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Wage differences between atypical and standard workers in European countries: moving beyond average effects

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Abstract

This article provides a detailed picture of wage differences between atypical and standard workers across the wage distribution. It compares two distinct types of atypical employment, part-time and temporary employment, and examines seven European countries. Using 2016 EU-SILC data, the article presents quantile regression estimates of wage gaps associated with atypical employment across the wage distribution. The results show that wage patterns associated with different types of atypical employment are diverse and complex. Temporary employment is associated with significant wage penalties that decrease but largely remain significant towards the upper end of the wage distribution. In contrast, wage differences between part-time and full-time workers are smaller and range from part-time penalties at lower deciles of the wage distribution to non-significant differences or premiums at the top. These results suggest that different mechanisms may drive wage differences associated with different types of atypical employment. In particular, the article highlights the role of occupation in affecting atypical workers' labour market position and, consequently, wages relative to standard workers. Overall, the significant heterogeneity in atypical employment and its wage consequences calls into question the usefulness of the concept as a unifying category for research.

Introduction

Political and research attention towards the phenomenon of atypical employment has increased in recent decades (Hipp, Bernhardt and Allmendinger, 2015; ILO, 2016). Some policymakers have argued that the flexibilization of contracts and working hours are advantageous for both workers and firms (Kalleberg, Reskin and Hudson, 2000; Nienhueser, 2005). Yet, there remain questions about the social and economic consequences of atypical employment, commonly linked to emerging labour market divides (Häusermann and Schwander, 2012). This article explores the consequences of atypical employment relative to standard employment for individual wages in Europe, focussing on potential heterogeneity in wage effects. Does the wage gap between atypical and standard workers vary across the wage distribution? This question has important implications for both future academic research and policy responses to the growth of atypical employment.

Atypical employment is conceptualized as employment diverging from the 'standard employment relationship', that is permanent, full-time employment where the worker is employed on a contractual basis by an employer (Hipp, Bernhardt and Allmendinger, 2015; ILO, 2016). Atypical employment therefore includes part-time work, temporary employment, contractual arrangements involving multiple parties (particularly temporary agency work), and dependent self-employment (Hipp, Bernhardt and Allmendinger, 2015). This article focuses on two specific types of atypical employment, temporary and part-time employment. The subsequent discussion and analysis therefore focus on these employment relationships.

Previous research has established that atypical workers differ from standard workers in their individual and job characteristics (Gebel and Giesecke, 2009; Baranowska and Gebel, 2010; Eichhorst and Marx, 2015), and that both temporary and part-time

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employment may be associated with wage penalties relative to permanent and full-time employment, respectively, though these associations differ by type of atypical employment analysed (Blanchard and Landier, 2002; Hirsch, 2005; Addison and Surfield, 2007; Manning and Petrongolo, 2008; Giesecke, 2009; Matteazzi, Pailhé and Solaz, 2014; Kahn, 2016). Moreover, scholarship has increasingly emphasized heterogeneity within atypical employment, as temporary and part-time workers have diverse socio-economic characteristics and work in a range of jobs (de Jong *et al.*, 2009; Eichhorst and Marx, 2015; Nightingale, 2019). This heterogeneity will likely affect the socio-economic consequences of atypical employment, including wage differences associated with it.

Building on this literature, the central contribution of this study is a detailed investigation into the differences in wage gaps associated with part-time and temporary employment across the wage distribution. Several theoretical mechanisms may explain changing wage gaps between atypical and standard workers across the wage distribution, including compensating differential and labour market segmentation theory. In this article, applications of the latter to temporary and part-time employment will be used to argue that these employment relationships may be located in both the secondary and primary labour market segment, in turn associated with differing levels of bargaining power and wages. However, these mechanisms likely apply to temporary and part-time employment in differing ways, as they are established and protected to highly different extents in European labour markets.

In addition, this article adopts a comparative European perspective, examining a sample of seven countries. Most existing literature on wage differences associated with atypical employment across the wage distribution focuses on single countries. For both part-time and fixed-term employment, decreasing wage penalties and emerging premiums at higher deciles have been found in Germany (Mertens and McGinnity, 2005; Mertens, Gash and McGinnity, 2007; Tönurist and Pavlopoulos, 2013; Gallego-Granados, 2019), while in Spain, differentials for fixed-term work are similar across quantiles (Mertens, Gash and McGinnity, 2007). By analysing both a pooled country sample and individual countries, the article establishes in how far patterns are systematic across Europe. The analysis examines commonalities and differences across countries and discusses some potential explanations, though a formal investigation of country differences is left to future research.

This article builds on a previous contribution by Comi and Grasseni (2012), who conduct a cross-national analysis of wage penalties associated with temporary employment across the wage distribution.

Examining nine European countries, they find a pattern of decreasing wage gaps in several countries, though not in all cases studied. This article updates and extends these results. In particular, unlike the aforementioned study—and other previous scholarship on atypical employment and wages across the wage distribution (Mertens and McGinnity, 2005; Mertens, Gash and McGinnity, 2007; Tönurist and Pavlopoulos, 2013; Gallego-Granados, 2019)—this article jointly examines two types of atypical employment, temporary and part-time employment. Moreover, it contributes a detailed theoretical framework outlining the mechanisms affecting wage differences between atypical and standard workers across the wage distribution, and how they may apply differently to part-time and temporary employment. The subsequent comparative empirical analysis enables a detailed exploration of how the potential theoretical mechanisms apply in practice.

Why Expect Differences in Wage Gaps between Atypical and Standard Workers across the Wage Distribution?

Several theories could explain wage differences between workers in atypical—that is, part-time and temporary—and standard employment. On the one hand, compensating differential theory argues that in perfectly competitive markets, wage differentials are required to compensate for (dis)advantages among work activities, which influence the desirability of different employment options (Rosen, 1969). Wage discounts or premiums should reflect this (Addison and Surfield, 2007). Indeed, both temporary and part-time employment are associated with negative characteristics, such as lower job autonomy and fewer training opportunities (Eurofound, 2012), as well as lower non-wage benefits, such as pensions (Schulze Buschoff, 2015). In addition, the lower job permanency associated with temporary employment may itself be seen as undesirable. If atypical employment is systematically related to negative characteristics, this should lead to relatively higher earnings among atypical workers.

On the other hand, following labour market segmentation theory, atypical employment may be associated with wage penalties. Here, labour markets consist of two market segments, one internal, or primary, segment of stable, well-paid positions with good career prospects and working conditions, and an external, or secondary, segment with lower-grade jobs and no advancement prospects (Doeringer and Piore, 1971; Tomlinson and Walker, 2012). Jobs in the internal segment are characterized by higher stability and wages than those in the external segment, where turnover is high (Reich, Gordon and Edwards, 1973). Employees

in the internal labour market can extract wage advantages from employers through bargaining, resulting in relative wage penalties for workers in the external segment (Bentolila *et al.*, 1994). If atypical workers are disproportionately located in this external segment, they should suffer wage penalties relative to standard workers.

