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Contractual Insecurity in the EU15: Using Multiple Surveys to Investigate Working with ‘No Contract’

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Abstract: Our analysis makes use of three comparative European datasets to investigate the nature and meaning of working with ‘No Contract’ across a range of European societies in the mid-2010s. Using the EU Labour Force Survey (EU-LFS, 1995-2015), European Working Conditions Survey (EWCS, 1995-2015), and European Social Survey (ESS, 2002-2016) we show that the presence of workers with ‘No Contract’ is a significant feature of the labour market for a small number of Mediterranean countries, Ireland and the UK. We analyse how respondents describe their employment situation in different countries, given different possible contract categories; the subjective perception of their labour market insecurity by workers in various contract situations; and investigate how ‘No Contract’ working relates to other key variables in particular work and employment configurations. The paper reveals two primary patterns of ‘No Contract’ working. The first is related to ‘temporary contract’ work, with ‘No Contract’ employment serving as a related form of casualised work in the Mediterranean economies in particular. This also suggests that estimates of precarity are somewhat under-estimated in Mediterranean and Liberal economies in Europe. The second is present only in the UK and Ireland and represents a group of ‘No Contract’ workers primarily in market services, whose situation is best analysed as a particular, potentially more uncertain, form of permanent work.

I INTRODUCTION

Much discussion of ‘labour market precarity’ assumes that ‘precarity’ is a dichotomous variable, with a clear break between being precarious or not. However, the research on the topic in the past decade or more has clearly shown

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that ‘precarity’ is often not only a matter of degree, but also varies along a wide range of different dimensions, such that no one indicator captures the full nature of precarity (Kalleberg, 2011; Standing, 2011). In this paper, we contribute to this literature by examining the nature and meaning of working with ‘No Contract’ across a range of European societies in the mid-2010s.

Recent research has explored both the variety of forms that ‘precarious’ employment can take, including forms that appear to be quite different from temporary employment (e.g. ‘bogus self-employment’), and the various forms of insecurities that can exist within and alongside apparently secure employment, including vulnerability to fluctuations in hours and income. Our analysis of working with ‘No Contract’ examines the meaning of precarity right at the classic apparent boundary between secure and precarious employment – the contract. This may appear to be a step backwards in the analysis of precarity but is in fact in keeping with the tendency in the recent literature to break down the clear distinction between ‘permanent’ and ‘temporary’ contractual relationships. It is worth noting that it is conceptually distinct from developments such as ‘zero-hours’ contracts which could be associated with a variety of contractual statuses. The most commonly used indicator of precarity remains the type of contract that characterises the employment relationship (Brady and Biegert, 2017; Benassi, 2016; Kalleberg, 2011; Kiersztyn, 2018; Mai, 2018; McVicar *et al.*, 2016; Rodgers and Rodgers, 1989; Schwander and Häusermann, 2013). Our analysis of survey data on employment contract types in the EU investigates the prevalence of different contracts – permanent/contract of unlimited duration, temporary/contract of limited duration, agency working, casual employment and, critically for our purposes, working with no contract at all. Different surveys utilise varying combinations of these categories and we describe the implications of this variation for summary measures of ‘precarity’. More importantly, we analyse the meaning of these contract types in different national institutional and socio-economic contexts. In the process, we add to our understanding of the multi-dimensional nature of precarity (even within contract types) and provide important correctives to the standard use of cross-national survey measures of employment precarity.

Our analysis makes use of three comparative European datasets; the EU Labour Force Survey (EU-LFS, 1995-2015), European Working Conditions Survey (EWCS, 1995-2015), and European Social Survey (ESS, 2002-2016). We use the distinctive features of each survey to shed further light on how contract types structure precarity.

We start by examining the patterns of employment contract across the three datasets and note some important differences between them. We highlight the particularly high prevalence of the ‘No Contract’ category, when it is available to respondents, in Mediterranean and Liberal capitalisms and certain countries, particularly in Greece, Italy, Portugal, Spain, Ireland and the UK. This raises the

possibility that the widespread use of the EU-LFS to track patterns of precarity may be misleading. However, this in turn depends upon how we should understand the 'No Contract' category.

The rest of the paper pursues this question of how we should understand the 'No Contract' category of employment relationship. We pursue this through three different strategies.

First, we make a resource out of what is typically seen as a difficulty, i.e. changes in the response categories to a key variable. For the purposes of this paper, the changes in the response options available for the 'employment contract' variable in the EWCS from 1995 to 2015 allows us to investigate the effect on other categories of the introduction of additional response options, and particularly 'No Contract'. While these changes have almost no effect in some countries, in the key countries listed above the changes are significant and take broadly different forms in the Mediterranean and Liberal economies. We can use this analysis to investigate the likelihood that workers in the 'No Contract' category would otherwise be likely to describe themselves as permanent, temporary or casual workers.

Second, we examine the matter of the 'precarity' of 'No Contract' employment more directly at the individual level by comparing how workers in different employment contracts perceive their own employment security. We are able to use questions about two different assessments of security (losing a job and unemployment) in the EWCS and ESS to investigate the perception of insecurity for workers working under different contract types in different regions of Western Europe.

Third, we recognise that the meaning of a contractual relationship may vary depending on the labour market context (including occupational and sectoral settings and worker demographics). This is particularly the case when the relationship is poorly defined and ambiguous, as is typically the case with no contract of employment. We therefore carry out a latent class analysis (LCA) of ESS data to explain the varying configurations of employment contracts in different countries, with Liberal countries (Ireland and the UK) representing a distinctive pattern within the EU15. Analysis of covariates in the LCA explains which demographic groups are most likely to find themselves working under particular forms of precarious employment contract in different regions of Western Europe. This allows us to identify significant differences in the social location of 'No Contract' relationships in Mediterranean and Liberal capitalisms, mirroring similar differences we find in subjective assessments of precarity.

We conclude by reviewing the significance of the 'No Contract' category for both our comparative understanding of precarity and for the validity of our most commonly used indicators of employment contract precarity.

II UNDERSTANDING LABOUR MARKET PRECARIETY

Classic statements in the literature on labour market insecurity focused on the divide between permanent and temporary employment, often with temporary employment status used as a proxy for precarity. Research on labour market insecurity which has investigated temporary employment has generally associated it with poor job quality and insecurity due to increased labour market vulnerability (Benassi, 2016; Gash, 2008; Giesecke, 2009; Reichelt, 2015). Benassi (2016) linked temporary contracts in Germany with lower skill-levels in employees, a combination which increased labour market vulnerability in employees through external flexibility (i.e. ease of replaceability of employees). Similarly, Gash (2008) found higher levels of transitions from temporary contract to unemployment for 'lower grade' workers in France and Denmark. However, she found that 'higher grade' workers in the UK and West Germany were less likely to transition from temporary work to permanent work than her reference group of manual workers, suggesting that in addition to contract status, skill-level may at times protect against insecurity but not uniformly across national institutional regimes. Reichelt (2015) also investigated the transitions from temporary work, though he only focused on Germany. He also found a connection between skill levels and vulnerability, with temporary contract status either bridging to permanent work or trapping an employee in unemployment depending on labour demand for low- and medium-skill jobs.

However, more recent analyses have significantly complicated our understanding of the link between the employment contract and insecurity. In particular, analyses have explored how, while a permanent or unlimited contract provided relative certainty about the employer's formal commitment, the nature of that commitment in practice is often significantly more complex. These complexities included the varying degrees to which permanent employment assured job quality and security (experienced and perceived) (Dixon *et al.*, 2013; Findlay *et al.*, 2017; Kiersztyn, 2018; Rodgers and Rodgers, 1989), income security and certainty (Brady and Biegert, 2017; Kalleberg, 2011; Mai, 2018; Rodgers and Rodgers, 1989), and developmental certainty (Kalleberg, 2011; Mai, 2018).

