective. Specifically, it should be focused on the situation of less educated women in lower socioeconomic classes, who are often partnered with low qualified working-class men. These are the women whose labour market participation must be raised in order to consistently keep their families and children out of poverty over the long term.

IWP risk thus appears to be a function of the intersection of both social stratification dynamics and household-specific work arrangements. This becomes evident when considering the IWP risk constellations of different household work arrangements across different social classes – specifically, the higher risks of the single-income ‘traditional’ household. For families with this household configuration, poverty risks are particularly

striking, especially in Southern European countries with their combination of less generous welfare systems and generally lower wages.

Indeed, for the less advantaged social classes characterised by low labour market participation among women, single-earner couples still represent a relevant portion of household work arrangements. This is a significant driver of IWP exposure and longitudinal accumulation of risk over time, especially when combined with disadvantaged conditions in the secondary labour market of the sole wage provider. The opposite holds for bourgeois families.

To some extent, our results support the thesis that any additional employment is better than no employment, but this is certainly *not* a story of a straightforward equality–employment trade-off. Taking a closer look, however, poverty risk is reduced once a certain continuity of employment is guaranteed for all earners, underlining the necessity of providing reliable employment conditions, ensuring decent wages and preventing or limiting household-level accumulation of precarious labour market conditions.

Moreover, this paper also provides a comparative overview, presenting results for countries that are usually classified differently in terms of labour market flexibility and welfare generosity. As expected, we find level differences across countries regarding poverty risk exposure, and the well-documented differences in welfare transfers certainly play a role in shaping IWP levels across contexts. This is especially relevant with regard to the capacity to protect single-earner households from falling into IWP. In contrast to level differences, however, social stratification of IWP risk and the role played by type of household work arrangement is similar across countries. As expected, country differences are less pronounced for higher-class households with dual-income arrangements.

Additionally, descriptive evidence shows that IWP tends to protract over time, with negative consequences not only in terms of mid-term accumulation of socioeconomic disadvantage but also in terms of overall between-household trends of intergenerational transmission of inequality. Our results on this important aspect are threefold. First, the magnitude of IWP inertia is different across countries, with higher degrees of stickiness in Southern European countries, which also display the highest overall IWP rates. However, the longitudinal accumulation of IWP does not respond merely to mechanisms of GSD in broad segments of the population. Rather, it stems largely from the interplay between poverty entrapment (GSD) and disadvantaged initial conditions associated with unobserved heterogeneity factors of (negatively) selected groups of individuals and households. This evidence of the conditionality of GSD is a major outcome of this paper.

Insofar as the high inertia of IWP risk can only partly be traced back to causal mechanisms of poverty traps, welfare transfers alone cannot ensure the avoidance of future individual poverty exposure and aggregate poverty spread. In other words, we do not expect welfare transfers to work effectively if they are not accompanied by policies targeted to reduce the structural basis of poverty risk by incentivising individual employability and household-level work intensity. In the same vein, our results indicate that policies intended to prevent longitudinal accumulation of IWP should not be primarily conditioned on contingent ($t - 1$) poverty conditions but rather organised under the form

of mid-term follow-up measures devoted to individuals and households with weak labour market attachments.

To be clear, we do not intend to imply that social welfare transfers to alleviate the economic strain of being at risk of poverty would not be useful. Previous research has documented that growing up under economic strain entails severe and long-term negative consequences, and our results document adverse multiplicative effects of unfavourable initial conditions and causal effects of previous IWP, with clear consequences in terms of inequality and crystallisation of social stratification.

Thus, from the perspective of social investment, welfare transfers are necessary to mitigate the social stratification of risk and to help reduce (long-term) costs for the state. Investing in education seems to be the primary viable means of improving access to qualified employment from a long-term social investment perspective. However, better wages and more stable career prospects – at least in the short term – appear to have an inescapable link between lifting families out of poverty (and therefore assuring better conditions for future generations) and accepting employment growth as largely taking the shape of an increase in the share of flexible (yet not casual or marginal) non-standard jobs. At the same time, in order to protect against poverty, NSE should not accumulate within households but should rather guarantee access to reliable safety nets and entail some kind of stability and not-too-low pay levels. Finally, although low-wage work and IWP are different phenomena and not tightly related, low wages indeed remain related to poverty risk. This implies that fixing minimum legal wages as well as increasing standard wage levels, providing wage subsidies and implementing measures reducing insider–outsider labour market cleavages can be a remedy for IWP.

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