Generally, temporary employees are more likely to face labour market disadvantages and wage penalties than part-time workers. Following Sørensen (2000), the predominant labour market positions in internal labour markets are ‘closed’, that is, permanent and not freely available to external labour market workers. In contrast, ‘open’ positions are allocated through competitive market allocation mechanisms, with matches short and definite (Sørensen, 2000). Workers within the internal labour market can claim ‘positional rents’ from employers, who have incentives to avoid the turnover cost of replacing workers in closed positions, as they are protected by job-preserving measures and legislation (Giesecke, 2009; Giesecke and Groß, 2004). Temporary contracts are by nature more open than permanent ones, and thus inherently put workers at a disadvantage when it comes to wage bargaining.

In contrast, part-time workers are exposed to much lower labour market disadvantage (Giesecke, 2009). Relative to the definition of the standard employment relationship rooted in the Fordist ‘golden age’, built on stable, full-time, permanent and dominantly male employment (Barbieri, 2009), part-time work is clearly ‘atypical’. Nevertheless, it has become highly established in labour markets and usually entails similar employment rights as full-time employment (Barbieri, 2009; Nicolaisen, Kavli and Steen Hensen, 2019). Though part-time workers face some institutional disadvantages, such as lower unionization (O’Dorchai, Plasman and Rycx, 2007), temporary work is inherently associated with greater labour market insecurity and disadvantage than part-time employment. With regard to wages, research confirms this, as wage penalties associated with temporary employment are consistently identified (e.g. Giesecke and Groß, 2004; Kahn, 2016), whereas part-time wage gaps tend to become very small or disappear once accounting for the characteristics of workers, though results vary (e.g. Hardoy and Schöne, 2006; O’Dorchai, Plasman and Rycx, 2007; Manning and Petrongolo, 2008; Matteazzi, Pailhé and Solaz, 2014).

However, atypical employment is a diverse category and different theoretical mechanisms may explain wage dynamics across the population of atypical workers. Indeed, to this end, the primary interest of this article lies in investigating whether wage patterns associated with different types of

atypical employment differ across the wage distribution. For both part-time and temporary employment, theoretical arguments will be developed to explain such differences.

Turning first to temporary employment, Piore (1975) proposes that the primary labour market segment is heterogeneous. More precisely, the primary sector can be divided into a lower and upper tier. Whereas the lower tier is defined by the traits detailed above characterizing the primary labour market segment, the upper tier consists of professional and managerial jobs. Professions in the upper tier are associated with higher status, career advancement and pay relative to the lower tier. Job mobility and turnover are relatively high, but tend to be associated with career advancement, unlike the high job turnover characterizing the secondary sector (Ibid.). Hence, more mobile temporary jobs may exist in both the external and the primary labour market. However, temporary workers in the primary segment have higher status and tend to work in certain professional occupations, such as creative occupations (Reich, Gordon and Edwards, 1973).¹ Therefore, they have higher labour market bargaining power than temporary workers in the external segment. Empirical evidence demonstrates that temporary employment is located in highly different professions. While many temporary workers work in elementary occupations (Eichhorst and Marx, 2015), some high-skilled occupations are also disproportionately temporary, such as entry-level jobs in academia (Hagen, 2002) or skilled manufacturing (Eichhorst and Marx, 2015).

At the bottom of the wage distribution, temporary workers are expected to be part of the external labour market and experience wage penalties due to their lower labour market bargaining power. In contrast, higher-earnings temporary workers, located in professional occupations in the primary labour market segment, will have more bargaining power relative to temporary workers in the external labour market. The higher bargaining power associated with their position will, at least to some extent, counteract the disadvantage associated with a temporary position. At the very top of the distribution, high-earning, highly-qualified temporary workers may even be able to claim a compensating differential for the negative labour market attributes associated with temporary work. While the assumption of a single competitive market underlying compensating differential theory likely does not apply across the overall labour market, it may hold within occupations at a given skill level (Kalleberg and Sørensen, 1979). Hence, wage penalties associated with temporary employment should be largest at the bottom of the wage distribution and decrease gradually, possibly becoming insignificant at the top.

Similar arguments apply to part-time employment. According to Tilly (1992, 1996), part-time work is segmented. While ‘secondary’ part-time jobs are part of the external labour market, with lower compensation and skill levels, and rapid turnover, ‘retention’ part-time jobs in internal markets feature high wages, substantial skill levels and employment stability. The latter are used by companies to retain or attract valued workers who prefer part-time work. As for temporary work, a crucial dividing line between retention and secondary part-time workers are their skill level and occupation, with technical and professional workers more likely to be employed in retention part-time jobs.

As set out, part-time work is overall associated with less labour market disadvantage than temporary work. Hence, part-time wage penalties are expected only at the bottom of the wage distribution, where secondary part-time work dominates. In contrast, retention part-time workers at the middle and upper end of the wage distribution may not experience significant wage penalties relative to full-time workers and may even claim part-time premiums. If so, such premiums should not be driven by compensating differentials, as retention part-time work is not associated with inferior labour market attributes. Rather, offering wage premiums to highly skilled retention part-time workers can be an efficient strategy for firms to hire and retain experts on a lower overall hourly basis (Tönurist and Pavlopoulos, 2013).

To summarize, both temporary and part-time work are expected to be associated with wage penalties at the bottom of the wage distribution, whereas wage gaps should become more positive towards the middle and top of the distribution. However, the scale of these penalties may differ between temporary and part-time work. As temporary work is associated with higher labour market disadvantage than part-time work, temporary wage penalties should be relatively larger and present across more of the wage distribution. In contrast, part-time wage penalties should only be observed at the bottom of the distribution, with non-significant differences or premiums at the top.

Data, Variables, and Methods

To address the research question, cross-sectional data from the EU Statistics on Income and Living Conditions (EU-SILC) 2016 is used.² EU-SILC consists of harmonized European data, including high-quality wage data, allowing for a cross-national analysis. Seven Western European countries are examined: The United Kingdom, Ireland, Switzerland, Austria, Portugal, Italy, and Greece. Primarily, the choice of countries is motivated by the availability of data on hourly wages, discussed below. Moreover,

post-socialist countries³ are not included. Due to their unique social and economic history, these countries’ employment regimes differ significantly from Western Europe, and in most countries, atypical employment is significantly less prevalent (Gebel, 2008). Preliminary data examination confirmed very low rates of part-time work, in particular, in the four Post-socialist countries. Therefore, this explorative analysis focuses on Western Europe.⁴ The cases constitute a reasonably balanced sample of Western European countries with different institutional and labour market structures. All data are weighted to account for sampling design.⁵