There have been similar efforts to understand the diversity and complexity of 'temporary employment'. In some cases, data categories and/or small sample sizes in sub-categories have made the analysis of different types of temporary employment impossible and this research has often combined all types of non-permanent employment into temporary employment (e.g. Gash, 2008).

However, Giesecke (2009) was able to compare the socio-economic consequences of various types of atypical employment in Germany. Workers with fixed-term contracts and agency work (external forms of flexibility) were compared with those in part-time work (internal flexibility). Those with fixed-term contracts and agency work suffered more negative socio-economic consequences than those with part-time employment, though the risks varied across types of temporary

employment. While the study supported the link between temporary work and poor job quality, it also indicated that there was variation in that job quality between different kinds of temporary jobs.

Research has therefore suggested that there are significant sources of variation in various forms of precarity within permanent and temporary employment, even if it is still clear that temporary employment generally tends to carry much greater risks of precarity. Our analysis adds to this deepened understanding of the relationship between contract type and precarity by investigating the meaning of more ambiguous contractual situations, including casual employment but particularly the category of 'No Contract'. As suggested by Lorenz *et al.* (2016), the absence of a contract could suggest a particularly highly casualised employment relationship, with not even the protection of a defined period of employment. However, the absence of an end-point to the contract could also in practice turn out to mean it is a *de facto* permanent employment situation (see the discussion of service relationships in Emmenegger 2009, for instance). Indeed, such employment relationships could be a middle category between permanent and temporary, depending on employee and employer resources and orientations, or indeed the presence of common law and employment law protections. This ambiguity in the meaning of 'No Contract', and the likely variation in its incidence and meaning, is the focus of our analysis.

We also expect that this incidence and meaning of 'No Contract' could vary by national context or, more broadly, the 'world of capitalism'¹ within which the worker is employed. While all worlds of capitalism have moved towards greater 'flexibility' in recent decades, comparative political economy suggests that very significant differences remain between how this operates in these different worlds, or varieties. Thelen (2014), for example, argues that flexibility is embedded in protective institutions in Nordic social democracies but part of a broader deregulation in Liberal economies. The continental Christian Democracies are apparently characterised by a dualism, based on significant divide between secure insiders and insecure outsiders. Although Thelen does not include them in her analysis, we would expect this divide to be even more dramatic in Mediterranean capitalisms, given the longstanding casualisation of the large secondary labour market in those economies. In our analysis, given the highly structured and regulated forms of temporary employment in the Nordic and Continental capitalisms, we expect incidence of 'No Contract' working to be low and to be linked to casualisation of employment. In Liberal economies, where there are generally weaker guarantees of the security associated with permanency, we expect

¹ We use the term 'world of capitalism' to capture the notion of a social world of capitalism, where market processes are embedded within particular social, political and institutional relations (Esping-Andersen, 1990). However, given the focus on work and employment, we drop his identification of 'welfare capitalism'.

to find a higher prevalence of ‘No Contract’ workers, and possibly among workers who would otherwise be expected to be in permanent employment. In Mediterranean capitalisms, given the strong boundaries around the privileges of permanency within the more broadly casualised labour markets, we might expect ‘No Contract’ to be more widely used as a form of casualisation.

Unfortunately, relatively few analyses have examined the ‘No Contract’ employment status directly. Both Kiersztyn (2018) and Mai (2018) used EWCS 2010 data and could have looked at various types of temporary work separately. However, within their analyses, ‘No Contract’ employment was combined with other non-permanent contract types as a type of temporary work. As stated by Kiersztyn,

These ... can be – at least in principle – easily terminated by employers and offer weaker legal protection for employees: direct fixed-term hires, temporary work agency employment, and lack of employment contract (this category may include, apart from informal employment, also various types of civil-law agreements) (2018, p. 103).

There is some further evidence in a relatively recent study by Lorenz *et al.* (2016) which used EWCS data to investigate the association between work organisation and learning opportunities. Four categories of contract type were included in the analysis – permanent, temporary, agency or no contract. Contract type was included as an independent variable to help predict the primary form of learning on the job: discretionary learning, constrained learning and simple. Discretionary learning (DL) jobs were those with high levels of discretion and learning. Constrained learning (CL) jobs had low levels of discretion but did offer learning opportunities. Simple jobs were defined as those with neither discretion nor learning opportunities.

Lorenz *et al.* (2016) found that all workers with permanent contracts were more likely to be involved in DL jobs than those with other contract types, while agency workers were the least likely to have access to DL jobs. Those with ‘No Contract’ were about as likely as temporary workers to access discretionary learning. However, temporary workers were more likely to be in CL jobs than any other contract type; while those without contract were the least likely. Those without a contract were the most likely to be in Simple jobs, those jobs most often linked with precarious work. It is striking therefore that ‘No Contract’ workers do not fit simply into hierarchies of permanency and access to one of the key benefits generally associated with permanency, learning.

In the remainder of this paper, we seek to add to this fairly sparse evidence regarding the meaning of ‘No Contract’ employment and how it intersects with work and organisational processes in shaping the levels of insecurity associated with this form of employment in different national contexts. We approach the question in three ways.

First, we exploit the variety and inconsistency of survey categories to examine what the ‘No Contract’ category means in different national contexts, through an analysis of which categories in repeated cross-sectional surveys decline when ‘No Contract’ is introduced as an option. This gives us at least some *prima facie* evidence as to the ‘functional equivalence’ between ‘No Contract’ and other categories, and how that varies across countries. Second, we directly investigate how workers in different contract arrangements experience insecurity, through an analysis of their expectations of unemployment. Finally, we examine how these forms of contract cluster together in different configurations of employment relations, concentrated within sectors, occupations and demographic groups, as is implied in the analysis of access to learning by contract type in Lorenz *et al.* (2016). For that reason, we also address the question of who is most likely to work in particular contractual arrangements involving ‘No Contract’, and which worlds of welfare capitalism are most associated with these arrangements.

III DATA AND METHODS

The core of our approach is to take advantage of the distinctive features, important strengths and (in some cases) relative weaknesses of three separate comparative European Surveys: the EU Labour Force Survey (EU-LFS) 1995-2016, the European Working Conditions Survey (EWCS) 1995-2015, and the European Social Survey (ESS) 2002-2016. All three surveys use random sampling and weighting (post-stratification) to approximate a representative sample. Although each survey has a different geographic range, our analysis is restricted to the EU15,² not including Luxembourg. These countries include Liberal (UK and Ireland), Nordic (Denmark, Finland and Sweden), Continental (Austria, Belgium, France, Germany and the Netherlands), and Mediterranean (Greece, Italy, Portugal and Spain) regions of Europe. Although there are more recent ESS and EU-LFS data available, we use the years closest to the EWCS of 2015, the last year that survey was conducted.

As shown in Table 1, the surveys vary in important ways in the coding options they offer for employment contract status. The EU-LFS question (one of the most widely quoted in comparative statistics) has only two options; a person can indicate that they have a permanent job/work contract of unlimited duration OR that they have a temporary job/work contract of limited duration. There is no option for ‘No Contract’. As such, the wording of the question forces those with no contracts to choose between those two options. However, the EWCS and the ESS offer a wider range of possible answers. For the most recent of both of those surveys, unlimited/indefinite contract, limited duration contract and ‘No Contract’ are all

² Data for Denmark were not available for ESS 2016, so data from ESS 2014 were included.

offered as separate options (along with ‘Apprenticeship’ and ‘Other’ in the EWCS). Each of the three parts of our analysis uses these data in different ways to examine the meaning of ‘No Contract’ employment.

