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Involuntary part-time employment: perspectives from two European labour markets

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Discussion Paper No. 15/02
January 2015

Poverty Reduction in Europe:
Social Policy and Innovation

FUNDED BY THE
7TH FRAMEWORK PROGRAMME OF THE EUROPEAN UNION

Acknowledgements

The authors would like to thank the participants at the Project Meeting in Budapest (November 2014), and in particular Tim Goedemé, Jeroen Horemans, Olga Rastrigina, and Panos Tsakloglou, for useful comments and suggestions on a previous version of the paper. The research reported here has been financially supported by the European Union Seventh Framework Programme (FP7/2012-2016) under the ImPRovE project (grant agreement n. 290613). The usual disclaimer applies.

January 2015

Bibliographic Information

Michail Veliziotis, Manos Matsaganis & Alexandros Karakitsios (2015), Involuntary part-time employment: perspectives from two European labour markets. ImPRovE Working Paper No. 15/02. Antwerp: Herman Deleeck Centre for Social Policy – University of Antwerp.

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Abstract

Part-time employment in Europe has continued to grow faster than overall employment during the Great Recession and its aftermath. But as part-time work becomes more prevalent, so does involuntary part-time – at least in most countries. In this paper we focus on Greece and the UK, two European labour markets characterised by different institutions, but also a common trend of rising involuntary part-time (from different levels). We attempt to detect determinants and/or correlates of involuntary part-time, and changes over time. We analyse Labour Force Survey data for 2008 and 2013. We find that the UK labour market appears to be more successful in aligning workers' preferences with employers' demand for part-time work. However, as the economic downturn has made full-time jobs scarcer, involuntary part-time work has risen. Moreover, significant gaps in pay and job quality between voluntary and involuntary part-timers persist. In the case of Greece, involuntary part-time was already very high in 2008, in spite of the fact that pay differentials were relatively small, which suggests that part-time jobs were widely viewed by workers as sub-optimal. Under the impact of the recession and the austerity, the Greek labour market has become more flexible but also more insecure. As pay differentials have risen, and non-standard work has been made more precarious, part-time jobs have become even less attractive, so involuntary part-time has grown further still. We conclude that while the structure of the economy and the business cycle explain some of the differences between the two countries and over time, institutional factors and the quality of part-time jobs on offer are of great importance in shaping workers' attitudes. We suggest that future research should focus on the interaction between shocks and institutions.

Keywords: Part-time work; involuntary part-time; job quality; Greece; UK; economic crisis

JEL codes: J21, J41, J80

1 Introduction

In the aftermath of the Great Recession, part-time employment is on the rise in Europe and beyond. To some extent, this is to be expected. When firms face reduced demand for their products, the demand for labour falls along the intensive margin (reducing the number of hours worked), as well as along the extensive margin (reducing the number of workers employed). The combined result of both is a rising share of part-time jobs in all employment.

In Europe, this seems to reinforce a monotonically rising trend going back to the early 1980s or before. Indeed, the share of part-time employment in the EU15 has grown during good times and bad, in every single year over the last two decades or so for which data are available, from 15.6% in 1995 to 22.8% in 2013.[1] Looking at individual countries, and comparing 2013 to 1983, the share of part-time in all jobs grew by 7 percentage points in the UK, 9 in France, 14 in Germany and Italy, 16-17 in Belgium and Ireland, and by as much as 29 percentage points in the Netherlands (where part-time jobs in 2013 accounted for exactly 50% of all jobs). Between 2008 and 2013, the number of part-time jobs went up by 3.1m (+8.0%) in the EU28, just as the number of full-time jobs dropped by 9.4m (-5.2%) over the same period. In view of that, part-time employment in Europe accounted for 19.5% of total employment in 2013, up from 17.5% in 2008.

This contrasts somewhat with the experience of the US, where the relative weight of part-time work has tended rather to fluctuate with the business cycle. Nevertheless, after the Great Recession, when it peaked at 19.7% in 2010, part-time work has remained high, which suggests that structural factors may also be at work. As Tilly (1996) has pointed out, the rise of part-time work in the longer term can be attributed on the one hand to changes in the industry composition of the US economy, with industries traditionally employing a higher proportion of part-time workers (such as retail trade and other services) growing in importance, and on the other hand to a greater tendency of firms to make greater use of part-time workers in all industries. However, as argued more recently (Valletta and Bengali, 2013), current levels of part-time work are not exceptionally high by historical standards, given that the corresponding figure for 1983 was 20.3% (using consistent data), so the persistence of part-time work may simply reflect a slower than usual labour market recovery.

Against this background, the proportion of those working part-time when they actually prefer a full-time job, i.e. in what is defined as 'involuntary part-time", has also gone up. In Europe, in particular, this is something of a common trend, observed in national labour markets that differ greatly among each other in most respects. Still, although *trends* are similar, significant cross-country variation in *levels* persists. In general, the prevalence of involuntary part-time work seems inversely related to that of part-time work as a whole. In other words, involuntary part-time employment appears to be lower (higher) where part-time employment is more (less) prevalent (OECD, 2010; Wielers et al., 2014).

The paper is an attempt to shed some light on involuntary part-time employment and its determinants, or at least its correlates, in the context of the Great Recession. Unlike most studies of involuntary part-time, we adopt a comparative perspective. We contrast and compare the UK and Greece, two very different European labour markets in terms of performance and institutions, yet sharing a recent increase in involuntary part-time work.

As a matter of fact, the UK labour market is generally regarded as significantly flexible by European standards, relying on a considerable amount of part-time employment, but relatively free of the deep segmentation often seen elsewhere in Europe. In contrast, in Greece the demarcation line separating a core of over-protected insiders and a mass of precariously employed outsiders, as well as an intermediate group of under-protected 'mid-siders' (Jessoula et al., 2010) is more sharply

[1] All statistics in this section are from the Eurostat online database; see: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.

drawn. Moreover, while non-standard workers in the UK can expect to be covered by a range of social provisions (such as a minimum wage, universal health care, unemployment insurance, and in-work benefits), in Greece such provisions typically lie beyond the reach of workers in atypical employment. Protection gaps there have become wider under the twin impact of the current crisis, and of reforms that have made the labour market more flexible and at the same time more insecure (Matsaganis, 2011 and 2013).

Different approaches to labour market regulation show up both in the extent of part-time employment (high in the UK, low in Greece), and in the degree to which it is involuntary (low in the UK, high in Greece). However, trends in involuntary part-time are similar in the two countries (rising steeply in both), even though from very different levels. Specifically, the number of part-time jobs in the UK grew by 384 thousand (or by +5.5%) in 2008-2013, even though total employment in 2013 was only slightly above its 2008 level (by 127 thousand, a change of +0.4%).[2] As a result of that, the share of part-time jobs reached 25.4% of all jobs in 2013, up from 24.2% in 2008. But the rise in involuntary part-time employment has been nothing short of spectacular. As a proportion of all part-time jobs, it almost doubled between 2007[3] and 2013, from 10.6% to 20.3%. On the other hand, in Greece the recession was longer and deeper than everywhere else, resulting in a loss of over 1 million jobs in 2008-2013 (a change of -23.5%). Nevertheless, the number of part-time jobs actually *grew* by 44 thousand, from a low base (hence by +17.7%). As a result, part-time jobs amounted to 8.4% of all jobs in 2012, compared to 5.4% in 2008. Meanwhile, involuntary part-time employment increased sharply between 2008 and 2013, from 44.1% to 68.2% of all part-time jobs.

The structure of the remainder of this paper is as follows: Section 2 presents a framework for our analysis of part-time work and, specifically, involuntary part-time work, based on the related literature. Section 3 describes our data and the methodology we use, while Section 4 presents a descriptive analysis of involuntary part-time work in the UK and Greece. Section 5 proceeds with the regression analysis. Finally, Section 6 concludes.

2 Background

Workers in involuntary part-time jobs can be seen as under-employed, and involuntary part-time work as a form of under-utilized labour. This is the standard approach adopted by academics, policy makers and others around the world when they study, measure or simply refer to involuntary part-time (see *inter alia* Stratton, 1996; Barrett and Doiron, 2001; Kauhanen, 2008; de la Fuente, 2011; Cajner et al., 2014). Most of the earlier analyses focused on involuntary part-time employment as a macro phenomenon, and on its evolution over time in a context of business cycle fluctuations (Leppel and Clain, 1988; Tilly, 1991). Not unexpectedly, overall involuntary part-time employment was found to closely follow the business cycle, rising when unemployment rises (and full-time jobs become scarcer) and falling as the economy improves (Stratton, 1996; see also Buddelmeyer et al., 2008). Again, structural factors may also be at play. For instance, Cohen and Stier (2006), examining the large rise in involuntary part-time employment in Israel during 1979-1999, noted that this long-term development could not be explained only by the rise in unemployment that was observed in this country over the same period. In contrast, the long-term rise in involuntary part-time employment appeared to be linked to changes in the preferences of workers and, especially, employers for part-time work.