The target population examined are working age (16–64) employees.⁶ Key independent variables are temporary and part-time employment.^{7,8} Temporary employment is defined as having a non-permanent contract. Part-time employment is defined as an individual stating that they work part-time, following the Eurostat recommendation. However, a variable based on working less than 30 hours per week, recommended by some experts (van Bastelaer, Lemaître and Marianna, 1997), is used as a robustness check.⁹

Table 1 presents the proportions of temporary and part-time employees in the pooled sample and for individual countries. Rates of temporary employment vary across countries, being lowest in the United Kingdom and highest in Southern Europe. Part-time work is much more prevalent among women than men. Southern European countries tend to have lower rates of part-time employment than other countries, particularly for women. Due to its particularly low proportion, male part-time work in Portugal is excluded from the analysis.¹⁰

The dependent variable is log gross hourly wages,¹² available for the countries chosen. This variable is constructed using gross monthly earnings, based on the month of the interview, in the main job. Earnings include paid overtime, tips and commissions, bonuses and supplementary payments and are measured before the deduction of tax and social insurance contributions.¹³ Monthly earnings are adjusted using monthly working hours to derive gross hourly wages.¹⁴ An alternative measure is annual cash income, provided for all countries. However, this refers to the 12-month income reference period, in most cases meaning the calendar year prior to the interview,¹⁵ while other variables, including contract and working hours, refer to the time of interview. Thus, annual income cannot reliably be linked to current characteristics (Iacovou, Kaminska and Levy, 2012).

Moreover, a range of control variables is included. Demographic characteristics include age (categories 16–25, 26–40, 41–55, and 56–64), cohabitation, and own children aged 0–5 and 6–17 in the household.

Table 1. Proportion of atypical workers by country, weighted sample (Employees 16–64), 95% confidence intervals in brackets¹¹

Country	Temporary work		Part-time work	
	Men	Women	Men	Women
All	8.3 [7.7; 8.9]	9.2 [8.6; 9.8]	7.6 [6.7; 8.4]	31.6 [30.6; 32.6]
UK	4.1 [3.2; 5.3]	4.3 [3.4; 5.4]	7.8 [6.4; 9.5]	32.4 [30.5; 34.3]
IE	8.1 [6.6; 9.9]	9.4 [7.8; 11.1]	11.1 [9.3; 13.2]	33.4 [30.6; 36.2]
CH	9.5 [8.3; 10.9]	8.8 [7.6; 10.2]	9.6 [8.2; 11.1]	46.2 [44.1; 48.3]
AT	6.2 [5.1; 7.5]	7.9 [6.7; 9.4]	5.7 [4.8; 6.8]	47.4 [45.2; 49.7]
PT	18.6 [17.1; 20.2]	20 [18.4; 21.7]	1.6 [1.2; 2.1]	5.7 [4.9; 6.6]
IT	14.3 [13.2; 15.4]	16.1 [14.8; 17.5]	6.5 [5.7; 7.5]	27.4 [25.9; 29]
EL	18.2 [16.6; 19.9]	21 [19.3; 22.8]	4.7 [3.9; 5.5]	12.3 [10.9; 13.9]

Note: Pooled sample weighted so that each country counts equally.

Human capital variables include education (categories primary and lower secondary education, upper secondary education, post-secondary non-tertiary education, and tertiary education), years in paid work, and unemployment in the past 12 months. The model also includes variables on the characteristics of individuals' jobs, including industry (categories extractive services and manufacturing, construction, trade, accommodation and food services, professional services, public services, and other services including private households¹⁶) and working in a small firm (10 employees or less). To capture occupational status, an internationally comparable measure of occupational status is used, the International Socio-Economic Index (ISEI) 2008 (De Graaf, Treiman and Ganzeboom, 1992), derived from two-digit ISCO-08 codes. All models are run separately by gender.

To examine effects across the wage distribution, quantile regressions (Koenker and Bassett, 1978) are estimated for all deciles of the distribution, using log gross hourly wages as the dependent variable. Quantile regressions supplement the conditional mean function with conditional median and other quantile functions to analyse the complete conditional wage distribution (Mertens and McGinnity, 2005; Angrist and Pischke, 2009). In a first step, the quantile regressions are run for the pooled sample of seven countries, to examine the average pattern across Western Europe.¹⁷ In a second step, the models are run separately for each country to examine whether individual countries diverge from the main pattern.

Selection on unobservable characteristics may be an issue, as only labour market participants are observed, and individuals select into atypical employment (Comi and Grasseni, 2012). In the absence of panel data, a Heckman two-step model is most commonly used to correct for such bias (Heckman, 1979). To estimate the selection term, the exclusion restriction requires a

variable that affects the propensity to work (in atypical employment), but is unrelated to wages (Wooldridge, 2002). Instruments available in the EU-SILC data—such as family circumstances—likely do not fulfil this requirement. In fact, in this research context, the assumptions involved in the Heckman approach may be stronger than the OLS exogeneity assumption (Manning and Petrongolo, 2008). Furthermore, there remain serious challenges associated with adopting selection correction methods for quantile regression (Koenker, 2017). Therefore, no selection correction is employed.

Results

Wage Differences between Atypical and Standard Workers across the Wage Distribution: What Is the Average Pattern?

In a first step, quantile regressions on log gross hourly wages were run for the pooled country sample.¹⁸ Figure 1 shows the quantile regression coefficients on temporary employment, relative to permanent employment, at all deciles of the wage distribution.¹⁹ While temporary employment is generally associated with wage penalties relative to permanent employment across the wage distribution, these penalties change substantially across deciles. Wage penalties are largest at the bottom of the wage distribution, reaching up to 21 per cent for men and 21.3 per cent for women. In contrast, penalties decrease significantly towards the upper deciles of the wage distribution, and even become statistically insignificant at some top deciles.

Figure 2 shows the corresponding results for part-time employment. As for temporary employment, wage gaps associated with part-time employment become more positive towards the upper end of the wage distribution. However, part-time wage penalties are only

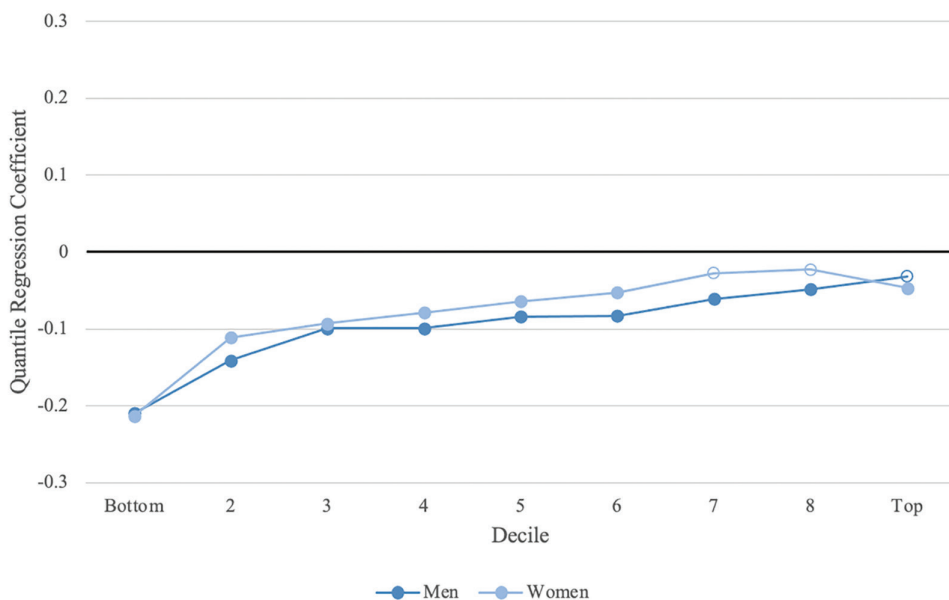


Figure 1. Regression coefficients on temporary employment relative to permanent employment in quantile regressions on log gross hourly wages at every wage decile, pooled country sample