Table 1: Coding for Employment Contract Status in EU-LFS, EWCS and ESS

<i>Survey (Years included in our analyses)</i>	<i>Coding for employment contract type</i>	<i>Year category added</i>
EU Labour Force Survey (1995-2015)	Person has a permanent job or contract of unlimited duration	Original
	Person has a temporary job/contract of limited duration	Original
European Working Conditions Survey (1995-2015)	Contract of unlimited duration	Original
	Contract of limited duration	Original
	A temporary employment agency contract	Original
	An apprenticeship*	2000
	No contract	2005
European Social Survey (2002-2016)	Other	2000
	Unlimited	Original
	Limited	Original
	No contract	2004

Note: *apprenticeship not included in analysis.

The first part of our analysis initially compares the overall prevalence of contract types across the surveys to provide a preliminary assessment of the impact of including ‘No Contract’, identifying a number of key countries where the difference between the surveys is greatest.

We then examine this in more detail by taking advantage of what might be considered a weakness in the data, the changing categories of survey responses allowed over time (particularly in the EWCS). While this weakens the consistency of the responses over time, it allows us to examine the effect of the changing categories on the mix of contract types over time and across different countries, revealing useful information about the meanings of ‘No Contract’ employment, in particular how it intersects with contracts of ‘unlimited duration’ (generally thought of as permanent employment) and the ‘Other’ category (generally thought of as casual employment).

The second part of our analysis focuses on employees’ understanding of their contract situations and particularly their perceptions about the degree of employment security that they have. Two of the surveys collected relevant attitudinal data; the 2015 EWCS asked respondents whether they agreed that ‘I might lose my job in the next six months’ while the 2016 ESS asked respondents ‘How likely is it that you will be unemployed and looking for work within the next

12 months'. This gives us further insight into the meaning of 'No Contract' as it reveals how these contract statuses are related to the experience of insecurity by workers themselves, as well as how those experiences vary across regions of Western Europe.

Third, and finally, we turn to our more detailed analysis of how the range of non-permanent employment situations are configured within broader sectoral and occupational configurations of employment. We use ESS data from 2016³ and carry out a latent class analysis (LCA) to identify typologies of 'contractually insecure' jobs across Western Europe based on indicators used to construct job types (Lukac *et al.*, 2019; van Aerden *et al.*, 2015). LCA is a data-reduction technique for categorical (nominal or ordinal) variables (McCutcheon, 1987). It accounts for the distribution of cases within a cross-tabulation, producing mutually exclusive latent classes from the indicators/manifest variables. LCA is particularly suitable for our analysis as it assists in identifying particular combinations of different categories across variables, generating a set of configurations of social statuses (e.g. employment contract, sector, occupation) that is suitable for the purposes of this analysis.

LCA identifies these latent classes through a maximum likelihood algorithm that was originally developed by Goodman (1974a; 1974b). For each case included in the analysis, the probability of being in a particular latent class is calculated as part of the solution with all probabilities adding to one for each respondent. To produce latent classes that are associated with different configurations of contractually insecure jobs, we included variables for contract types (Limited and No Contract), occupation (managers, professional and technicians; clerks and service workers; craft and related trades; and production/machine operators and elementary), sector (manufacturing; construction, transportation and electricity; personal services; producer services; education; and health and social work), and time (full-time or part-time).

A variety of indices including goodness-of-fit indices and classification statistics associated with the LCA are produced with the solution to assist in the selection of solution size. In addition to the variables used to build the latent classes (the configurations of insecure employment), it is also possible to include active covariates, such as gender, for instance, which approximate the role of independent

³ ESS 2016 data were used for the latent class analysis (LCA) for a number of reasons. While EWCS datasets include similar variables to ESS 2016, they were not used because recent surveys do not include a variable for citizenship, an important variable in literature related to 'insiders' and 'outsiders' and their ability to access jobs with standard employment relationships (see e.g. Kiersztyn, 2018; Lukac *et al.*, 2019). Also, ESS 2016 was used instead of the more recent ESS 2018 due to comparability in date of data collection with EWCS 2015 and because of the inclusion of the rotating module on welfare which asked respondents about perceived job security (see above), a question that is not included for all rounds of the ESS. The latest ESS data for Greece were from ESS 2010, so Greece was excluded from the latent class analysis. Respondents included in the LCA are residents of these countries who are employees in non-military or non-agricultural jobs whose main activity was paid work during the last seven days.

variables in a regression analysis (identifying factors shaping the likelihood of being in each configuration). For this analysis, we have included the following as active covariates: gender, age group, educational attainment, and citizenship; all variables linked with precarious work, (Schwander and Häusermann, 2013; Kalleberg, 2018; Kalleberg and Vallas, 2018; Lukac *et al.*, 2019). Region of Europe was also included to map the distribution of job types across countries and political economies. While multilevel analysis is possible with LCA, there are not enough countries included in our analysis for it to be used here.

To see how job type was associated with perceptions of insecurity, we included the variable, ‘How likely unemployed and looking for work next 12 months’ as an inactive covariate. Inclusion of variables in the analysis as inactive covariates does not impact the latent classes or prediction of membership in the latent classes, but instead provides a cross-tabulation of that variable with the resultant latent classes. (Appendix Table A.2 presents a summary of included variables from ESS 2016 for both the descriptive analysis (all employees) and the LCA (only contractually insecure employees). Table A.3 includes a summary of EWCS 2015 variables included in the analysis.)

IV RESULTS

We now present the results from the three stages of our analysis.

4.1 Using Variation across Surveys to Understand Contract Categories

We now turn to the first part of our analysis, using variation among the surveys to shed light on the meaning of particular employment contract categories. Table 2 shows the percentage of workers who indicated that they are on unlimited/indefinite contracts from each of the three surveys, EWCS 2015, ESS 2016 and EU-LFS 2015. While the results are broadly similar for most countries, the EU-LFS – the most widely cited of these data sources – provides the highest estimate of these more ‘permanent’ contracts in 11 of the 14 countries. In most cases, these differences are only about 2-4 per cent but there are a few countries that show considerable differences, most notably Greece, Ireland and, to a lesser extent, Italy and the UK. Portugal also shows some significant differences, although these are primarily with the ESS. Similarly, Spain shows some differences, but these are only with the EWCS.