Micro-analyses of the determinants and consequences of involuntary part-time employment have only recently begun to appear. Cam (2012) used a sample of part-time employees from the 2010 UK Labour Force Survey, and found that involuntary part-time status was less prevalent among married

[2] Employment contracted early in the recession; net job loss peaked in 2010, with 561 thousand jobs lost relative to 2008 (a 2% decline).

[3] Eurostat provides no data for involuntary part-time work in the UK in 2008.

(or cohabiting) women with dependent children, while men in the same family status were more likely to be involuntarily employed in a part-time job. The latter also held for employees with lower education attainment and in lower grade occupations. Kauhanen (2008) focused on the service sector in Finland and noted that women in that country were more likely to be involuntarily employed in part-time jobs, as were middle-aged workers and those with low education. Not surprisingly, involuntary part-timers could draw on fewer other sources of income, and were more likely to look for another job than full-time and voluntary part-time workers. Barrett and Doiron (2001), using Canadian data, estimated large wage gaps between involuntary part-timers and all other workers. Looking at determinants of involuntary part-time employment, the authors confirmed the expected differences between men and women in their choice of working hours, while also reporting that job characteristics were more important than personal characteristics for the selection of a worker out of the queue for full-time jobs. In contrast to the above three studies, that identified significant differences between voluntary and involuntary part-time workers in their socio-demographic characteristics, Caputo and Cianni (2001) found that US women in voluntary part-time, with few exceptions, were very similar to those in involuntary part-time jobs.[4]

Another strand in the literature, rather than focusing on involuntary part-time employment as such, deals with the desirability of part-time work in general, examining the gendered nature of part-time jobs and working women's preferences and constraints in the labour market, often using micro-level data. For example, Walsh (1999) criticized the view that part-time female employees voluntarily choose this type of work in an attempt to combine work with family commitments. Instead, part-time jobs are subject to substantial heterogeneity in terms of quality, while female workers may have various motivations, as well as different attitudes towards part-time work (and towards work *tout court*). In addition to that, as in the case of Norway, Kjelstad and Nymoen (2012) also pointed to the large heterogeneity among the part-time workforce. They showed that, while voluntary part-time employment was generally of higher quality in that country, involuntary part-time work tended to be a feature of the secondary labour market,as it was mainly observed in low-skilled services, and was associated with a greater incidence of temporary contracts. Similarly, Kauhanen and Nätti (in press), using Finnish data, found strong evidence that those in involuntary non-standard (part-time as well as temporary) employment worked in lower quality jobs relative to permanent, full-time employees. In fact, their finding was robust across all indicators of subjective job quality used in their paper (such as training opportunities, career possibilities, insecurity, autonomy and so on).

It is in this respect that the distinction introduced by Tilly (1991, 1992, 1996) between 'good' and 'bad' part-time jobs becomes useful. In a recession, when conditions in product markets become adverse, resorting to short-time work allows firms to retain workers rather than making them redundant. Furthermore, and quite irrespective of the business cycle, part-time work may be offered to valued, high-skilled employees whose life circumstances prevent them from working full-time (such as women with young children). In both cases, part-time jobs tend to be 'good' in terms of (hourly) pay and conditions, and turnover is low. This type of part-time work conforms to a "responsive firm model", i.e. a situation where firms make an effort to meet the needs of valued and highly skilled employees (Tidjens, 2002; Kjelstad and Nymoen, 2012). In contrast, secondary part-time jobs are 'bad' in the sense that they typically involve low-skill, low-pay work, with high turnover.

It is easy to see why firms are likely to view part-time work as desirable. Employers tend to value the greater flexibility associated with part-time work (and the lower compensation associated with 'bad' part-time jobs). For employees, on the other hand, family responsibilities or study obligations may render full-time employment unviable, which is why mothers and students are often more likely to seek part-time work. In those circumstances, even 'bad' part-time jobs may be the preferred option for workers themselves.

[4] However, it should be noted that the number of observations in part-time work in the sample used by Caputo and Cianni (2001) was probably too small for precise and robust results (about 300 observations).

The prevalence and quality of part-time work may also be affected by institutional factors (Horemans and Marx, 2013; Gash, 2008). Drawing on the conceptual framework provided by Horemans & Marx (2013), some of these factors act on the demand for part-time work, while others on its supply. For instance, on the supply side, partial parental leave, working reduced hours at the same hourly pay, as in Sweden, is likely to encourage fathers to spend more time with their young children. On the other hand, access to affordable child care, available for long hours every day, as in Denmark, will allow mothers to seek employment at their preferred hours (see also Gash, 2008). Similarly, public support for child care irrespective of whether it is provided by the parents themselves or by other carers, as in Belgium or France, will give parents more freedom to strike their own balance between work commitments and family responsibilities. On the demand side, greater reliance on part-time work may be the result of changes in the composition of economic activity by industry, as mentioned above, but also of regulatory factors raising the costs to employers of hiring full-time workers. In particular, in segmented labour markets, where full-time jobs tend to be rigidly regulated and better protected from the point of view of employees, part-time together with temporary jobs may be the only formal options available to employers wishing to inject a dose of flexibility in their workforce (with informal options including undocumented work and bogus self-employment). Finally, institutional arrangements involving the labour market – social protection nexus, affecting the eligibility of part-time workers for social benefits (pension entitlements, unemployment insurance, sickness or maternity leave and so on), will also affect the desirability of part-time employment from the point of view of workers. To these institutional factors, discussed by Horemans & Marx (2013), one can add others associated with industrial relations and workers' rights, such as the right to join a union, to participate in collective bargaining etc. When these rights are available to full-time workers on permanent contracts but not to part-time workers on temporary contracts, preferences will be accordingly shaped.

In view of the above, we argue that part-time work will be to a greater extent involuntary when the relevant jobs are particularly 'bad', and when full-time jobs are scarce or unavailable. In general, we would expect the share of involuntary part-time work to be higher when the economy is in recession, when part-time work spreads outside the narrow confines of mothers and students, when average hourly pay is lower than in full-time jobs, and when the quality of most part-time jobs are perceived as low. We test these hypotheses by contrasting Greece and the UK, two countries with considerably different labour market institutions, where the incidence of involuntary part-time is at very different levels, but on a similarly rising trend. This affords us the opportunity to examine the relative importance of worker characteristics vs. job characteristics, in other words *job quality* (more broadly defined to encompass access to social protection and other institutional characteristics of the jobs concerned), as well as the role of general economic conditions.

3 Data and methodology

We study the correlates of involuntary part-time work using data from national Quarterly Labour Force Surveys. The LFS is an excellent source of information for an investigation of part-time work: it enables the identification of three groups of workers (full-time, voluntary part-time and involuntary part-time); its sample size is sufficiently large to allow precise estimates; and it also includes a rich set of variables on basic socio-demographic and job characteristics that can then be used for a comprehensive analysis of the issues at hand. We compare data on two years: 2008, marking the onset of the recession, and 2013, the latest year for which data were available at the time of writing. To increase sample sizes, we pool together data for both countries and from all quarters of each year. We also restrict our sample to employees aged 16-64 years reporting positive 'usual weekly hours' in their main job. We exclude from our analysis self-employed workers, as they significantly differ from employees in terms of arrangements, practices and preferences with respect to working

time; hence including the self-employed in our analysis would have introduced excessive heterogeneity in our sample.

The literature has defined 'voluntary' and 'involuntary' part-time work in various ways. For example, Walsh (1999), analysing data from Australia, defined as involuntary those part-timers that would currently prefer a full-time job, while Kjelstad and Nymoen (2012), using Norwegian data, as those that worked less than 37 hours per week *and* reported that they wanted to work longer weekly hours. On the other hand, in the UK, Cam (2012) defined involuntary part-timers as those employees that self-reported part-time status in their main job and additionally stated that the reason for working part-time was they could not find full-time employment. The latter is the official definition adopted by Eurostat[5] for comparative purposes; it is also the one used here. In this framework, all other reasons given for working part-time (illness or disability, being at school, caring for children or elderly adults etc.) are coded as 'voluntary'.

An argument could be made that the definition of 'involuntary' part-time employment that is adopted here is problematic. First, the fact that a person was looking for a full-time job but ended up in a part-time one *in the past*, does not necessarily mean that she will still prefer to move to a full-time job *at present*. While this is not necessarily the case, our data confirm that involuntary part-timers are in fact far more likely to be under-employed relative to voluntary ones: in the UK, 66% of involuntary part-time workers wanted to work more hours, compared to only 16% of voluntary part-timers; in Greece, the corresponding numbers were 90% vs. 37%.[6] Second, it is debatable whether persons with caring responsibilities can indeed be grouped as "voluntary" part-timers. Their choice of employment status can be thought of as 'constrained', depending on structural factors (like the prevalent norms for different gender roles in society, the generosity of the welfare state, access to high-quality and affordable childcare etc.) rather than being a matter of individual preference. Indeed, this was the main argument of Gash (2008) for women's part-time employment in the UK (see also Walsh, 1999). However, in the context of our study, irrespective of how we constructed an 'involuntary' part-time measure, based either on desired working hours or on the reasons for ending up in part-time employment, this issue would always be present. Hence, while we acknowledge its importance, we do not delve deeper into it.