Notes: Hollow dots indicate statistical insignificance. Filled dots indicate significance at 5 per cent. Results for employees aged 16–64. Coefficients include controls for age, cohabitation, children aged 0–5, children aged 6–17, education, years in work, unemployment in past 12 months, industry, firm size, occupation (ISEI), and country fixed effects. Coefficients indicate results for temporary employment relative to permanent employment. Proportion of temporary workers by decile (*N*, per cent): men: bottom—998, 37.6 per cent; 2—664, 25 per cent; 3—450, 16.4 per cent; 4—340, 13.2 per cent; 5—258, 9.3 per cent; 6—189, 7.5 per cent; 7—180, 6.8 per cent; 8—117, 4.4 per cent; 9—83, 3.1 per cent; top—83, 3.1 per cent; women: bottom—871, 34.6 per cent; 2—676, 26.6 per cent; 3—458, 18.5 per cent; 4—396, 14.8 per cent; 5—271, 11.5 per cent; 6—233, 9.3 per cent; 7—206, 8.2 per cent; 8—135, 5.4 per cent; 9—99, 3.9 per cent; top—107, 4.3 per cent.

observed at the lower end of the wage distribution, particularly for men. In contrast, no significant wage differences between part-time and full-time workers are observed at the upper deciles of the wage distribution. In fact, at the top of the distribution, there is some evidence of wage premiums for female part-time workers.²⁰

Overall, the patterns observed align with the theoretical expectations. The decreasing wage penalties associated with temporary employment at the upper deciles of the wage distribution may be explained by the heterogeneity of temporary jobs, particularly in occupations. While temporary workers at the lower deciles of the wage distribution may be located in the external labour market segment associated with lower bargaining power and wages, temporary contracts are also common for some professional workers in the upper tier of the internal segment. Table 2 shows the mean ISEI of temporary and permanent workers across the wage distribution. Indeed, the occupational status of temporary workers substantially increases with wage quintiles. Moreover, while temporary workers in lower quintiles, particularly men, are in lower-status occupations relative to permanent workers, this disadvantage disappears in the upper quintiles.

To further elucidate the role of occupations in influencing wage gaps, Table 3 shows quantile regression coefficients on temporary employment at select deciles for a baseline model without controls and a model excluding occupation only, compared to the full model.²¹ While, as expected, adding controls to the model substantially reduces the wage penalty associated with temporary employment, the addition of occupation leads to a further reduction. In particular, occupation plays a significant role at the upper deciles of the wage distribution. This lends support to the theory set out—within highly skilled, professional occupations at the top of the wage distribution, temporary employment is less of a disadvantage. In contrast, occupation is a less significant distinguishing factor in lower-waged jobs, where substantial disadvantages are associated with temporary employment even within occupations.

However, even at most higher deciles of the wage distribution, temporary workers do still experience wage penalties relative to permanent workers. Possibly, measurement error or unobserved heterogeneity play a role here. In particular, EU-SILC does not include information on occupations beyond ISCO 2-digit level, so detailed information on occupational status could not be derived. As occupations play a significant role

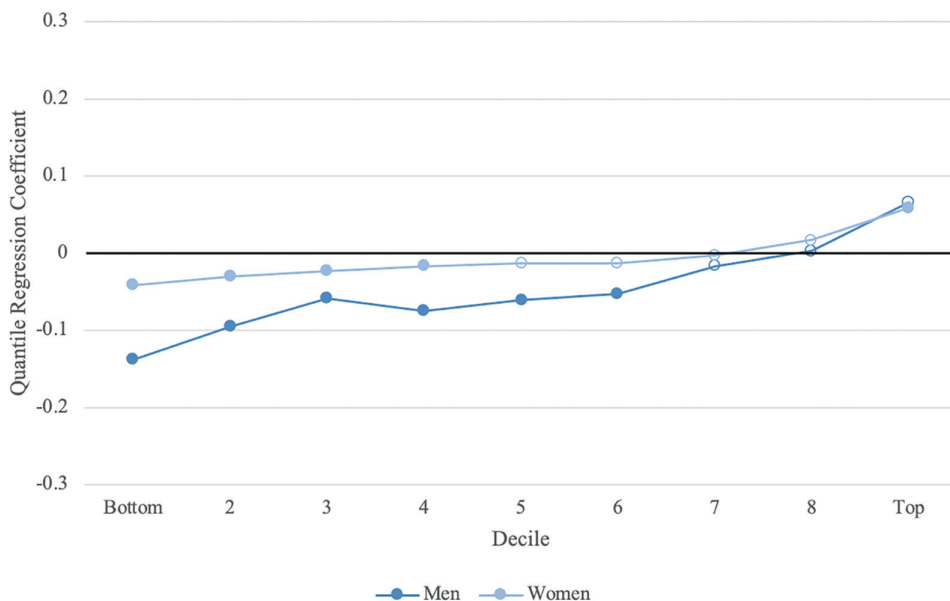


Figure 2. Regression coefficients on part-time employment relative to full-time employment in quantile regressions on log gross hourly wages at every wage decile, pooled country sample. Notes: Hollow dots indicate statistical insignificance. Filled dots indicate significance at 5 per cent. Results for employees aged 16–64. Coefficients include controls for age, cohabitation, children aged 0–5, children aged 6–17, education, years in work, unemployment in past 12 months, industry, firm size, occupation (ISEI), and country fixed effects. Coefficients indicate results for part-time employment relative to full-time employment. Proportion of part-time workers by decile (*N*, per cent): men: bottom—235, 10.4 per cent; 2—213, 9.4 per cent; 3—219, 9.6 per cent; 4—142, 6.3 per cent; 5—102, 4.5 per cent; 6—109, 4.8 per cent; 7—109, 4.8 per cent; 8—110, 4.9 per cent; 9—114, 5 per cent; top—142, 6.3 per cent; women: bottom—399, 15.9 per cent; 2—526, 20.7 per cent; 3—754, 30.4 per cent; 4—737, 27.6 per cent; 5—654, 27.7 per cent; 6—646, 25.8 per cent; 7—689, 27.3 per cent; 8—717, 28.6 per cent; 9—806, 32.1 per cent; top—976, 38.9 per cent.