While noting that care should be taken generally in using EU-LFS data as the sole source of data on non-permanent employment, the countries with the larger inconsistencies between the surveys raise more substantive issues. We can investigate these by examining how contractual insecurity has been measured over time. The coding for the EWCS variable for contract type has changed the most over time (as shown in Table 1). Table 3a compares the overall patterns of contract

Table 2: Proportion of Workers* on Unlimited /Indefinite Contracts; EWCS 2015, ESS 2016 and EU-LFS 2015

	<i>EWCS 2015</i>	<i>ESS 2016</i>	<i>EU-LFS 2015</i>
	<i>(95% CI)</i>	<i>(95% CI)</i>	
Austria	0.85 (0.82,0.88)	0.92 (0.90,0.94)	0.91
Belgium	0.87 (0.85,0.89)	0.87 (0.84,0.90)	0.91
Denmark**	0.88 (0.85,0.91)	0.88 (0.85,0.91)	0.92
Finland	0.87 (0.84,0.90)	0.84 (0.84,0.90)	0.85
France	0.83 (0.81, 0.85)	0.81 (0.78,0.84)	0.84
Germany	0.90 (0.88,0.92)	0.85 (0.83,0.87)	0.87
Greece**	0.67 (0.63,0.71)	NA	0.88
Ireland	0.73 (0.70,0.76)	0.55 (0.52,0.58)	0.91
Italy	0.78 (0.75,0.81)	0.80 (0.78,0.82)	0.86
Netherlands	0.73 (0.70,0.76)	0.78 (0.75,0.81)	0.80
Portugal	0.74 (0.70,0.77)	0.69 (0.65,0.73)	0.78
Spain	0.67 (0.65,0.69)	0.74 (0.71,0.77)	0.75
Sweden	0.87 (0.85,0.89)	0.90 (0.88,0.92)	0.83
UK	0.87 (0.85,0.89)	0.82 (0.79,0.85)	0.94
N	16,134	9,977	874,900***

Sources: * Respondents included are residents of these countries who are employees aged 15-64; EU-LFS source: Eurostat table lfsi_pt_a; 95 per cent confidence interval included for EWCS and ESS data due to relatively small sample sizes vis-à-vis EU-LFS; NA: Not available.

**ESS 2016 data not available for Denmark, used ESS 2014 data instead; no recent ESS data available for Greece; only includes employees whose main activity was paid work (previous seven days).

***Eurostat (2016).

precarity from the EWCS between 1995 and 2015 to provide a preliminary assessment of the impact of including 'No Contract' on Greece, Italy, Portugal, Spain, Ireland and the UK – those countries that showed the largest disparities across surveys. In 1995, respondents were only given three options – unlimited duration, limited duration and temporary agency contracts. The pattern of results in this year was broadly similar to the EU-LFS results. However, in 2000 the category of 'Other' was available to respondents and in 2005 the option of 'No Contract' was included. It is immediately clear that the differing proportions of workers saying that they are in permanent or unlimited contracts is directly due to the presence of the additional categories, particularly 'No Contract'. Adding the categories of fixed-term contracts and temporary employment agency contracts together for each country's EWCS statistics and then comparing with the EU-LFS statistics for temporary contracts indicates that the levels of 'temporary employment' are similar in the EWCS and EU-LFS data. However, if we add 'No Contract' and 'Other' as well, then a large disparity appears for all of these countries, with the EU-LFS suggesting much lower estimates than the EWCS. Similar disparities appear when comparing EU-LFS data with ESS data. As with the EWCS data, these differences became apparent when the 'No Contract' option was added to the ESS in 2004. Table 3b compares the overall patterns of contract precarity from the ESS from 2002, 2004, 2010, and 2016.

Referring to the EWCS data in Table 3a, the direction of the shifts in the percentage in certain categories as new responses were introduced is revealing. For Greece and Portugal, the introduction of the category 'Other' instantly decreased the percentage of those who said that they had an indefinite contract. For those workers who changed from 'indefinite' to 'Other', 'indefinite' was obviously not an accurate description of their employment relationship, in that it implies a permanent/long-term contract. However, indefinite actually means the term is not known, which could equally apply to a long-term or a casual employment relationship. With the addition of the option 'No Contract' in 2005, the percentages shifted again, with many of those who had responded 'Other' now responding 'No Contract', suggesting a loosely regulated relationship. There is a strong implication in this pattern of changes that 'No Contract' is used to refer to a highly casualised relationship, as many respondents availed of the 'Other' category when it was the only alternative available, indicating that they did not see their employment as permanent. Interestingly, within the Spanish data, the category that initially takes the biggest hit with the additional option of 'No Contract' is 'Fixed-term' contracts.

For Ireland, Italy, and the UK, the pattern is different. The introduction of the category 'Other' to the EWCS in 2000 did not produce a significant decline in the numbers choosing 'indefinite contract' in these countries. It is only when the option 'No Contract' is introduced in 2005 that many respondents shift out of 'indefinite' to 'No Contract'. The different pattern from Greece and Portugal does suggest that in Ireland, Italy, and the UK, the 'No Contract' relationship seems to be linked

Table 3a: Changing Patterns of Response to Question Regarding Employment Contract, EWCS 1995-2015

Country & year	n	Indefinite contract	Fixed term contract	Temporary employment agency contract	No contract (new in 2005)	Other (new in 2000)	EU LFS – temp contracts
Greece 95	492	0.82 (0.79,0.86)	0.11 (0.09,0.15)	0.06 (0.04,0.09)			0.14
Greece 00	837	0.53 (0.50,0.57)	0.06 (0.04,0.09)	0.03 (0.02,0.04)		0.38 (0.35,0.42)	0.12
Greece 05	655	0.57 (0.53,0.60)	0.09 (0.07,0.12)	0.04 (0.02,0.05)	0.26 (0.23,0.30)	0.04 (0.03,0.06)	0.13
Greece 10	664	0.58 (0.54,0.61)	0.10 (0.08,0.13)	0.01 (0.00,0.02)	0.29 (0.26,0.33)	0.02 (0.01,0.04)	0.12
Greece 15	619	0.67 (0.63,0.71)	0.10 (0.07,0.12)	0.01 (0.00,0.02)	0.22 (0.19,0.26)	0.01 (0.00,0.01)	
Italy 95	635	0.90 (0.88,0.93)	0.07 (0.05,0.09)	0.03 (0.02,0.05)			0.10
Italy 00	1,060	0.88 (0.86,0.90)	0.06 (0.04,0.07)	0.05 (0.04,0.06)		0.02 (0.01,0.2)	0.12
Italy 05	649	0.80 (0.77,0.83)	0.12 (0.10,0.15)	0.01 (0.00,0.02)	0.06 (0.04,0.08)	0.01 (0.01,0.03)	0.13
Italy 10	1,089	0.82 (0.79,0.84)	0.12 (0.11,0.15)	0.01 (0.00,0.01)	0.04 (0.02,0.05)	0.02 (0.01,0.03)	0.14
Italy 15	958	0.78 (0.75,0.81)	0.14 (0.12,0.16)	0.01 (0.01,0.02)	0.06 (0.05,0.08)	0.01 (0.01,0.02)	
Portugal 95	652	0.84 (0.81,0.87)	0.10 (0.08,0.13)	0.06 (0.04,0.08)			0.20
Portugal 00	1,148	0.76 (0.73,0.78)	0.13 (0.11,0.15)	0.01 (0.00,0.01)		0.10 (0.08,0.12)	0.19
Portugal 05	766	0.76 (0.73,0.79)	0.15 (0.12,0.18)	0.02 (0.01,0.03)	0.07 (0.05,0.09)	0.00 (0.00,0.01)	0.23
Portugal 10	773	0.71 (0.68,0.74)	0.16 (0.13,0.18)	0.02 (0.01,0.03)	0.11 (0.09,0.13)	0.00 (0.00,0.01)	0.22
Portugal 15	745	0.74 (0.70,0.77)	0.13 (0.11,0.16)	0.02 (0.01,0.04)	0.10 (0.08,0.13)	0.01 (0.00,0.02)	

Table 3a: Changing Patterns of Response to Question Regarding Employment Contract, EWCS 1995-2015 (Contd.)