Our analysis is performed at two stages. In the first stage, we simply describe the differences between voluntary and involuntary part-time concerning socio-demographic and job characteristics. Full-time workers are also included in this stage, acting as a comparison group. Differences between different groups of workers, both over time and across countries, are examined in detail. In the second stage, we focus *only on the part-time* workforce in each country and year. We estimate linear probability models, separately for each country, both pooled and for each year, in an attempt to investigate the *ceteris paribus* differences between voluntary and involuntary part-time workers.[7] In this stage, we are also interested in determining whether the changes observed in the prevalence of involuntary part-time work between the two years in the two countries are due to changes in the composition of the workforce, or whether they reflect instead a general, presumably cyclical, trend independent of differences in the characteristics of employees across time.

The variables we use in the analysis, both descriptive and regression, are a standard set of relevant, observable socio-demographic and job characteristics. They include gender, age (captured by five dummy variables by 10-year age bands), marital status (one dummy variable for being married), but also presence of dependent children (three dummies by child age), nationality, and years of

[5] See the EU Labour Force Survey methodology, at http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_methodology

[6] Although beyond the scope of this paper, future research might compare different measures of involuntary part-time employment and other types of under-employment, and investigate similarities and differences in more detail.

[7] We should note here that non-linear (probit) models were estimated as a robustness check and the results showed a very similar pattern. We decided to proceed with the linear models for simplicity and ease of interpretation. Huber-White robust standard errors are used throughout in the regression analysis.

schooling.[8] In terms of job characteristics we use a public sector dummy, whether the individual has more than one job, four workplace size dummies, tenure with current employer (in years), whether the employment contract is a permanent one, supervisory status in job, eight one-digit occupation dummies, and nine one-digit industry dummies. In the descriptive analysis of stage one, we also show results for real hourly net pay[9] and for total usual weekly working hours.

After the sample selection process described above, and after excluding all observations with missing values for any of the variables concerned, we ended up with 313,718 observations for the UK (171,960 in 2008, 141,758 in 2013) and 109,975 for Greece (68,169 in 2008 and 41,806 in 2013). These numbers concern the total sample of full-time and part-time employees. In the following section we describe how the characteristics of involuntary part-time workers, voluntary part-timers and full-timers differ in the two countries under investigation and over time.

4 Descriptive analysis

Tables 1a and 1b present the relevant sample means for the UK and Greece, respectively; the statistical significances of the differences between the part-time and the full-time sample means are also indicated.

4.1 United Kingdom

Starting from the UK, it can be seen that part-time work is quite extensive in the country, involving almost one quarter of all employees working in each year. While the majority of part-time work in the country is voluntary, the share of involuntary part-time employment has risen considerably between 2008 and 2013: from 2.5% to 4.7% of total paid employment, and from 10.7% to 19.6% among the part-time group.

(See table 1a next page)

[8] Due to the differences in their respective education systems, we prefer to focus on years of schooling, rather than specific educational qualifications acquired, in order to achieve greater comparability across the two nations. Years of education are calculated in the UK LFS by "age left education minus 6". In the Greek LFS we calculate them by "year left education minus year of birth minus 6".

[9] Net hourly pay in the UK LFS is derived by dividing the net weekly pay (available in the survey) by usual weekly hours. Earnings information in the UK LFS is only available for around 40% of our final sample due to the structure of the survey. Hence, the sample means presented for the net hourly pay variable in the Table for the UK are calculated from a smaller sample than our baseline final one. In the Greek LFS, net pay is given as monthly pay and is only provided for a limited number of wage bands in both years. To derive a continuous variable, we assign to each employee the mid-point of the respective band. We then divide this number by 4.3 times total usual weekly hours. For this reason, the hourly pay data for Greece should be treated with some caution. Finally, we deflate 2013 values by using Eurostat's all items harmonized indices of consumer prices (HICP).

Table 1a. **Sample means by year and employment status – UK**

	2008			2013		
	Full-time	**Voluntary part-time**	**Involuntary part-time**	**Full-time**	**Voluntary part-time**	**Involuntary part-time**
Socio-demographics						
Age 16-24	0.11	0.06***	0.28***	0.08	0.06***	0.25***
Age 25-34	0.23	0.15***	0.16***	0.24	0.17***	0.20***
Age 35-44	0.27	0.30***	0.21***	0.25	0.28***	0.19***
Age 45-54	0.25	0.25**	0.23***	0.28	0.26***	0.23***
Age 55-64	0.14	0.23***	0.13	0.15	0.23***	0.13***
Female	0.40	0.89***	0.64***	0.41	0.89***	0.63***
Married	0.69	0.77***	0.51***	0.70	0.76***	0.49***
Any child 0-1 years	0.07	0.09***	0.05***	0.08	0.10***	0.06***
Any child 2-4 years	0.08	0.15***	0.07*	0.10	0.18***	0.08***
Any child 5-15 years	0.25	0.42***	0.28***	0.26	0.42***	0.29***
UK National	0.93	0.96***	0.89***	0.92	0.95***	0.89***
Education (years)	12.04	11.35***	11.20***	12.45	11.96***	11.66***
Job characteristics						
Real net hourly pay (£)	9.01	7.88***	6.16***	8.63	7.90***	6.13***
Total usual hours	42.37	20.37***	21.53***	42.33	20.60***	21.01***
Public sector	0.27	0.39***	0.28	0.28	0.37***	0.24***
Has second job	0.03	0.07***	0.10***	0.02	0.07***	0.09***
Size 1-10	0.16	0.26***	0.29***	0.16	0.25***	0.31***
Size 11-19	0.08	0.10***	0.11***	0.08	0.09***	0.13***
Size 20-49	0.19	0.22***	0.26***	0.19	0.22***	0.22***
Size 50+	0.57	0.42***	0.33***	0.58	0.43***	0.35***
Tenure (years)	8.42	7.78***	3.68***	9.24	8.78***	4.18***
Permanent	0.97	0.93***	0.83***	0.96	0.93***	0.85***
Supervisor	0.46	0.22***	0.12***	0.45	0.22***	0.12***
Occupation						
Managers	0.19	0.05***	0.02***	0.12	0.04***	0.02***
Professionals	0.15	0.09***	0.06***	0.23	0.18***	0.06***
Assoc. Professionals	0.16	0.13***	0.06***	0.16	0.09***	0.05***
Admin/Secretarial	0.11	0.22***	0.09***	0.11	0.20***	0.07***
Skilled trades	0.10	0.02***	0.04***	0.10	0.02***	0.05***
Pers. services & sales	0.12	0.30***	0.37***	0.13	0.31***	0.39***
Machine operatives	0.09	0.02***	0.04***	0.08	0.02***	0.04***
Elementary occupation	0.09	0.17***	0.33***	0.08	0.15***	0.31***
Industry						
Agriculture	0.01	0.01***	0.01***	0.01	0.00***	0.00***
Energy	0.02	0.00***	0.00***	0.02	0.01***	0.00***
Manufacturing	0.16	0.05***	0.03***	0.14	0.03***	0.03***
Construction	0.07	0.02***	0.02***	0.06	0.02***	0.01***
Distr./Hotels/Restaur.	0.15	0.24***	0.40***	0.15	0.23***	0.43***
Transport & comm.	0.08	0.03***	0.04***	0.10	0.04***	0.05***
Business serv./Finance	0.17	0.12***	0.09***	0.16	0.13***	0.10***
Pub admin/Ed/Health	0.30	0.47***	0.34***	0.32	0.49***	0.31
Other services	0.05	0.06***	0.07***	0.04	0.06***	0.06***
Observations	**132,732**	**35,014**	**4,214**	**107,483**	**27,562**	**6,713**

Notes: Asterisks denote a statistically significant difference between the part-time (either voluntary or involuntary) group mean and the full-time one (*** p<0.01, ** p<0.05, * p<0.1).

In 2013, the incidence of involuntary part-time work in the UK was greatest among younger workers (15-24 years). This contrasted with the age profile of voluntary part-timers, which peaked in the 35 to 44 age group. In general, involuntary part-timers are much younger than either voluntary part-timers or full-timers.[10] Almost 45% of involuntary part-time employees in both 2008 and 2013 are younger than 35 years old, while the relevant percentages for voluntary part-timers and full-timers are around 23% and 32% respectively. These different age distributions reflect to some extent the family care responsibilities of the overwhelmingly female part-time workforce in the UK as noted below. No significant changes in the age distributions of the groups seem to have occurred between 2008 and 2013.