Table 2. Mean ISEI score by quintile of the wage distribution and temporary employment status, weighted sample (Employees 16–64)

Employment status	Quintile				
	1	2	3	4	5
Men					
Temporary	34.8 (0.6)	34.6 (0.8)	40.7 (1.4)	48.8 (1.6)	57 (1.4)
Permanent	37.4 (0.5)	38 (0.3)	42.7 (0.4)	49.3 (0.3)	57.5 (0.3)
Women					
Temporary	33.3 (0.6)	33 (0.8)	41.9 (1.2)	49.2 (1.2)	57.13 (1.6)
Permanent	33.1 (0.4)	35.6 (0.3)	43.4 (0.3)	50.4 (0.3)	55.8 (0.3)

Note: Standard error in parentheses.

in influencing wage penalties, this could influence the observed effects. Nevertheless, temporary workers may also experience ‘genuine’ wage disadvantages even at the top of the wage distribution. In this sense, as previously theorized, temporary employment could have inherent disadvantages for most temporary workers, though the scale of disadvantage differs across the wage distribution.

Similarly, the observed wage differences between part-time and full-time workers reflect the theory set out. While workers in secondary part-time jobs at

the lower end of the wage distribution have inferior labour market standing and accordingly experience wage penalties, higher-waged retention part-time jobs are not associated with wage disadvantages. In fact, there is some evidence of wage premiums for women at the upper end of the wage distribution. Analogous to Table 2, Table 4 shows the mean occupational status of part-time and full-time workers by wage quintile. As for temporary employment, the occupational status of part-time workers increases significantly across the wage distribution, though some disadvantage relative

Table 3. Regression coefficients on temporary employment relative to permanent employment in quantile regressions on log gross hourly wages at select wage deciles, various model specifications, pooled country sample

Decile	Men				Women			
	2	4	6	8	2	4	6	8
Model 1								
Temporary employment	-0.272***	-0.301***	-0.318***	-0.288***	-0.215***	-0.208***	-0.234***	-0.205***
Standard error	(0.021)	(0.016)	(0.017)	(0.020)	(0.016)	(0.015)	(0.021)	(0.028)
N	26,557	26,557	26,557	26,557	25,125	25,125	25,125	25,125
Model 2								
Temporary employment	-0.171***	-0.108***	-0.106***	-0.089***	-0.146***	-0.109***	-0.089***	-0.050**
Standard error	(0.018)	(0.013)	(0.017)	(0.020)	(0.018)	(0.019)	(0.018)	(0.020)
N	26,557	26,557	26,557	26,557	25,125	25,125	25,125	25,125
Model 3								
Temporary employment	-0.141***	-0.099***	-0.083***	-0.049**	-0.111***	-0.079***	-0.053***	-0.023
Standard error	(0.025)	(0.013)	(0.016)	(0.024)	(0.020)	(0.016)	(0.015)	(0.015)
N	26,557	26,557	26,557	26,557	25,125	25,125	25,125	25,125

Notes: Baseline model shows coefficients on temporary employment from quantile regressions on log gross hourly wages at select deciles without controls. M2 additionally includes age, education, cohabitation, own children aged 0–5 and 6–17 in household, years in paid work, unemployment in past 12 months, industry, and firm size. M3 further includes occupation (ISEI). All models include country fixed effects. ** $P < 0.05$, *** $P < 0.01$.

to full-time workers remains in top quintiles, particularly for women. As theorized, differences in occupational status are a key distinguishing factor between part-time workers across the wage distribution.

In addition, to further discern the role of occupations in influencing wage differences, Table 5 shows the model coefficients on part-time employment in the baseline model, the model excluding occupation and the full model. In fact, occupation plays a substantial role, to a somewhat larger extent than for temporary employment. Across the wage distribution, including occupation in the model reduces wage penalties to a large extent. At the top deciles, it is typically only after the addition of occupation that non-significant differences and premiums—the latter for women at the ninth decile, as shown in Figure 2—emerge. Going back to the theoretical framework, this confirms the expectation that within occupations, high-earning workers in retention part-time jobs do not face wage disadvantages relative to full-time workers, or may even attract wage premiums, which could be traced back to firms trying to attract and retain these highly skilled workers at a lower hourly basis (Tönurist and Pavlopoulos, 2013).

Moreover, for men, part-time wage penalties are larger and more persistent across the wage distribution than for women, likely due to male part-time work being less common in labour markets, and therefore associated with a lower level of labour market integration. In contrast, wage penalties for female part-time workers are substantially smaller and only found at the bottom wage deciles. These results are situated within

a broader literature suggesting that, particularly for better-off female part-time workers, part-time work may be a choice rather than constraint (Hakim, 2002), though choices are situated within a context of human capital, partner preferences, and institutional support (Kangas and Rostgaard, 2007). However, this correlational analysis cannot identify whether part-time work is indeed a choice.

While wage gaps associated with temporary and part-time employment change in similar ways along wage deciles, penalties associated with temporary employment are much more pronounced and lasting across the distribution. This observation can be related back to differences between these employment relationships. In particular, part-time employment is associated with better employment protection and lower societal stigma than temporary employment, especially for women. Indeed, part-time work is more common for women in the middle and upper parts of the wage distribution, rather than being a low-wage phenomenon (see note to Figure 2). As such, wage penalties associated with part-time employment are concentrated at the lower end of the wage distribution, where secondary part-time workers have lower labour market standing.

To What Extent Is There Country Variation around the Average Pattern?

As a supplementary analysis to the European patterns detailed previously, the quantile regressions were run separately by country to investigate the extent of

Table 4. Mean ISEI score by quintile of the wage distribution and part-time employment status, weighted sample (Employees 16–64)

Employment status	Quintile				
	1	2	3	4	5
Men					
Part-time	31.8 (0.8)	34.3 (1)	35.8 (2.8)	44.8 (1.7)	53.5 (1.5)
Full-time	37.1 (0.4)	39.2 (0.4)	44.1 (0.4)	50.6 (0.3)	58 (0.3)
Women					
Part-time	31 (0.7)	31.4 (0.4)	38.5 (0.6)	44.9 (0.6)	51 (0.5)
Full-time	34.1 (0.4)	37.5 (0.4)	45.4 (0.4)	52.5 (0.4)	58 (0.3)

Note: Standard error in parentheses.