Country & year	n	Indefinite contract	Fixed term contract	Temporary employment agency contract	No contract (new in 2005)	Other (new in 2000)	EULFS – temp contracts
Spain 95	702	0.61 (0.57,0.64)	0.30 (0.26,0.33)	0.10 (0.08,0.12)			0.32
Spain 00	1,116	0.66 (0.63,0.68)	0.27 (0.25,0.30)	0.03 (0.02,0.04)		0.04 (0.03,0.06)	0.33
Spain 05	793	0.66 (0.63,0.69)	0.21 (0.18,0.24)	0.04 (0.02,0.05)	0.08 (0.06,0.10)	0.01 (0.00,0.02)	0.25
Spain 10	853	0.69 (0.65,0.72)	0.18 (0.16,0.21)	0.02 (0.01,0.04)	0.07 (0.05,0.08)	0.05 (0.03,0.06)	0.25
Spain 15	2,687	0.67 (0.65,0.69)	0.25 (0.24,0.27)	0.01 (0.01,0.01)	0.05 (0.05,0.06)	0.02 (0.01,0.02)	
Ireland 95	754	0.85 (0.82,0.87)	0.11 (0.08,0.13)	0.05 (0.03,0.06)			0.10
Ireland 00	1,144	0.82 (0.80,0.85)	0.07 (0.06,0.09)	0.05 (0.04,0.07)		0.05 (0.04,0.07)	0.10
Ireland 05	798	0.58 (0.55,0.62)	0.10 (0.08,0.12)	0.03 (0.02,0.05)	0.28 (0.25,0.32)	0.01 (0.00,0.02)	0.10
Ireland 10	781	0.62 (0.59,0.66)	0.12 (0.10,0.15)	0.01 (0.01,0.03)	0.24 (0.21,0.27)	0.01 (0.00,0.02)	0.10
Ireland 15	812	0.73 (0.70,0.76)	0.08 (0.06,0.10)	0.03 (0.02,0.04)	0.13 (0.11,0.16)	0.03 (0.02,0.04)	0.10
UK 95	914	0.90 (0.88,0.92)	0.07 (0.05,0.09)	0.03 (0.02,0.04)			
UK 00	1,265	0.84 (0.82,0.86)	0.09 (0.08,0.11)	0.02 (0.01,0.03)		0.04 (0.03,0.06)	0.07
UK 05	841	0.69 (0.66,0.72)	0.14 (0.11,0.16)	0.03 (0.02,0.04)	0.15 (0.12,0.15)	0.00 (0.00,0.00)	0.06
UK 10	1,260	0.83 (0.81,0.85)	0.07 (0.05,0.08)	0.01 (0.00,0.01)	0.09 (0.07,0.10)	0.00 (0.00,0.01)	0.06
UK 15	1,328	0.87 (0.85,0.89)	0.04 (0.03,0.06)	0.02 (0.02,0.03)	0.04 (0.03,0.06)	0.02 (0.02,0.03)	0.06

Source: Data: EWCS 1995-2015 (employees aged 15-64); EU-LFS 2000-2015 (temporary as percentage of all employees not available for 1995).

somewhat more clearly to some idea of permanency, or at least long-term stability, as there was no initial redefinition of permanent as ‘Other’ as there was in Greece. It is notable that the proportion of ‘No Contract’ workers decreased in 2015. While a full analysis of this trend is beyond the scope of this paper, there are a number of possible reasons for this, including institutional and legal changes that have increasingly regulated the form of the employment relationship (focusing on the provision of contracts, even where contracts are not particularly employee-friendly in terms of content) and also sectoral changes (e.g. the decline during the Great Recession between 2010 and 2015 in construction employment, which has a relatively high proportion of casual employment).

Table 3b traces the change in coding for the contract variable from the ESS. The coding was changed from 2002 to 2004; from 2004 forward, the coding for the contract variable included the option ‘No Contract’. As can be seen from the table, the patterns are much the same as they were in Table 3a with the EWCS data: once the option of ‘No Contract’ is added, the percentage of workers on ‘indefinite’ contracts in Ireland and Greece reduces substantially. There is a similar decrease in the percentage of workers on ‘indefinite’ contracts in Italy, Portugal, and the UK, but the change is much smaller. Interestingly, as with the results from EWCS analysis in Table 3a, the category that seems to decrease most within Spain with the addition of ‘No Contract’ is ‘Limited Contract’. However, within the Spanish ESS data, ‘No Contract’ was chosen by relatively few respondents.

There is a clear decline in the EWCS data in the percentage of those in Ireland on ‘No Contract’ from 2010 to 2015. However, the percentage of those on ‘No Contract’ within sectors barely changed for most sectors. The bulk of this appears to be due to the decline in the percentage of employment in the construction sector between those two time periods. We see no such decline in the percentage of workers on ‘No Contract’ in the ESS data, but the percentage of the sample working in construction remained largely stable in the ESS surveys. It is not entirely clear why the loss of construction jobs was not reflected as fully in the ESS surveys. It may be that despite our inclusion of only respondents whose main activity was paid work in the last seven days, that some respondents gave information relating to a previous job. The EWCS survey excluded anyone who had not worked at least one hour in the previous week. Nonetheless, the key point is that the change appears to relate primarily to the sectoral composition of employment rather than to changing employment relations within sectors.

This first stage of our analysis revealed high levels of ‘No Contract’ employment in Mediterranean and Liberal capitalisms. We have showed that in the absence of a ‘No Contract’ option in surveys, these workers will tend to answer that they are in permanent or unlimited contracts. This poses a difficulty for estimating headline rates of ‘precarity’ as it is quite possible that workers with ‘No Contract’ might be in a more precarious employment situation than those with permanent or unlimited contracts. For example, as was shown in Table 3, the

Table 3b: Changing Patterns of Response to Question Regarding Employment Contract, ESS 2002, 2004, 2010 and 2016

<i>Country & year</i>	<i>n</i>	<i>Unlimited contract</i>	<i>Limited contract</i>	<i>No contract (new in 2004)</i>	<i>EU LFS-temp contracts</i>
Greece 02	593	0.80 (0.76, 0.83)	0.20 (0.17, 0.24)		
Greece 04	635	0.54 (0.50, 0.58)	0.11 (0.09, 0.14)	0.35 (0.31, 0.39)	
Greece 10	627	0.64 (0.60, 0.67)	0.11 (0.08, 0.13)	0.26 (0.22, 0.29)	0.13
Greece 16	NA				
Italy 02	344	0.89 (0.85, 0.92)	0.11 (0.08, 0.15)		
Italy 04	468	0.81 (0.77, 0.84)	0.15 (0.12, 0.19)	0.04 (0.03, 0.07)	
Italy 10	NA				0.13
Italy 16	853	0.80 (0.78,0.82)	0.16 (0.14,0.19)	0.04 (0.03, 0.06)	
Portugal 02	541	0.81 (0.77, 0.84)	0.19 (0.16, 0.23)		
Portugal 04	715	0.78 (0.75, 0.81)	0.19 (0.16, 0.22)	0.03 (0.02, 0.05)	
Portugal 10	793	0.76 (0.73, 0.79)	0.18 (0.15, 0.20)	0.07 (0.05, 0.09)	0.23
Portugal 16	487	0.69 (0.65, 0.73)	0.24 (0.20, 0.28)	0.07 (0.05, 0.10)	
Spain 02	544	0.71 (0.67,0.75)	0.29 (0.25,0.33)		
Spain 04	682	0.73 (0.70,0.76)	0.22 (0.19,0.25)	0.05 (0.03,0.07)	
Spain 10	688	0.76 (0.72,0.79)	0.23 (0.20,0.26)	0.02 (0.01,0.03)	0.25
Spain 16	750	0.74 (0.71,0.77)	0.24 (0.21,0.28)	0.01 (0.01,0.02)	
Ireland 02	716	0.81 (0.78, 0.84)	0.19 (0.16, 0.22)		
Ireland 04	934	0.57 (0.54, 0.60)	0.11 (0.09, 0.13)	0.32 (0.29, 0.35)	
Ireland 10	792	0.62 (0.58, 0.65)	0.11 (0.09, 0.13)	0.27 (0.24, 0.31)	0.10

Table 3b: Changing Patterns of Response to Question Regarding Employment Contract, ESS 2002, 2004, 2010 and 2016 (Contd.)