As already mentioned, the part-time workforce in the UK is predominantly female: only 11% of voluntary part-time workers in 2013 were men. The male share was significantly larger for involuntary part-timers (37%), and even more so among full-timers (59%). Almost no change occurred in the gender composition of the workforce across the three groups between 2008 and 2013. The same is also true for the family situation of workers. Voluntary part-time employees were more likely to be married, while they were also more likely to have dependent children of any age, something to be expected given the definition of voluntary part-time discussed earlier. On the other hand, differences in the presence of children between involuntary part-time workers and full-timers were much smaller (though statistically significant). Moreover, the share of married workers in 2013 was the lowest (49%) among involuntary part-timers. Finally, the presence of children of any age increased slightly for all groups, possibly reflecting the somewhat older composition of the workforce in 2013 relative to 2008.

The other socio-demographic characteristics examined here are nationality and education. Few changes between 2008 and 2013 can be observed in the composition of the workforce with respect to nationality. The share of UK nationals is the lowest among involuntary part-time workers. These workers were also the least educated (as measured by years of schooling). Relative to 2008, the average number of schooling years in 2013 had gone up across all three contract types.

Turning now to the job characteristics of the UK workforce, we observe important differences across the three groups of workers. With respect to pay, changes in average real net hourly pay between 2008 and 2013 diverged across contract types: hourly pay declined among full-timers (by -4%), while remaining virtually unchanged for all part-timers.[11] However, there is still a large hourly pay gap between involuntary part-timers and full-time workers (around -30%), while the hourly pay of voluntary part-timers is much closer to that of the full-time employees. No important changes during the period examined can be observed concerning hours worked; as expected, part-time workers supply around half the amount of weekly working hours that full-timers do.

Pay gaps often reflect other job characteristics. For instance, although there was a larger share of voluntary part-time workers in the public sector, part-timers as a whole were more likely to work in smaller establishments than full-timers (and involuntary ones even more so). Moreover, those involuntarily employed in part-time jobs had much shorter tenure and were also far more likely to work on a temporary contract. The differences between full-time employees and voluntary part-timers in these two characteristics were much less pronounced (but, again, still significant). We should also note that average tenure was higher for all contract types in 2013 relative to 2008, reflecting the selected sample of employees that survived the job cuts during the crisis in the UK. The same share of workers in the two years had a supervisory status in their jobs, with involuntary part-time employees the least likely to report such a status. In contrast, due to the worse labour market situation in 2013 relative to 2008, a slightly smaller proportion of employees held a second job.

[10] The average age for 2008 was 40.3, 43.9 and 37.2 for full-time, voluntary part-time and involuntary part-time workers, respectively. The respective averages for 2013 were 41.3, 44.1 and 37.7.

[11] The picture would be similar if median rather than average pay rates were used.

Involuntary part-time employees were more likely than the other groups to have a second job, something that confirms the under-employment they experience in their main job.

Finally, part-time workers in the UK are concentrated in lower grade white- and blue-collar occupations and this hardly changed between 2008 and 2013. However, an important difference between voluntary and involuntary part-time workers in the UK is that while the former are far more likely to hold administrative/secretarial jobs in public administration, health or education (nearly half of them worked in these industries in both years), the latter are more likely to work in elementary or personal services/sales occupations in distribution, hotels and restaurants. Around 50% of the full-time workforce, on the other hand, is classified in the three higher grade white collar occupations, i.e. managers, professionals and associate professionals.

To sum up, involuntary part-time in the UK became more widespread in 2013 relative to 2008, though admittedly from a relatively low base. However, the demographic and job characteristics of each group remained similar in the two years. Specifically, involuntary part-timers tended to be younger, unmarried, and predominantly female. Relative to those in voluntary part-time, they numbered fewer women, and fewer parents with childcare responsibilities. Also, they were somewhat less educated, and included a lower share of UK nationals than those in the other two groups (voluntary part-time or full-time) did. Moreover, the jobs of involuntary part-time workers in the UK featured obvious secondary labour market traits (Tilly, 1992; Tidjens, 2002; Kjelstad and Nymoen, 2012), i.e. seemed to be of lower quality than those held by the voluntary part-time workforce at both points of the period under consideration. In particular, involuntary part-timers earned far less (per hour) than either full-timers or voluntary part-timers, were less likely to work in the public sector and to have a permanent contract, were less likely to have a managerial/supervisory job, and were more likely to be concentrated in lower grade occupations in the distribution, hotels and restaurants sectors than other UK workers.

4.2 Greece

Compared to the UK, the prevalence and structure of part-time work in Greece is different. For a start, part-time work is far less common, even though (as noted earlier) rising in recent years. In the LFS sample, around 9% of all employees in Greece were working part-time in 2013, up from 4.8% in 2008. At the same time, the share of involuntary part-time workers more than doubled over the period (from 3.1% to 7.5% of all employees). The great majority of those in part-time work do so involuntarily, and their share is on the increase: 83% of part-time employees were involuntary in 2013, compared to around 65% in 2008. The sharp contrast between the Greek and the UK labour markets points to the different nature and characteristics of part-time work in the two countries.

(see table 1b next page)

Table 1b. **Sample means by year and employment status – Greece**

	2008			2013		
	Full-time	**Voluntary part-time**	**Involuntary part-time**	**Full-time**	**Voluntary part-time**	**Involuntary part-time**
Socio-demographics						
Age 16-24	0.07	0.27***	0.16***	0.04	0.14***	0.10***
Age 25-34	0.27	0.29	0.33***	0.24	0.31***	0.30***
Age 35-44	0.31	0.22***	0.28***	0.32	0.30	0.30***
Age 45-54	0.25	0.15***	0.18***	0.29	0.17***	0.22***
Age 55-64	0.10	0.07***	0.05***	0.11	0.08***	0.08***
Female	0.41	0.72***	0.73***	0.43	0.61***	0.64***
Married	0.62	0.51***	0.48***	0.65	0.62	0.56***
Any child 0-1 years	0.05	0.06**	0.03***	0.05	0.06	0.04***
Any child 2-4 years	0.09	0.12***	0.06***	0.11	0.14**	0.09**
Any child 5-15 years	0.29	0.31	0.29	0.30	0.28	0.29*
Greek National	0.89	0.86***	0.84***	0.91	0.83***	0.76***
Education (years)	12.45	12.05***	11.79***	13.52	12.53***	11.73***
Job characteristics						
Real net hourly pay (€)	6.31	6.05	5.96***	5.48	4.49***	4.27***
Total usual hours	40.67	20.87***	20.14***	40.55	21.46***	20.50***
Public sector	0.36	0.15***	0.23***	0.40	0.06***	0.10***
Has second job	0.02	0.04***	0.08***	0.01	0.04***	0.02***
Size 1-10	0.45	0.68***	0.68***	0.39	0.64***	0.67***
Size 11-19	0.28	0.19***	0.21***	0.28	0.14***	0.21***
Size 20-49	0.12	0.06***	0.07***	0.12	0.08***	0.06***
Size 50+	0.15	0.08***	0.04***	0.21	0.13***	0.06***
Tenure (years)	10.50	5.19***	3.64***	11.40	6.67***	5.83***
Permanent	0.90	0.58***	0.46***	0.91	0.76***	0.69***
Supervisor	0.10	0.03***	0.01***	0.12	0.07***	0.02***
Occupation						
Managers	0.02	0.00***	0.00***	0.02	0.00***	0.00***
Professionals	0.17	0.15**	0.19**	0.23	0.14***	0.12***
Assoc. Professionals	0.11	0.11	0.07***	0.10	0.07***	0.04***
Admin/Secretarial	0.17	0.14***	0.10***	0.15	0.15	0.08***
Skilled trades	0.17	0.07***	0.08***	0.11	0.16***	0.13**
Pers. services & sales	0.17	0.30***	0.21***	0.21	0.32***	0.30***
Machine operatives	0.10	0.02***	0.02***	0.08	0.03***	0.03***
Elementary occupation	0.09	0.21***	0.33***	0.09	0.13***	0.29***
Industry						
Agriculture	0.02	0.01	0.04***	0.03	0.02	0.04***
Energy	0.03	0.01***	0.02***	0.03	0.01***	0.01***
Manufacturing	0.14	0.07***	0.04***	0.12	0.12	0.08***
Construction	0.10	0.04***	0.06***	0.04	0.07***	0.07***
Distr./Hotels/Restaur.	0.21	0.31***	0.25***	0.22	0.37***	0.34***
Transport & comm.	0.07	0.04***	0.01***	0.08	0.05***	0.04***
Business serv./Finance	0.09	0.11***	0.08	0.09	0.12*	0.09
Pub admin/Ed/Health	0.30	0.22***	0.32*	0.35	0.13***	0.18***
Other services	0.05	0.19***	0.18***	0.04	0.11***	0.15***
Observations	**64,925**	**1,143**	**2,101**	**38,037**	**635**	**3,134**

Notes: Asterisks denote a statistically significant difference between the part-time (either voluntary or involuntary) group mean and the full-time one (*** p<0.01, ** p<0.05, * p<0.1).