Table 5. Regression coefficients on part-time employment relative to full-time employment in quantile regressions on log gross hourly wages at select wage deciles, various model specifications, pooled country sample

Decile	Men				Women			
	2	4	6	8	2	4	6	8
Model 1								
Part-time employment	-0.233***	-0.257***	-0.231***	-0.229***	-0.092***	-0.134***	-0.125***	-0.111***
Standard error	(0.038)	(0.020)	(0.050)	(0.063)	(0.011)	(0.011)	(0.013)	(0.017)
N	22,628	22,628	22,628	22,628	25,125	25,125	25,125	25,125
Model 2								
Part-time employment	-0.167***	-0.122***	-0.149***	-0.072	-0.067***	-0.067***	-0.061***	-0.042***
Standard error	(0.032)	(0.037)	(0.027)	(0.048)	(0.011)	(0.010)	(0.010)	(0.014)
N	22,628	22,628	22,628	22,628	25,125	25,125	25,125	25,125
Model 3								
Part-time employment	-0.095**	-0.075***	-0.053**	0.003	-0.030***	-0.017**	-0.013	0.017
Standard error	(0.042)	(0.023)	(0.024)	(0.022)	(0.010)	(0.008)	(0.009)	(0.011)
N	22,628	22,628	22,628	22,628	25,125	25,125	25,125	25,125

Notes: Baseline model shows coefficients on part-time employment from quantile regressions on log gross hourly wages at select deciles without controls. M2 additionally includes age, education, cohabitation, own children aged 0–5 and 6–17 in household, years in paid work, unemployment in past 12 months, industry, and firm size. M3 further includes occupation (ISEI). All models include country fixed effects. ** $P < 0.05$, *** $P < 0.01$.

commonalities across countries in the results. Country differences could be explained by national labour market structures and institutions, which shape labour market segmentation between atypical and standard workers and accordingly, the extent of disadvantage associated with atypical work. Indeed, scholarship has elaborated on how labour market institutions, such as employment protection legislation, collective bargaining and unemployment protection, and active labour market spending influence the bargaining power of workers, their location in the secondary labour market segment and accordingly, wage differences (e.g. Häusermann and Schwander, 2012; Biegert, 2019). However, this article does not seek to provide comprehensive explanations relating to country variation in wage patterns, but rather to provide additional nuance to the main European results shown earlier. While the

conclusion offers some discussion on potential reasons for country variation, to the extent that it is observed, further investigation is left to future research.

Figure 3 shows the quantile regression coefficients on temporary employment in regressions on log gross hourly wages by deciles of the distribution, for individual countries and the pooled sample, as a reference point.²² As described previously, in the pooled sample, wage penalties associated with temporary employment decrease substantially, but remain mostly statistically significant towards the upper end of the wage distribution. Overall, this pattern does apply in most countries. Nevertheless, there are some interesting country differences.

In the majority of countries—the United Kingdom, Switzerland, Austria, Italy, and Greece—there are wage penalties associated with temporary employment

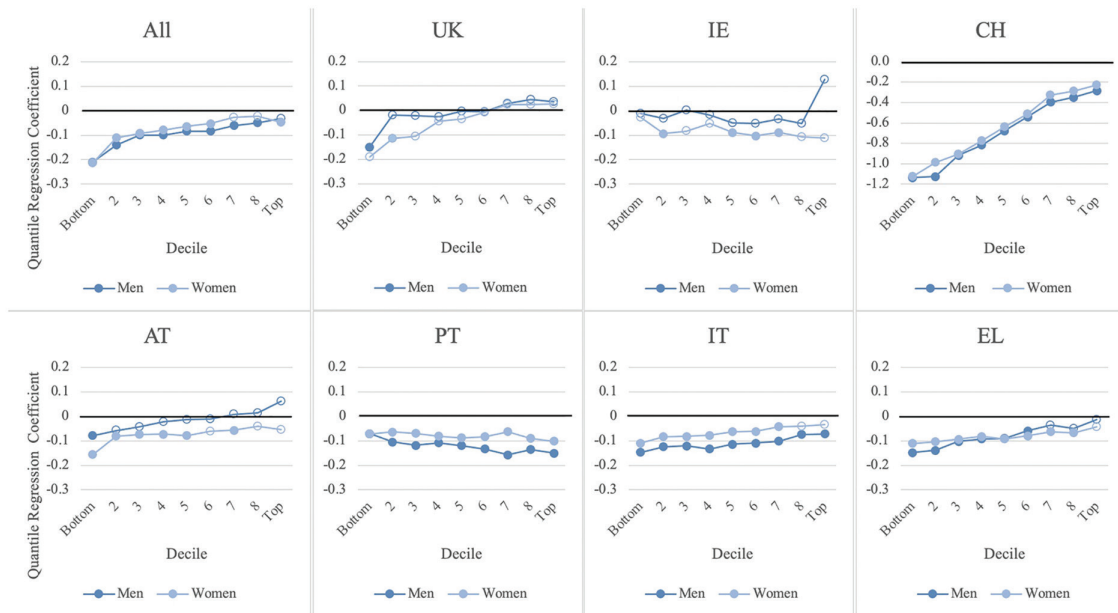


Figure 3. Regression coefficients on temporary employment relative to permanent employment in quantile regressions on log gross hourly wages at every wage decile in individual countries. Notes: Hollow dots indicate statistical insignificance. Filled dots indicate significance at 5 per cent. Results for employees aged 16–64. Coefficients include controls for age, cohabitation, children aged 0–5, children aged 6–17, education, years in work, unemployment in past 12 months, industry, firm size, occupation (ISEI) and country fixed effects for pooled models. Coefficients indicate results for temporary employment relative to permanent employment.

relative to permanent employment, which decrease towards the upper end of the wage distribution. However, the scale of penalties differs relative to the average pattern in some countries. In Switzerland, though the overall pattern matches the pooled sample, the wage penalties are much larger than in other countries. Conversely, in the United Kingdom and for Austrian men, wage penalties associated with temporary employment are smaller and only significant at the bottom deciles, while there are no significant wage differences between temporary and permanent workers at other points of the wage distribution. In these two countries, as shown previously, the proportion of temporary workers is much smaller than elsewhere. Moreover, the number of temporary workers—as in all countries—decreases significantly in upper quintiles of the wage distribution.²³ Hence, the few temporary workers in the middle and top of the wage distribution are likely highly selected. This may explain why they do not face wage penalties like those in the lower end.

In addition, while most countries match the average pattern, despite differences in scale, there are some exceptions, namely Portugal and Ireland. In Portugal, wage penalties associated with temporary employment do not change systematically across the wage distribution. This pattern matches the findings of [Comi and Grasseni \(2012\)](#), where wage penalties associated with temporary employment in Portugal do not change

across the wage distribution. In Ireland, in contrast, male temporary workers do not experience wage penalties relative to permanent workers, whereas female ones do, but the pattern is unsystematic. The number of female temporary workers at the top of the wage distribution is very low in Ireland. Hence, the somewhat erratic patterns at the top of the wage distribution could be driven by select observations.