<i>Country & year</i>	<i>n</i>	<i>Unlimited contract</i>	<i>Limited contract</i>	<i>No contract (new in 2004)</i>	<i>EU LFS-temp contracts</i>
Ireland 16	1,097	0.55 (0.52, 0.58)	0.19 (0.17, 0.21)	0.26 (0.24, 0.29)	
UK 02	1,115	0.87 (0.85, 0.89)	0.13 (0.11, 0.15)		
UK 04	784	0.77 (0.74, 0.80)	0.10 (0.08, 0.12)	0.14 (0.11, 0.16)	
UK 10	1,014	0.82 (0.80, 0.85)	0.09 (0.07, 0.11)	0.09 (0.07, 0.11)	0.06
UK 16	845	0.82 (0.79, 0.85)	0.09 (0.07, 0.12)	0.09 (0.07, 0.11)	

Source: Data: ESS data 2002, 2004, 2010 and 2016 employees aged 15-64, only includes employees whose main activity was paid work during previous seven days.

EU-LFS estimated precarious (non-permanent) employment in Ireland in 2015 as 10 per cent. This is close to the EWCS estimate of 11 per cent on various forms of limited term contracts. However, if even one-third of those on ‘no’ (13 per cent) and ‘other’ (2 per cent) contract statuses are counted as precarious, then the headline rate estimated through the EWCS rises to about 16 per cent. At other times, the effect would have been even larger. The effect in the UK is present but less dramatic, while the effect in Greece is to push the ‘headline rate’ to almost double the EU-LFS estimate. The gap is less dramatic in other countries, with some of the Mediterranean countries also possibly seeing small effects (although we have not examined that in full detail in this paper). This raises the issue of how ‘No Contract’ employment is related to the perception of insecurity, a question to which we now turn.

4.2 Using Perceptions of Insecurity to Understand ‘No Contract’ Employment

The analysis so far indicates that ‘No Contract’ is an important form of ‘employment relationship’ in a small subset of Mediterranean and Liberal political economies, one which many employees see as distinct from a range of more widely recognised contractual categories. It is also noteworthy that ‘No Contract’ and ‘Other’ are barely present in the Nordic and Continental worlds of capitalism. Nonetheless, we can investigate employees’ subjective perceptions and expectations about their personal level of employment security, across the various contract types and all four worlds of capitalism. This will provide more direct evidence on how security is linked to contract status, at least in the subjective perceptions of the

employees themselves. While these perceptions are themselves affected by macrolevel institutions, they still represent a significant element in employees' experience of their employment situation (Hipp, 2016).

Table 4 outlines workers' perceptions of the likelihood of unemployment in the next six months (from EWCS 2015) and in the next 12 months (from ESS 2016). Given that n can be quite small for some countries within contract types, countries have been grouped geographically into regions. Reassuringly, the patterns of results across the two surveys are quite similar, at least for the key country groupings in our analysis. Furthermore, looking across the types of contract, it is clear that those who feel the most secure are those with indefinite contracts. Not surprisingly, those who are most likely to expect to be unemployed are those with fixed-term contracts; they know their job has a defined end-date. Levels of insecurity among those without contracts sit between these two poles.

Table 4: Perception of Likelihood of Unemployment by Contract Status, 2015-2016

<i>Percentage within each contract type agree/strongly agree: 'I might lose my job in the next six months'</i>					
<i>EWCS 2015</i>	<i>Continental</i>	<i>Nordic</i>	<i>Mediterranean</i>	<i>Liberal</i>	<i>All Countries</i>
Unlimited	9.2	9.3	14.7	9.1	11.7
Limited*	46.4	42.9	54.3	41.0	43.4
No Contract	17.4	24.2	35.3	21.6	23.6
All Contract Statuses	14.1	13.8	24.9	12.8	16.9
<i>Percentage within each contract type likely/very likely: 'Likely unemployed and looking for work next 12 months'</i>					
<i>ESS 2016</i>	<i>Continental</i>	<i>Nordic</i>	<i>Mediterranean</i>	<i>Liberal</i>	<i>All Countries</i>
Unlimited	13.4	8.2	18.5	11.3	13.2
Limited	43.9	49.2	66.1	32.8	48.9
No Contract	31.1	40.0	61.9	31.1	36.2
All Contract Statuses	19.7	18.4	34.2	19.6	22.4

Source: (EWCS and ESS: employees 15-64) *includes contract of limited duration and temporary employment agency contract; ESS 2016 does not include data from Greece or Denmark; within other countries, only employees whose main activity was paid work during the last seven days.

Adding the option of 'No Contract' adds to our understanding of insecurity in these countries. In Mediterranean countries it adds significantly to labour market insecurity, already higher than elsewhere in the EU15 (both in the prevalence of insecure contracts and the perceived insecurity within every type of status). The

level of insecurity among ‘No Contract’ workers is higher in the Mediterranean countries than in any other part of the EU15. It is the lowest in Liberal and Continental countries. This very much supports common interpretations of the comparative political economy of labour market insecurity, given that the effect is in the expected direction, as the dualism in Mediterranean labour markets between workers with permanent contracts and those without is well known (e.g. Schwander and Häusermann, 2013).

The Liberal political economies of the UK and Ireland have broadly similar rates of perceived insecurity among permanent and limited-contract workers as Continental and Nordic economies that apparently offer greater security. In addition, we know from the EU-LFS and EWCS that Ireland and UK have no higher rates of temporary employment than in most other EU15 countries. When we look at ‘No Contract’ the picture changes somewhat (particularly in Ireland, which has higher rates of this kind of contract status). Workers with ‘No Contract’ have a stronger expectation of unemployment than the permanent workers, despite the tendency for them to identify as ‘permanent’ when not given the option of ‘No Contract’. Nonetheless, they do not feel any less secure than the ‘No Contract’ workers in the Continental and Nordic societies. The distinctiveness of the Liberal political economies for ‘No Contract’ workers lies not in a particularly high comparative perception of insecurity but in the combination of lower perceived security than the permanent workers with a relatively high proportion of the workforce working without a contract. Given the higher proportion of ‘No Contract’ workers in Liberal economies, if these perceptions of insecurity are close to reality, this would imply a greater level of labour market turbulence in the Liberal market economies, even though such workers might think of themselves as broadly ‘permanent’.

4.3 Understanding the Configurations of ‘No Contract’ Employment

The analysis of differences in perceptions of insecurity identifies differences in the levels of insecurity across different contract types. We now turn to the identification of how different contract types fit in to particular configurations of employment, what we might consider as the broader ‘employment compact’. Indeed, as we have already seen in comparing Greece and Portugal with Italy, Ireland, Spain and the UK, the ‘meaning’ of the same institutional form (in this case ‘No Contract’) can be different in different settings. In this section, we examine these configurations more closely – firstly by examining which non-permanent contract statuses combine with working time, sector and occupation and the socio-demographics that affect membership in these configurations.