As is apparent from Table 1b, the workforce in Greece grew older in the period between 2008 and 2013. This partly reflects the rise of youth unemployment, with large job losses across contract types (Matsaganis, forthcoming; Blanchflower and Bell, forthcoming). While in the UK involuntary part-time workers tend to be younger, in Greece average age is lowest in the voluntary part-time group.[12] This may reflect a fundamental difference between the two labour markets, perhaps linked to the fact that young persons in Greece tend to live longer in the parental home and are more dependent on their parents for financial support than their peers in the UK (see Ward et al., 2006). Another interesting finding is that the incidence of involuntary part-time work among older workers grew in 2008-2013, while it fell among younger workers. In general, the age distribution of involuntary vs. voluntary part-timers became less diverse in 2013 relative to 2008.

The distribution of gender and family characteristics across contract types is also different. In both countries, part-timers are predominantly female (with the female share of voluntary vs. involuntary part-time jobs being more similar in Greece than in the UK). On the other hand, the share of female workers in full-time jobs increased during the crisis, as did that of male employees in part-time jobs. Partly as a result of that, the gender composition of involuntary part-time changed: in 2013, of all involuntary part-timers 36% were men, up from 27% in 2008. The share of married workers also increased across the board. Differences in family characteristics between those in voluntary vs. involuntary part-time were less pronounced in Greece. For instance, the gap in marriage rates was much smaller, while the presence of children was more evenly distributed across contract types than in the UK. This was especially the case for workers with children aged 5-15, who were far more likely to be in voluntary part-time employment in the UK, whereas no important differences could be detected in Greece. Otherwise, in both countries workers with younger children (below 5 years of age) were about twice as likely to be in voluntary as in involuntary part-time work, although in Greece the gap became narrower in 2013. On the whole, the match between part-time jobs and workers trying to combine work with family responsibilities seems to be more imperfect in Greece than it is in the UK.

In other respects, involuntary part-time workers in Greece were more similar to those in the UK. They were more likely to be foreign born, and to have fewer years of schooling. Already in 2008, the share of foreign workers was higher among involuntary part-timers relative to voluntary ones (16% vs. 14%); by 2013, it had risen faster (to 24% vs. 17%). Conversely, the share of Greek nationals increased among the full-time workforce. In terms of education, in 2008 involuntary part-timers tended to have fewer years of schooling than the other two groups, while by 2013 the gap had become wider still (as the average number of schooling years went up for full-time and voluntary part-time workers, but fell slightly among involuntary part-timers).

Changes in hourly pay reflected the severe recession of the Greek economy over the period considered.[13] Real net hourly pay declined significantly in 2008-2013, by 13% for full-timers, by 26% for voluntary part-timers, and by 28% for involuntary ones. Hence the pay gap between full-time and part-time workers (either voluntary or involuntary ones) became significantly larger. In fact, the full-time/part-time pay gap in 2008 was small in Greece, with little difference between voluntary vs. involuntary part-time. By contrast, as shown above, in the UK full-timers were paid significantly better than voluntary part-timers (in hourly terms), with involuntary part-time workers lagging far behind, while pay gaps remained relatively constant over the period.

On the other hand, with respect to working hours, no important changes occurred, apart from some slight increases in the length of the working week for part-time workers.

[12] Average age for 2008 was as follows: full-time 39.9, voluntary part-time 34.2 and involuntary part-time 35.9; the averages for 2013 were 41.4, 37.0 and 38.4 respectively.

[13] Again, because of the way we calculate hourly pay from the Greek LFS data, these results should be treated with some caution.

As is clear from a comparison of Tables 1a and 1b, firm size in Greece tends to be much smaller. Part-timers are in general concentrated in smaller workplaces. There is also an increase in the proportion of workers from all categories that work in larger establishments, something that is related to the closing-down of many small firms during the economic crisis. A further difference with the UK is the fact that the involuntary part-timers in Greece are much more likely than the voluntary ones to work in the public sector. However, the opportunities for all part-time employees to work in the public sector declined dramatically in the period under examination, due to the austerity measures and the consequent public sector job cuts.

In contrast, as in the UK, involuntary part-timers in Greece have the shortest job tenure and the lowest probability of holding a permanent job than the other two contract types. Increases in the sample means of both these characteristics reflect selection effects: they refer to a smaller number of permanent employees that survived the large decline in employment in recent years. However, in Greece the proportion of part-timers on temporary contracts is significantly higher than in the UK (while the corresponding figures are very similar for full-timers). On the other hand, in both countries involuntary part-timers are less likely to have supervisory duties, and more likely to hold a second job (in 2008).

Finally, contract type segregation across occupations and industries was less clear cut in Greece than in the UK. Both voluntary and involuntary part-timers were concentrated in personal services/sales, with around a third of all involuntary part-timers holding jobs in elementary occupations. Part-time workers were also more likely to work in distribution/hotels/restaurants and other services. Significant shares of part-timers worked in the public administration/education/health sectors in 2008. However, these shares were much lower than the ones observed in the UK (especially for voluntary part-timers), and were further reduced by 2013, as the share of full-timers in these industries increased (from 30% to around 35% of all full-time employment) over the same period.

On the whole, by 2013 involuntary part-timers in Greece had become significantly more numerous relative to 2008. The vast majority of part-time jobs (83%) are now taken by employees that would have preferred to work full time. At the same time, in some respects, the characteristics of involuntary part-time workers came to resemble more closely those of other contract types: in 2013, involuntary part-timers numbered fewer women, fewer young people, more married workers, and more parents relative to 2008. In other respects, though, their distance from other contract types lengthened: in 2013, the education gaps between involuntary part-time workers and the other groups were more pronounced than in 2008, while also including a lower share of Greek nationals than either full-timers or voluntary part-timers. Relative to the UK, workers in voluntary vs. involuntary part-time employment differed less with respect to family characteristics. Concerning job characteristics, both part-time groups had more similar pay rates, while they both suffered from huge cuts in real hourly pay (twice as large as those experienced by full-time workers). Moreover, while involuntary part-timers in Greece held jobs with less desirable characteristics in terms of tenure and term of contract than voluntary part-time workers (and, of course, full-time workers), these differences were smaller than in the UK, especially in 2013. This was also the case for differences with respect to occupation and industry. The following section provides a further analysis of the similarities and differences between the two part-time groups in the two countries.

5 Regression analysis

In this section we proceed with the second stage of our analysis which consists of estimating linear regression models of the probability of being in involuntary part-time employment. We now focus only on the sample of part-time employees and examine whether the descriptive differences between the voluntary and the involuntary part-timers we identified in the previous section still hold in a multiple regression setting. For each country, we estimate four regression models. The first two

pool the data from both years together, while the other two present estimates separately for each year. Table 2 presents the results.[14]

(Table 2. Determinants of involuntary part-time employment (Linear probability models) can be found in the annex p. 24)

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The first thing to note is the coefficient and significance of the year 2013 dummy in the pooled specifications for each country. Specifications 1 and 5 include just this dummy as an independent variable and show what we have already mentioned in the descriptive analysis of the previous section: involuntary part-time employment as a share of total part-time employment increased by around 9 percentage points (p.p.) in the UK between 2008 and 2013, while it increased by around 18 p.p. in Greece during the same period. Comparing specifications 1 and 5 with 2 and 6, respectively, we can see that the year dummy coefficients are hardly affected when one controls for all the socio-demographic and job characteristics described in the previous sections. This implies that the increase in involuntary part-time employment in both countries during these years was not the result of a compositional effect, i.e. not simply a change in the characteristics of people working in part-time employment during this period.[15] In contrast, it seems to be the result of a general trend, possibly reflecting a cyclical outcome due to the reduction in full-time work opportunities or a change in the preferences of employers and employees for part-time versus full-time work.

Turning now to the coefficient estimates for the rest of the variables included in the model, we can observe some important differences, as well as some similarities, in the correlates of involuntary part-time employment between the two countries (which were also mentioned in the previous section). In the UK, there seems to be an almost linear inverse relationship between age and the likelihood of working involuntarily as a part-timer. Younger people seem to prefer full-time jobs more than older ones do, something that is apparent across both years (specifications 3 and 4). There is also some evidence that this relationship might have become stronger in 2013 relative to 2008 (the age coefficients are larger in 2013). In Greece, as we have already noted in the previous section, a different picture appears: younger part-time workers are the least likely to be involuntary, while middle-aged employees (35-54 years old) prefer full-time work more than older ones do. A further difference with the UK is that these relationships became much weaker in 2013, but they are still noticeable to some extent.