In summary, most countries in the sample match the average pattern of decreasing wage penalties associated with temporary employment across the wage distribution, though there are differences in scale. In particular, a wage penalty is observed at the bottom of the wage distribution in almost all cases, while stronger country variation is found around the middle and top of the wage distribution. These patterns broadly match the results of the only previous cross-national study on this issue, [Comi and Grasseni \(2012\)](#), though their analysis was not disaggregated by gender. In some countries, the proportion of temporary workers—and the underlying number of observations in the sample—at the upper end of the wage distribution are very low. Hence, in some cases, idiosyncratic reasons could be driving the variation at the top deciles.

[Figure 4](#) shows the quantile regression coefficients on part-time employment, for the pooled sample and individual countries. More than with temporary employment, a pattern of commonalities dominates.

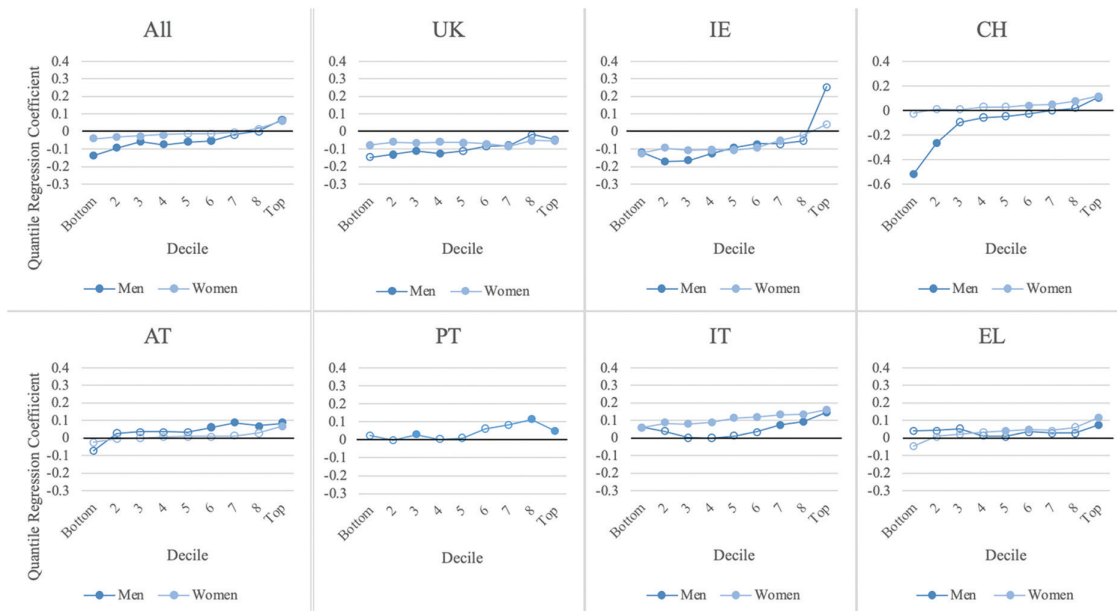


Figure 4. Regression coefficients on part-time employment relative to full-time employment in quantile regressions on log gross hourly wages at every wage decile in individual countries/Notes: Hollow dots indicate statistical insignificance. Filled dots indicate significance at 5 per cent. Results for employees aged 16–64. Coefficients include controls for age, cohabitation, children aged 0–5, children aged 6–17, education, years in work, unemployment in past 12 months, industry, firm size, occupation (ISEI), and country fixed effects for pooled models. Coefficients indicate results for part-time employment relative to full-time employment.

In most countries, including Ireland, Switzerland, Austria, Greece, and the United Kingdom (particularly for men), wage differences between part-time and full-time workers become more positive towards the upper deciles of the income distribution, with wage penalties or non-significant differences observed at the bottom of the wage distribution and, sometimes, premiums at the top. This general pattern is also observed in Portugal, apart from a small but significant wage premium at one select decile in the lower third of the wage distribution. Part-time work in Portugal is a relatively marginal labour market phenomenon even for women,²⁴ and selectivity in observed part-time workers may drive this somewhat erratic result. In Switzerland, similarly to the case of temporary employment, the low-wage penalty associated with male part-time employment is larger than elsewhere. However, the difference in scale is somewhat less pronounced than for temporary employment.

Though no previous studies on part-time wage gaps across the wage distribution exist for the countries examined, similar patterns were found in two studies on Germany (Tönurist and Pavlopoulos, 2013; Gallego-Granados, 2019). One outlier case is Italy—here, wage premiums associated with part-time work are observed across the wage distribution, particularly for women. Nevertheless, the predominant pattern is one of commonality. In most countries, there are wage penalties

associated with part-time employment at the bottom of the wage distribution, but these gaps become insignificant or turn into premiums towards higher deciles.

It should also be noted that the proportion of male part-time workers decreases significantly towards the top of the wage distribution. The skewed distribution of male part-time workers may influence the results observed, in that the significant wage premiums observed could be driven by a very small proportion of observations in some countries. Hence, the results for male part-time workers at the top end of the wage distribution should be interpreted with caution. In contrast, female part-time work is evenly spread across the wage distribution. This illustrates the point made earlier, that female part-time work is a well-established and non-marginal labour market phenomenon, which likely explains why it is not associated with wage penalties, particularly in the middle and top of the wage distribution.

Conclusions

This article, based on EU-SILC data for seven European countries, has provided a detailed analysis of wage gaps associated with temporary and part-time employment across the wage distribution. On average across Western Europe, temporary employment is associated with wage penalties relative to permanent

employment, but these penalties decrease significantly at the top of the wage distribution, and even disappear at some high deciles. Similarly, wage differences between part-time and full-time workers also become more positive towards the top of the wage distribution. In contrast to temporary employment, however, part-time wage penalties only occur at the bottom of the wage distribution, with insignificant effects or even premiums towards the top.

The empirical analysis illuminates how theoretical mechanisms may explain wage differences between atypical and standard workers across the wage distribution. In particular, according to labour market segmentation theory, atypical workers experience wage penalties as they are located in an external labour market segment with lower bargaining power. Crucially, however, both temporary and part-time work are heterogeneous and in themselves segmented. For instance, occupation is a central differentiating factor within temporary and part-time employment. While some atypical jobs, particularly in temporary and male part-time work, are located in the external labour market at the bottom of the wage distribution and associated with wage penalties, this is not the case for all.

Nevertheless, even at the top of the wage distribution, most temporary workers experience wage penalties relative to permanent workers. Therefore, some inherent labour market disadvantage appears to be associated with temporary employment, rather than higher-earning temporary workers claiming compensating differentials for disadvantages associated with this employment relationship. In contrast, wage penalties were not observed for high-earning part-time workers, who in some cases claim wage premiums relative to permanent workers. These part-time workers work in higher-skilled retention part-time jobs, where firms offer wage incentives to retain experts on a lower hourly basis. The results reflect that part-time work, particularly for women, is more established and protected in European labour markets than temporary employment.