To investigate this, we carried out a latent class analysis on ESS 2016 data relating only to contractually insecure workers, i.e. those with a fixed-term contract or no contract. Indicators used to develop job types were those that would help

define the job in terms of contractual and temporal insecurity (contract type and full-time/part-time working status) and key variables relating to the organisation of production (occupation and sector). While originally part of the analysis, company size was not included in the final LCA because it did not differentiate between latent classes. As described in the methods section, active covariates were also included and used to assess the risk groups which are associated with each configuration of contracts, including gender, age, educational attainment, citizenship, and region of Europe. An inactive covariate for perceived security (likelihood of unemployment in the next 12 months) was also added to assess how levels of perceived security varied across job types. Given that this was an exploratory analysis, goodness-of-fit indices and classification statistics were used to help select final solution size (as discussed and shown in the Appendix and Table A.1). As presented in Table 5, a 4-class solution was chosen as the final solution size.

The first main class, Service – Limited Contract, is perhaps the type of insecure work that is the dominant image in the debate i.e. the worker in customer service occupations and industries with high rates of part-time work, including health care and social work. These are predominantly clerks and service workers. Most of these workers have fixed-term contracts, though there are some within this job type working without contract.

The other main type, Professional – Limited contract, contains workers at the upper end of the occupational ladder, with a large proportion of managers, professionals, and technicians. These jobs are most likely in producer services and education but are also likely in health care and social work. These are also, generally, full-time jobs. This job type has the lowest likelihood of a worker being employed without a contract.

The next class of limited contract jobs are in Production – Limited contract. These include craft workers, production/machine operators, as well as those in elementary occupations. These jobs are most predominant in manufacturing, construction, transport and related jobs. More likely than not, these are full-time jobs. Similar to Service – Limited contract, though, while most workers in this job type are on fixed-term contracts, there are some workers within this job type without contract.

The final class of jobs is the only job type that contains a high proportion of workers with no contracts. In terms of occupations, these are workers at the mid- to upper end of the ladder including managers, professionals, and technicians as well as clerks and service workers. They are found in the primarily private sectors of professional and personal services as well as to some extent in health care and social work. In the sectoral and occupational mix and the somewhat higher percentage of staff working part-time, this class is similar to the second class of Professional – Limited contract jobs.

Table 5: 'Contractually Insecure' Job Typologies from Latent Class Analysis of ESS 2016

	<i>Service – Limited Contract</i>	<i>Professional – Limited Contract</i>	<i>Production – Limited Contract</i>	<i>Professional & Service – No Contract</i>
Cluster Size	0.318	0.301	0.238	0.143
Indicators				
Contract				
Limited	0.849	0.925	0.772	0.041
No contract	0.151	0.075	0.228	0.959
Occupation				
Managers, professionals & technicians	0.100	0.906	0.043	0.391
Clerks & service workers	0.710	0.093	0.042	0.392
Craft and related trades	0.008	0.000	0.447	0.043
Plant/machine operators & Elementary	0.182	0.001	0.469	0.174
Sector				
Manufacturing & mining	0.005	0.102	0.340	0.087
Construction, transport & related jobs	0.040	0.064	0.464	0.080
Personal services	0.460	0.053	0.103	0.408
Producer services	0.152	0.231	0.059	0.245
Public Administration	0.052	0.058	0.024	0.005
Education	0.079	0.288	0.009	0.051
Health & Social Work	0.211	0.205	0.002	0.125
Part-Time Status				
Part-time	0.335	0.170	0.063	0.246
Full-time+	0.665	0.831	0.937	0.754

Source: ESS 2016 + data for ESS 2014 Denmark; all employees in non-military or non-agricultural jobs; only employees whose main activity was paid work during the last seven days.

Having identified these distinctive groups, we can turn to our analysis of the active covariates to identify the socio-demographic groups most at risk of various forms of insecure employment (as shown in Table 6). This is indicated by the proportion of each group (within our sub-sample of insecure workers) in each of the four forms of insecure job.

Table 6: Active Covariates in Predicting Latent Class Membership and Inactive Covariate

	<i>Service – Limited Contract</i>	<i>Professional – Limited Contract</i>	<i>Production – Limited Contract</i>	<i>Professional & Service – No Contract</i>
Cluster Size	0.318	0.301	0.238	0.143
Active Covariates				
Age Groups				
15 thru 24	0.226	0.084	0.235	0.104
25 thru 34	0.260	0.456	0.256	0.314
35 thru 44	0.173	0.245	0.188	0.203
45 thru 54	0.209	0.123	0.197	0.205
55 thru 64	0.113	0.073	0.104	0.147
65 and over	0.012	0.015	0.014	0.014
(missing)	0.007	0.004	0.007	0.014
Gender				
Male	0.339	0.443	0.859	0.497
Female	0.661	0.557	0.141	0.503
Citizen				
Yes	0.887	0.934	0.878	0.858
No	0.111	0.066	0.119	0.135
(missing)	0.002	0.000	0.003	0.007
Education				
Lower secondary or less	0.298	0.001	0.404	0.179
Upper secondary	0.455	0.111	0.415	0.205
Vocational or tertiary	0.244	0.887	0.171	0.592
(missing)	0.002	0.001	0.009	0.023
Region of Europe				
Continent	0.366	0.389	0.326	0.001
Nordic	0.127	0.209	0.125	0.001
Mediterranean	0.290	0.157	0.357	0.001
Liberal (IE & UK)	0.217	0.244	0.192	0.998
Inactive covariate				
Likely Unemployed in next 12 month				
Unlikely	0.525	0.658	0.520	0.811
Likely	0.399	0.283	0.422	0.155
(missing)	0.076	0.059	0.059	0.034

Source: ESS 2016 + data for ESS 2014 Denmark; all employees in non-military or non-agricultural jobs; only employees whose main activity was paid work during the last seven days.

Two of the classes are broadly ‘working class’; the Service – Limited Contract and Production – Limited Contract classes. Workers in these classes are less likely to have a vocational and/or tertiary education than the other job types and are generally most concentrated in the younger age groups (particularly from 15-34). The primary difference between them is gender, with more women in Services and more men in Production. While workers in these two classes are predominantly working under ‘Limited Contracts’, there is a small proportion of ‘No Contract’ workers also. These two classes are particularly common in Mediterranean economies but are present across all regions of Europe.

The remaining two classes are both predominantly associated with managerial and professional workers, although the second class is almost exclusively based on limited contracts and the fourth class on ‘No Contract’ workers. Workers in the Professional – Limited Contract class are likely to be a little older than those in Service – Limited Contract (between 25-44 years). Gender is not a particularly differentiating variable, though women are slightly more predominant than men in this job type. Of the four job types, Professional – Limited Contract is the least likely to be held by a non-citizen. It is also the only job type that is predominantly held by those with vocational and/or tertiary educational attainment. Professional – Limited Contract jobs exist across Western Europe, although with a slightly lower proportion of insecure workers when compared to Mediterranean economies.

The final job type from this analysis is Professional and Service – No Contract, which offers an alternative institutional model of non-permanent employment for professionals and service workers. This job type is a bit different in that it spans age groups and seems fairly equally distributed between men and women. Interestingly, it is the most likely to include non-citizens, though the differences relative to other job types are small. This is a reasonably highly educated group with most workers having at least upper secondary if not vocational or tertiary education. Nonetheless, it is not as exclusive to tertiary educated workers as the Professional – Limited Contract class. Most strikingly, it really only exists in Liberal economies and is the only one that is made up almost entirely of workers without contracts. It is a distinctively Liberal configuration of employment relations.