Our regressions confirm the differences between part-timers with respect to gender and family composition that emerged in the descriptive analysis. To account for differential effects of marital status and children on males and females, we also included in the models the relevant interaction terms. In the UK, women in part-time work were more likely than men to be voluntarily in this status, by about 8-11 p.p. (depending on year) *ceteris paribus*. This negative effect for women was strongly reinforced by the presence of any children (all female-children interaction terms had large and negative coefficients). On the other hand, married women were only slightly less likely than married men to be involuntary part-timers, a difference that is insignificant in 2013, confirming the findings from the descriptive analysis. A new finding brought up by our regression analysis was that the presence of children (especially newly born ones) seemed to be positively related with involuntary status among male part-timers in the UK, suggesting a clear gender division of attitudes towards work and family responsibilities. Finally, being a UK national lowered the probability of being an involuntary part-timer, while the analysis also showed that, *ceteris paribus*, more highly educated workers in the UK part-time workforce would have preferred a full-time job.

[14] Table 2 reports the full regression results for the interested reader. Some of the findings, for example the different regional patterns (see Green and Livanos, In press, for a UK account), lie beyond the scope of this paper and are not discussed in the text.

[15] The analysis confirmed that this is indeed the case for the UK. For Greece, though, we noted some changes in the characteristics of part-timers.

In Greece, the situation is dramatically different. Female part-timers were *more* likely than men to be in that status involuntarily. The pattern is reversed if married (as suggested by the negative female-married interaction term), and when children are present, though not as strong as in the UK (the female-children interaction terms are generally insignificant or at most marginally significant). Furthermore, the family characteristics variables are not related with involuntary part-time for men (except for the positive and significant marriage dummy in 2008). Finally, the relationships observed in the descriptive analysis between nationality and education on the one hand, and involuntary part-time work on the other hand, do not show up in the regression analysis for Greece: the coefficients for both variables are very small and statistically insignificant in all specifications.

Turning to job characteristics, being in the public sector in the UK is positively related with involuntary part-time status, *ceteris paribus*. This is the opposite of what we observed in Table 1a and implies that public sector status is correlated with other observable characteristics that confound the descriptive result (industry composition, i.e. employment in public administration/health/education, seems to be the most likely candidate). In Greece, the public sector coefficient is insignificant and quite unstable across specifications. In contrast, regression analysis confirms that having a second job is positively related with involuntary part-time in the UK. Again, no significant relationship is observed for Greece in 2013, with a weakly positive relationship estimated for 2008.

The results for establishment size confirm the descriptive evidence discussed earlier. In both countries, involuntary part-timers are mostly employed in smaller firms, and this seems robust across time, more so in the Greek data. The same is also true for tenure and type of contract. In both countries, having been longer with one's current employer and having an open-ended contract are negatively related with the probability of working involuntarily in a part-time job. The results for these variables, however, are much stronger for the UK. For example, in Greece, in 2013, the probability of being on involuntary part-time was only about 2.5 percentage points lower for employees with permanent contracts, *ceteris paribus*, and this was only significant at the 10% level. The contrast between the two countries becomes starker when considering that the differential observed in the UK for the same effect was almost 8 percentage points ($p<0.01$), especially taking into account the much lower overall incidence of involuntary part-time work there. On the other hand, supervisory status was strongly and negatively related to involuntary part-time status only in Greece.

Holding other things constant, the results for the occupation and industry dummies lead to similar conclusions for the UK as in the previous section. Working part time in a higher-grade occupation negatively affects the probability that it is involuntary (relative to working in an elementary occupation), and the result is robust across the two years. Moreover, there is evidence that the involuntary part-time status in the UK is more strongly and positively related, *ceteris paribus*, with working in some parts of the service sector, such as in distribution/hotels/restaurants or in transport and communications.

In Greece, although the occupational dummies estimates provide a similar picture to that of the UK, the composition of involuntary relative to the voluntary part-time work by industry is much less clear-cut (as was hinted in the descriptive statistics of Table 1b). In fact, in 2013, we observe little difference between involuntary and voluntary part-timers regarding their distribution by industry. An exception to this pattern is that working in public administration or in health or in education is positively related to the probability of working as an involuntary part-timer, *ceteris paribus*.

In sum, the regression analysis confirmed most of the results presented in the descriptive analysis, as regards the relationship of basic socio-demographic and job characteristics with the probability of working in involuntary part-time, and how that differs between the two countries. Moreover, this section also confirmed a crucial difference between the two countries. The pattern of determinants of involuntary part-time employment in the UK is more predictable and more consistent with the

literature. It is confirmed, thus, that mothers with family care responsibilities are far more likely to work part-time voluntarily than fathers, or women with no caring duties, while involuntary part-time work is also associated with an increased probability of being in a job with secondary labour market characteristics. On the other hand, the results for Greece (whether for socio-demographic variables or for job characteristics) are weaker and, in some cases, unstable over time. This may, of course, be the result of the profound economic, political and structural changes that have taken place in recent years. In any case, one result stands out for both countries: the increase in involuntary part-time employment seems to reflect a general, across-the-board trend, quite unrelated to changes in the composition of the workforce over the period.

6 Discussion and concluding remarks

This paper has taken the uncommon approach of adopting a comparative perspective, contrasting involuntary part-time employment in Greece vs. the UK, two countries with very different labour market institutions (and recent performance). We have analysed Labour Force Survey microdata in an attempt to identify determinants and/or correlates of levels of involuntary part-time and trends over time, noting from the start that the trends are similar for the two countries, even though the levels are different.

Our main findings, pointing to different explanations for similar trends, can be summarized as follows.

The UK labour market seems more successful in aligning workers' preferences ('constrained' or not; see Gash, 2008) for part-time work with employers' demand for such jobs. The majority of part-time jobs are voluntary. Although gaps in hourly pay between part-time and full-time jobs remain significant, they are somewhat narrower in 2013 than they were in 2008, as the hourly pay of part-timers did not decline over the Great Recession while that of full-timers did. In the light of this, part-time work may have become a bit more attractive in relative terms. However, the recession has left behind a legacy of increased labour market slack; one implication of this is that full-time jobs are now scarcer, in connection to which involuntary part-time has grown almost twofold. Moreover, the part-time workforce is heterogeneous: pay and job quality gaps between voluntary and involuntary part-time are quite substantial, with the latter exhibiting secondary labour marker characteristics. Otherwise, our quantitative analysis has confirmed much that we already knew from the literature: for example, while women are more likely to work part-time, they are less likely to do so involuntarily; and mothers' greater tendency actively to opt for a part-time job is strengthened as the number of children in the family rises.

In contrast, part-time jobs in Greece have always been considered sub-optimal by most workers. This was true before the crisis, in spite of the fact that pay gaps between part-time and full-time employees were not large in 2008 (especially in hourly terms). In a context of mass unemployment, pay rates have declined across the board, but by far more in the case of part-time work, so pay differentials have increased. This suggests that part-time jobs have now become even less desirable, which is borne out by the rise in involuntary part-time. Interestingly, our quantitative analysis has been less illuminative than in the UK case, in that it brought up more 'noise', more unstable and hence more inconclusive results. For example, we found that in Greece women are actually *more* likely to be involuntarily employed in a part-time job than men, other things being equal, and only marginally less so when they happen to be mothers. In other words, part-time work is not seen as desirable even for those groups it is in principle most suited to. What is more, and in contrast with the findings for the UK, job quality gaps seem to be more pronounced between full-time jobs and part-time jobs as a whole, than between the voluntary and involuntary part-time.

On the whole, part-time work in Greece seems to be more valued by employers than by employees. Institutional factors are not unrelated to such a pattern. As a matter of fact, recent changes in labour

market regulation have made working conditions more flexible but at the same time less secure. More specifically, reform has emphatically *not* followed the much discussed 'flexicurity' approach (Viebrock and Clasen, 2009), officially promoted by the European Commission, which aims to reduce segmentation by combining lower job and employment protection for core workers on the one hand, with greater income and social protection for non-standard workers on the other hand. On the contrary, it has taken the more mundane route of deregulation across the board, with reductions in job security accompanied by a drastic cut in the minimum wage as well as in unemployment benefits. The wisdom and political sustainability of this approach at European level is questionable, and has in fact been questioned for some time (Boeri and Garibaldi, 2009). In the context of Greece, by also leaving a minority of core workers relatively unscathed, labour market reform has actually deepened segmentation rather than mitigating it. The net result of all this seems to be that as part-time employment grows (from a low base), it becomes worse paid (in absolute but also in relative terms, i.e. vis-à-vis full-time work), more precarious, less secure, and more removed from associated social benefits – in sum, even less attractive (and more 'involuntary') than it was before the crisis.

To the extent that our results for the two countries, at two points in time, lend themselves to an overarching interpretation, we argue that this is to be found in the interaction of shocks and institutions (cfr. Blanchard, 2006). While the structure of the economy and general economic conditions (such as the business cycle) explain some of the differences between the two countries (and over time), institutional factors and the quality of part-time jobs on offer are also of great importance in shaping workers' attitudes. This suggests that the interaction between the two account for differences in the prevalence of involuntary part-time across countries and over time.

We believe that our work raises interesting questions for future research.