This article also studied whether these patterns are systematic across Europe. While the aim of this analysis was not to develop or test definitive explanations for any variation observed, some tentative interpretations may be offered to identify points of interest for future research. For temporary employment, a low-wage penalty was identified in almost all countries, with larger variation around the middle and top of the wage distribution. However, the scale of penalties differs. In particular, wage penalties were much larger in Switzerland than in other countries. There, the proportion of temporary workers is much higher in the bottom quintile than elsewhere, a starker difference than in other countries. As such, in Switzerland in particular, temporary

employment is primarily a low-pay phenomenon. In the context of the low-regulated Swiss economy, characterized by very high wage flexibility (Fritsch and Verwiebe, 2018), this could drive the particularly large wage penalties associated with it.

Though the overall result is country commonality in the main pattern, if not in scale, there were also some deviating cases. One surprising finding is that in Portugal, wage penalties associated with temporary employment do not change systematically across the wage distribution. While this result is consistent with previous research, decreasing wage penalties would have been expected, given that the Portuguese labour market is strongly segmented and characterized by stark differentiations in protections between temporary and permanent contracts (ILO, 2018). Though the possibility of measurement error cannot be excluded, further country-specific empirical work on the Portuguese case would be needed to explain these findings.

Relative to temporary employment, part-time wage gaps were more systematic across most countries, though some differences in scale and pattern remain. A pertinent outlier case, however, was Italy, where wage premiums associated with part-time work were observed across the wage distribution. In Italy, part-time work expanded much later than elsewhere in Europe as a response to severe constraints on the core labour market and increasing labour market dualization (Maestripieri and Léon, 2019). Part-time workers tend to be less included in the core labour market, experience particularly strong occupational segregation and have less job security. One explanation for the premiums observed is that the non-wage attributes of part-time work are likely more undesirable in Italy than in other countries, so that part-time workers across the distribution may have more scope to claim compensating differentials, resulting in a part-time wage premium (Pissarides, 2005). If this were the case, the underlying theoretical mechanism would be different from the framework outlined in the main body of this article, where premiums are claimed by workers in high-quality retention part-time jobs. However, other mechanisms beyond what was addressed in this exploratory article may also be at play. Future research may examine the specific Italian case in a more detailed manner, also making use of country-specific data.

Indeed, future work could extend these results in several ways. First, it would be desirable to extend this analysis to more countries. This would enable a more systematic investigation of country commonalities and differences, moving beyond the predominantly descriptive and exploratory country-level account provided in this article. In addition, country case studies using richer data could consider selection on unobservable characteristics and the role of

attitudes and preferences, as well as examining the role of institutional context in depth. Finally, due to data limitations, this analysis could not include all types of atypical employment, including multi-employment relationships and dependent self-employment. It would be desirable to extend the analysis to these employment relationships.

Overall, wage patterns associated with atypical employment are diverse and complex. This illustrates that temporary and part-time employments are highly different employment relationships, regarding the composition of individuals in such employment, their labour market standing relative to standard workers and their wages. Indeed, to a large extent, the dividing line between workers that structures wage disparities may lie in characteristics, such as occupation, rather than the employment relationship itself. This heterogeneity should be considered when theorizing as to the bargaining power and (dis)advantages associated with atypical employment. As such, the use of umbrella terms, such as ‘atypical’ employment is of limited usefulness when examining changing labour market relationships.

Notes

- 1 Some professional jobs, for instance in early-career academia (e.g. OECD, 2021), are increasingly precarious and unstable. Hence, some professional occupations may not be part of the primary sector, particularly among younger workers.
- 2 Unfortunately, EU-SILC cross-sections cannot be pooled, as they contain some repeated observations, which cannot be identified (Iacovou, Kaminska and Levy, 2012).
- 3 These include Bulgaria, Hungary, Poland, and Serbia. Data on hourly wages are not available for the other post-socialist countries.
- 4 Another country, Iceland, was excluded due to the small sample size.
- 5 Dataset preparation drew on documentation by GESIS (2016) and Goedemé (2019).
- 6 Defining the sample as employees 25–64 did not substantially change results.
- 7 All information refers to the main job. Unfortunately, data on second jobs are not available.
- 8 The dataset used, EU-SILC, does not capture the other significant types of atypical employment, multi-employment relationships or dependent self-employment. Therefore, the analysis focuses on part-time and temporary employment.
- 9 The results of this robustness check are presented in the Supplementary Appendix Figures S3 and S4.
- 10 There is some overlap between temporary and part-time employment (Supplementary Appendix Table S3). A robustness check (Supplementary Appendix Figures S5–S8) including both jointly did not substantially change results.
- 11 The order of countries in tables and figures roughly follows the institutional configurations they belong to Esping-Andersen (1990) and Soskice and Hall (2001).
- 12 The Supplementary Appendix Tables S1 and S2 provide statistics on the distribution of the dependent variable for atypical and standard workers in the pooled sample and individual countries.
- 13 Earnings data were top- and bottom coded at 0.1 per cent. Changing the level of trimming did not substantially change results.
- 14 Monthly hours are constructed as (weekly hours×52)/12.
- 15 In the United Kingdom, it refers to the current year and in Ireland, to the previous 12 months.
- 16 The categorization is as follows: Extractive services and manufacturing—NACE A–E; Construction—NACE F; Trade, accommodation and food services—NACE G–I; professional services—NACE J–N; public services—NACE O–Q; other services—NACE R–U.
- 17 Wages are adjusted by purchasing power parity to account for differences in price level across countries. Pooled country models are weighted so that each country counts equally. Alternatively, the Supplementary Appendix Figures S1 and S2 present models weighted according to population size.
- 18 To check for consistency with past literature, logit regressions examining the characteristics of temporary and part-time workers (Supplementary Appendix Table S4) and OLS wage regressions with part-time and temporary employment as the main explanatory variable (Supplementary Appendix Table S5) were run on the pooled sample. The patterns found align with past research (Bardasi and Gornick, 2008; Manning and Petrongolo, 2008; Giesecke, 2009; Baranowska and Gebel, 2010).
- 19 Full regression results for the pooled sample are shown in the Supplementary Appendix Tables S6–S9.
- 20 Using an hours-based definition of part-time work, the observed patterns are similar overall, though wage penalties for part-time workers are less pronounced. Differences likely relate to the fact that the hours-based definition may not accurately reflect part-time work in some countries.
- 21 The Supplementary Appendix Tables S10–S17 show the full models for both temporary and part-time employment for all deciles.
- 22 The Supplementary Appendix summarizes the quantile regression coefficients for temporary (Supplementary Tables S18–S24) and part-time (Supplementary Tables S25–S31) employment by country.
- 23 The Supplementary Appendix Tables S32 and S33 show the proportion and sample observations of temporary workers across the wage distribution by country.
- 24 The Supplementary Appendix Tables S34 and S35 show the proportion and sample observations of part-time workers across the wage distribution by country.

Supplementary Data

Supplementary data are available at *ESR* online.

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