Firstly, our finding that involuntary part-time has risen in the UK even though pay differentials have narrowed, while it was already very high in Greece even though pay differentials were small (or non-existent in hourly terms), is intriguing. In line with our discussion above, it follows that in order to explain the desirability or otherwise of part-time work one ought to go beyond an examination of pay gaps alone, important though they may be. This is in line with our argument about the heterogeneity of part-time jobs, both within and between countries. More light on that can be shed by analysing in more detail differences in job quality, working conditions, employee well-being, social entitlements and so on, preferably expanding country coverage, and bringing in more specialized and richer datasets (such as the European Working Conditions Survey; see Eurofound, 2012).

Secondly, involuntary part-time work may be (a bit counter-intuitively) seen as the outcome of *less* as well as more flexibility, with binding hour constraints, leading to part of the workforce being under-employed while another part is over-employed. Again, a comparative perspective might contribute to a better understanding of what exactly is going on and why (see e.g. Otterbach, 2010).

Finally, our cross-section analysis (even though repeated at two points in time) cannot really answer the crucial question of whether involuntary part-time work, however unsatisfactory, might merely be a temporary state that eventually leads to more desirable employment for the workers concerned – or, alternatively, whether it might be a more permanent situation that traps workers and deepens segmentation. Access to panel data would render it possible to confirm or refute these statements, by tracing transitions between part-time and full-time employment, and indeed between part-time employment and unemployment (or vice versa).

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Annex

Table 2. **Determinants of involuntary part-time employment (Linear probability models)**

	(1) UK pooled	(2) UK pooled	(3) UK 2008	(4) UK 2013		(5) GR pooled	(6) GR pooled	(7) GR 2008	(8) GR 2013
Year					***Year***				
2013	0.0884***	0.0797***			2013	0.1839***	0.2038***		
	[0.0027]	[0.0024]				[0.0104]	[0.0107]		
Age (Ref.: Age 55-64)					***Age (Ref.: Age 55-64)***				
Age 16-24		0.2462***	0.2212***	0.2723***	Age 16-24		-0.1037***	-0.0852*	-0.0607*
		[0.0073]	[0.0097]	[0.0110]			[0.0267]	[0.0445]	[0.0329]
Age 25-34		0.1361***	0.1036***	0.1657***	Age 25-34		0.0505**	0.1154***	0.0307
		[0.0053]	[0.0066]	[0.0083]			[0.0230]	[0.0404]	[0.0277]
Age 35-44		0.1125***	0.0878***	0.1365***	Age 35-44		0.0709***	0.1456***	0.0338
		[0.0044]	[0.0054]	[0.0071]			[0.0224]	[0.0398]	[0.0264]
Age 45-54		0.0833***	0.0688***	0.0984***	Age 45-54		0.0684***	0.1216***	0.0547**
		[0.0036]	[0.0044]	[0.0059]			[0.0218]	[0.0397]	[0.0255]
Gender and family					***Gender and family***				
Female		-0.0984***	-0.0768***	-0.1132***	Female		0.0851***	0.1138***	0.0574***
		[0.0086]	[0.0120]	[0.0120]			[0.0161]	[0.0258]	[0.0200]
Married		-0.0476***	-0.0292**	-0.0638***	Married		0.0133	0.1161***	-0.0246
		[0.0097]	[0.0132]	[0.0140]			[0.0223]	[0.0405]	[0.0264]
Any child 0-1 years		0.1022***	0.0876***	0.0999***	Any child 0-1 years		-0.0034	-0.1126	0.0345
		[0.0195]	[0.0298]	[0.0257]			[0.0438]	[0.0966]	[0.0473]
Any child 2-4 years		0.0569***	0.1272***	-0.0068	Any child 2-4 years		-0.0244	-0.0719	0.0152
		[0.0177]	[0.0266]	[0.0236]			[0.0309]	[0.0720]	[0.0351]
Any child 5-15 years		0.0287***	0.0129	0.0468***	Any child 5-15 years		0.0062	0.0068	0.0128
		[0.0109]	[0.0152]	[0.0155]			[0.0230]	[0.0435]	[0.0273]
Female*Married		-0.0199**	-0.0244*	-0.0186	Female*Married		-0.1107***	-0.1873***	-0.0813***
		[0.0100]	[0.0136]	[0.0145]			[0.0251]	[0.0433]	[0.0302]
Female* Any child 0-1 years		-0.2097***	-0.1742***	-0.2295***	Female* Any child 0-1 years		-0.1216**	-0.0842	-0.0906
		[0.0197]	[0.0299]	[0.0261]			[0.0548]	[0.1076]	[0.0657]

Female* Any child 2-4 years	-0.1621***	-0.1994***	-0.1311***	Female* Any child 2-4 years	-0.1103***	-0.1290	-0.0913*
	[0.0178]	[0.0267]	[0.0238]		[0.0385]	[0.0796]	[0.0469]
Female* Any child 5-15 years	-0.1300***	-0.0892***	-0.1739***	Female* Any child 5-15 years	-0.0353	-0.0837*	0.0095
	[0.0111]	[0.0154]	[0.0158]		[0.0264]	[0.0482]	[0.0314]
Nationality and education				***Nationality and education***			
UK National	-0.0691***	-0.0794***	-0.0614***	Greek National	-0.0117	0.0065	-0.0258
	[0.0067]	[0.0095]	[0.0094]		[0.0145]	[0.0262]	[0.0167]
Education (years)	0.0031***	0.0036***	0.0018**	Education (years)	-0.0012	0.0013	-0.0029
	[0.0005]	[0.0007]	[0.0008]		[0.0015]	[0.0023]	[0.0019]
Job characteristics				***Job characteristics***			
Public sector	0.0239***	0.0150***	0.0325***	Public sector	0.0177	-0.0227	0.0312
	[0.0034]	[0.0042]	[0.0054]		[0.0172]	[0.0256]	[0.0225]
Has second job	0.0218***	0.0201***	0.0238***	Has second job	0.0293	0.0511*	-0.0587
	[0.0050]	[0.0065]	[0.0078]		[0.0241]	[0.0292]	[0.0424]
Firm size (Ref.: Size 50+)				*Firm size (Ref.: Size 50+)*			
Size 1-10	0.0161***	0.0118***	0.0190***	Size 1-10	0.1067***	0.0950**	0.1226***
	[0.0033]	[0.0039]	[0.0053]		[0.0228]	[0.0393]	[0.0272]
Size 11-19	0.0222***	0.0099*	0.0334***	Size 11-19	0.1586***	0.1555***	0.1707***
	[0.0043]	[0.0052]	[0.0071]		[0.0236]	[0.0403]	[0.0280]
Size 20-49	0.0154***	0.0244***	0.0036	Size 20-49	0.1471***	0.1747***	0.1187***
	[0.0031]	[0.0039]	[0.0049]		[0.0287]	[0.0456]	[0.0373]
Tenure (years)	-0.0037***	-0.0025***	-0.0050***	Tenure (years)	-0.0070***	-0.0129***	-0.0027**
	[0.0001]	[0.0002]	[0.0002]		[0.0009]	[0.0018]	[0.0011]
Permanent	-0.0723***	-0.0638***	-0.0773***	Permanent	-0.0329***	-0.0398**	-0.0255*
	[0.0055]	[0.0071]	[0.0083]		[0.0114]	[0.0185]	[0.0140]
Supervisor	-0.0035	-0.0042	-0.0033	Supervisor	-0.2191***	-0.2298***	-0.2159***
	[0.0028]	[0.0035]	[0.0046]		[0.0392]	[0.0596]	[0.0501]
Occupation (Ref. Elementary)				***Occupation (Ref. Elementary)***			
Managers	-0.1017***	-0.0807***	-0.1368***	Managers	-0.0022	-0.3958**	0.0990*
	[0.0058]	[0.0067]	[0.0103]		[0.0726]	[0.1834]	[0.0566]
Professionals	-0.1046***	-0.0675***	-0.1256***	Professionals	-0.1173***	-0.1228***	-0.1235***
	[0.0052]	[0.0069]	[0.0080]		[0.0221]	[0.0370]	[0.0269]
Associate Professionals	-0.0774***	-0.0619***	-0.1020***	Associate Professionals	-0.1402***	-0.1536***	-0.1190***
	[0.0049]	[0.0058]	[0.0085]		[0.0249]	[0.0375]	[0.0331]

Admin/Secretarial	-0.0918***	-0.0694***	-0.1202***
	[0.0042]	[0.0050]	[0.0070]
Skilled trades	-0.0124	-0.0364***	0.0072
	[0.0100]	[0.0123]	[0.0156]
Pers. services & sales	-0.0384***	-0.0297***	-0.0492***
	[0.0042]	[0.0051]	[0.0068]
Machine operatives	-0.0184*	-0.0245*	-0.0121
	[0.0107]	[0.0131]	[0.0175]
Industry (Ref.: Other services)			
Agriculture	-0.0148	0.0127	-0.0569*
	[0.0174]	[0.0206]	[0.0309]
Energy	0.0138	-0.0164	0.0432**
	[0.0135]	[0.0179]	[0.0189]
Manufacturing	0.0217***	0.0185**	0.0211*
	[0.0074]	[0.0088]	[0.0125]
Construction	0.0333***	0.0470***	0.0154
	[0.0093]	[0.0116]	[0.0150]
Distr./Hotels/Restaurants	0.0506***	0.0401***	0.0555***
	[0.0058]	[0.0071]	[0.0095]
Transport & communic.	0.0509***	0.0314***	0.0684***
	[0.0082]	[0.0103]	[0.0128]
Business serv./Finance	0.0344***	0.0356***	0.0266***
	[0.0060]	[0.0073]	[0.0097]
Pub admin/Educ/Health	0.0163***	0.0157**	0.0128
	[0.0055]	[0.0067]	[0.0090]
Region (Ref: N. Ireland)			
Tyne & Wear	-0.0043	0.0051	-0.0106
	[0.0119]	[0.0153]	[0.0180]
Rest of North	-0.0228**	0.0029	-0.0470***
	[0.0094]	[0.0118]	[0.0148]
South Yorkshire	-0.0475***	-0.0382***	-0.0578***
	[0.0102]	[0.0122]	[0.0166]
West Yorkshire	-0.0461***	-0.0254**	-0.0639***
	[0.0089]	[0.0112]	[0.0138]
Rest of York and Humber.	-0.0478***	-0.0425***	-0.0494***

Admin/Secretarial	-0.1329***	-0.0896***	-0.1436***
	[0.0204]	[0.0317]	[0.0268]
Skilled trades	-0.0695***	-0.0354	-0.0984***
	[0.0228]	[0.0382]	[0.0284]
Pers. services & sales	-0.1221***	-0.1744***	-0.0652***
	[0.0171]	[0.0291]	[0.0191]
Machine operatives	-0.0234	-0.0149	-0.0349
	[0.0345]	[0.0632]	[0.0376]
Industry (Ref.: Other services)			
Agriculture	0.0336	0.1189**	0.0158
	[0.0282]	[0.0513]	[0.0328]
Energy	0.0228	0.0130	-0.0863
	[0.0489]	[0.0628]	[0.0772]
Manufacturing	-0.0681**	-0.1431***	-0.0210
	[0.0266]	[0.0442]	[0.0317]
Construction	0.0599**	0.0923**	0.0446
	[0.0286]	[0.0442]	[0.0379]
Distr./Hotels/Restaurants	0.0293	0.0318	-0.0018
	[0.0184]	[0.0297]	[0.0217]
Transport & communic.	-0.0495	-0.1882***	0.0176
	[0.0327]	[0.0639]	[0.0373]
Business serv./Finance	-0.0259	-0.0586*	-0.0139
	[0.0211]	[0.0340]	[0.0256]
Pub admin/Educ/Health	0.0839***	0.0961***	0.0704***
	[0.0195]	[0.0310]	[0.0236]
Region (Ref: Thessaloniki)			
Anatoliki Makedonia & Thraki	0.0488*	0.1094***	-0.0533
	[0.0250]	[0.0367]	[0.0325]
Kentriki Makedonia	0.0654***	0.0912**	0.0156
	[0.0243]	[0.0410]	[0.0262]
Dytiki Makedonia	0.0413	0.1245**	-0.0892**
	[0.0327]	[0.0492]	[0.0415]
Ipeiros	0.0240	0.0412	-0.0405
	[0.0259]	[0.0361]	[0.0356]
Thessalia	0.0937***	0.1825***	-0.0136

	[0.0091]	[0.0112]	[0.0142]
East Midlands	-0.0344***	-0.0236**	-0.0379***
	[0.0079]	[0.0098]	[0.0124]
East Anglia	-0.0616***	-0.0422***	-0.0768***
	[0.0087]	[0.0107]	[0.0140]
Inner London	-0.0109	-0.0208	0.0001
	[0.0119]	[0.0154]	[0.0179]
Outer London	-0.0446***	-0.0341***	-0.0485***
	[0.0086]	[0.0109]	[0.0133]
Rest of South East	-0.0669***	-0.0470***	-0.0847***
	[0.0072]	[0.0090]	[0.0112]
South West	-0.0523***	-0.0285***	-0.0722***
	[0.0077]	[0.0096]	[0.0119]
West Midlands (met)	-0.0363***	-0.0215*	-0.0451***
	[0.0093]	[0.0115]	[0.0148]
Rest of West Midlands	-0.0486***	-0.0278***	-0.0669***
	[0.0084]	[0.0106]	[0.0131]
Greater Manchester	-0.0285***	-0.0142	-0.0404***
	[0.0092]	[0.0116]	[0.0142]
Merseyside	-0.0347***	-0.0290**	-0.0400**
	[0.0105]	[0.0128]	[0.0166]
Rest of North West	-0.0430***	-0.0267**	-0.0561***
	[0.0089]	[0.0109]	[0.0143]
Wales	-0.0136	0.0066	-0.0291**
	[0.0089]	[0.0113]	[0.0136]
Strathclyde	-0.0153	0.0005	-0.0277*
	[0.0096]	[0.0122]	[0.0149]
Rest of Scotland	-0.0345***	-0.0209**	-0.0451***
	[0.0085]	[0.0106]	[0.0134]
Quarter (Ref: Q4)			
Q1	-0.0005	-0.0048	0.0045
	[0.0033]	[0.0041]	[0.0053]
Q2	-0.0002	-0.0087**	0.0094*
	[0.0033]	[0.0041]	[0.0053]
Q3	-0.0067**	-0.0131***	0.0013

	[0.0218]	[0.0345]	[0.0267]
Ionia Nisia	0.0082	0.1487**	-0.1012**
	[0.0418]	[0.0744]	[0.0504]
Dytiki Ellada	0.0509**	0.0851**	-0.0364
	[0.0243]	[0.0389]	[0.0299]
Sterea Ellada	0.0511**	0.1608***	-0.1131***
	[0.0248]	[0.0345]	[0.0342]
Attiki	-0.0158	0.0537	-0.1049***
	[0.0233]	[0.0341]	[0.0298]
Peloponnisos	0.1146***	0.2043***	0.0083
	[0.0220]	[0.0364]	[0.0255]
Voreio Agaio	0.0353	0.1012	-0.0561
	[0.0488]	[0.0693]	[0.0633]
Notio Agaio	-0.0952**	-0.0674	-0.1617***
	[0.0412]	[0.0571]	[0.0577]
Kriti	-0.0220	-0.0123	-0.0796***
	[0.0234]	[0.0385]	[0.0287]
Athens	-0.0320*	-0.0459*	-0.0642***
	[0.0176]	[0.0274]	[0.0211]
Quarter (Ref: Q4)			
Q1	0.0051	-0.0014	0.0144
	[0.0136]	[0.0219]	[0.0167]
Q2	0.0072	-0.0060	0.0210
	[0.0137]	[0.0218]	[0.0167]
Q3	-0.0018	0.0018	-0.0038

		[0.0033]	[0.0041]	[0.0054]			[0.0138]	[0.0218]	[0.0171]
Constant	0.1074***	0.3774***	0.3222***	0.5209***		0.6477***	0.6099***	0.5145***	0.8855***
	[0.0016]	[0.0163]	[0.0216]	[0.0244]		[0.0084]	[0.0424]	[0.0691]	[0.0512]
Observations	73,503	73,503	39,228	34,275	**Observations**	7,013	7,013	3,244	3,769

Notes: Models estimated by ordinary least squares (OLS); Robust standard errors in brackets; *** p<0.01, ** p<0.05, * p<0.1.

ImPRovE: Poverty Reduction in Europe. Social Policy and Innovation

Poverty Reduction in Europe: Social Policy and Innovation (ImPRovE) is an international research project that brings together ten outstanding research institutes and a broad network of researchers in a concerted effort to study poverty, social policy and social innovation in Europe. The ImPRovE project aims to improve the basis for evidence-based policy making in Europe, both in the short and in the long term. In the short term, this is done by carrying out research that is directly relevant for policymakers. At the same time however, ImPRovE invests in improving the long-term capacity for evidence-based policy making by upgrading the available research infrastructure, by combining both applied and fundamental research, and by optimising the information flow of research results to relevant policy makers and the civil society at large.

The two central questions driving the ImPRovE project are:

> How can social cohesion be achieved in Europe?
>
> How can social innovation complement, reinforce and modify macro-level policies and vice versa?

The project runs from March 2012 till February 2016 and receives EU research support to the amount of Euro 2.7 million under the 7th Framework Programme. The output of ImPRovE will include over 55 research papers, about 16 policy briefs and at least 3 scientific books. The ImPRovE Consortium will organise two international conferences (Spring 2014 and Winter 2015). In addition, ImPRovE will develop a new database of local projects of social innovation in Europe, cross-national comparable reference budgets for 6 countries (Belgium, Finland, Greece, Hungary, Italy and Spain) and will strongly expand the available policy scenarios in the European microsimulation model EUROMOD.

More detailed information is available on the website http://improve-research.eu.

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