The ESS question asking employees if they believe that they will be unemployed within the next 12 months was included as an inactive covariate in our analysis. Unsurprisingly, workers in both Service – Limited contract and Production – Limited Contract are the most likely to believe they will be unemployed within that time. Those in the Professional – Limited Contract group are somewhat less likely. However, a much smaller proportion of workers in the Professional and Service – No Contract group believe that it is likely that they will be unemployed within the next 12 months. In fact, if we compare the proportion within this group (‘No Contract’ workers in Liberal Europe) to the proportion across all workers in Western Europe (all employees in ESS 2016 from included countries) who believe that it is likely they will be unemployed in the next 12 months (see Table A.2), the proportions are almost the same.

So, while literature that has included ‘No Contract’ as an option for contract type has treated ‘No Contract’ workers as precarious (Mai, 2018 and Kiersztyn, 2018, for instance), those within Professional and Service – No Contract (a job type entirely within Liberal Europe) do not see themselves that way.

‘No Contract’ workers appear to split into two groups. As shown in Table 7, approximately 35 per cent of those without contracts are in the categories of Service – Limited Contract and Production – Limited Contract that are classic reservoirs of employment insecurity. However, 65 per cent of workers without contracts are in employment configurations where they are more likely to perceive themselves as being relatively secure in their jobs (Professional and Service – No Contract, and to a lesser extent Professional – Limited Contract). This relative feeling of security is strongest in the Liberal Professional and Service – No Contract configuration. In short, 35-40 per cent of ‘No Contract’ workers work in settings where the predominant form of non-permanent work is the limited duration contract and where perceived insecurity is relatively high, while the remaining 60-65 per cent work in employment configurations, exclusively in Liberal economies, where all insecure workers are ‘No Contract’ but where perceived insecurity is no higher than in the workforce as a whole.

Table 7: Contract Status by Insecure Job Type, ESS 2016* – ‘Contractually Insecure’ Workers Only

	<i>Contract type</i>		
	<i>Limited</i>	<i>No contract</i>	<i>Total</i>
Service – Limited contract	36.90%	14.00%	30.90%
Professional – Limited contract	38.70%	6.30%	30.20%
Production – Limited contract	24.40%	20.50%	23.40%
Professional & Service – No contract	0.00%	59.20%	15.50%
Total	100.00%	100.00%	100.00%
<i>n</i>	1,387	493	1,880

Source: *ESS 2016 + ESS 2014 data for Denmark; all employees without contract of unlimited duration in non-military or non-agricultural jobs; only employees whose main activity was paid work during the last seven days.

V CONCLUSION

While our understanding of the various forms of labour market precarity has greatly improved in recent years, there is a fundamental ambiguity that remains regarding

the core measure of precarity i.e. the nature of the employment contract. This paper has focused on one element of this ambiguity; the meaning of working under 'No Contract', a status which we found was almost exclusive to Mediterranean and Liberal capitalist economies. We found that, if 'No Contract' employment involves a great degree of precarity than permanent employment, then employment insecurity in Liberal and especially Mediterranean economies would be underestimated.

The question remains of the exact meaning of 'No Contract'. Perceived insecurity among 'No Contract' workers is about 2-3 times that among unlimited contract workers, although it is about 4-5 times higher among limited workers. The perceived precarity of 'No Contract' is worst in Mediterranean and least in Liberal countries. However, the levels of 'No Contract' in Liberal countries is far higher than in Nordic and Continental countries, so that its overall impact on perceived insecurity remains significant.

Our analysis of employment configurations, using Latent Class Analysis, added to our understanding of these comparative differences. We found four employment configurations, which we can summarise as involving two different forms of employment for 'No Contract' workers.

The first three of the configurations we identified are dominated by limited duration contracts with relatively high expectations of upcoming unemployment. Just over one-third of 'No Contract' workers are in such settings, which are particularly prevalent in Mediterranean economies although present across Europe. While the level of 'No Contract' employment is high in Mediterranean societies, these workers do not show up in the fourth configuration. It appears therefore that 'No Contract' employment in Mediterranean economies is closely associated with 'limited contract' employment configurations. This is the classic world of 'temporary' employment, and we find that 'No Contract' hides an even wider presence of that casualisation of employment than revealed in the headline figures, and particularly in the Mediterranean economies.

The last configuration of insecure employment is exclusive to 'No Contract' employment in Liberal economies, with just under two-thirds of 'No Contract' workers, primarily concentrated in producer and personal services. If these workers were reporting very high rates of perceived insecurity, this would represent a new form of precarity. However, they are in fact least likely to expect to be unemployed of all the insecure workers and their expectation of unemployment is no higher than the labour force as a whole. This configuration therefore appears to add primarily to the literature on the deregulation of permanent work, suggesting that there is a category of permanent workers in Liberal economies working long-term without contracts. This does not mean that 'No Contract' work is unproblematic. Lorenz *et al.* (2016) using very similar data found that access to learning and discretionary work was much worse for 'No Contract' workers than for similar workers on unlimited contracts. We might expect that the lack of a contract would weaken their

bargaining power and increase their reliance on common law, employment tribunals and other legal mechanisms.

Furthermore, there is the question of whether perceived security varies across worlds of capitalism; for example, Privalko (2017) shows that workers in the UK are more likely than similar workers in Germany to perceive themselves to have benefitted from a change of job, even when there is no evidence that they have done so. However, the question of these varying perceptions across worlds of capitalism of the nature and consequences of labour market mobility is a phenomenon that should be examined in the context of the flexibility and insecurities of permanent work, especially in Liberal economies, rather than simply added as a form of temporary, insecure employment.

While there is no single answer to the question of how to understand, measure and compare labour market precarity across countries, our analysis both supports the burgeoning literature on the diversity of forms of precarity and suggests caution in interpreting some of the most widely used comparative measures of labour market precarity. It also shows the value of using multiple datasets and treating the differences between them, not simply as frustrations, but as opportunities for advancing knowledge.

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APPENDIX

LCA provides goodness-of-fit indices and classification statistics to assist in choosing the best solution size. Table A.1 shows goodness-of-fit indices for one to seven classes, including the Bayesian information criterion (BIC), Akaike's information criterion (AIC), and Consistent Akaike Information Criterion (CAIC). Lower values are associated with better fitting models (Nylund *et al.*, 2007). Also, L-squared is included and per cent change in L-squared. Smaller incremental changes indicate that the model is not improving much with each additional class. Classification statistics are also provided, specifically classification errors and reduction in error.

As can be seen from Table A.1, both BIC and CAIC improve quite a bit up to the 4-class solution. After that, improvements to both indicators are quite small when moving from a 4-class solution to a 5-class solution. For the BIC, the 6-class solution also shows a slight improvement relative to a 4-class solution (though not to the 5-class solution), but the difference is quite small. Percentage change to L-squared starts falling off after a 3-class solution with only small, incremental improvements as solution size increases from there. In terms of reduction in error, the 4-class solution indicates the best solution size, though it is quite close to both a 3-class and 5-class solution. Overall, classification errors increase as solution size increases.

Since both BIC and CAIC improve quite a bit with each additional class until a 4-class solution and then improve only moderately with a 5-class solution, we have chosen a 4-class solution for a more parsimonious solution. This is also the solution size which indicates the largest reduction in errors.

Table A.1: Goodness of Fit Indices and Classification Statistics, Latent Class Analysis

	1 cl	2 cl	3 cl	4 cl	5 cl	6 cl	7 cl
Degrees of freedom (df)	1,869.0	1,845.0	1,821.0	1,797.0	1,773.0	1,749.0	1,725.0
L-squared (L^2)	8,117.5	6,965.2	6,247.3	5,968.1	5,760.3	5,598.3	5,492.8
% change in L^2		-0.14	-0.23	-0.26	-0.29	-0.31	-0.32
BIC (based on L^2)	-5,976.9	-6,948.2	-7,485.2	-7,583.4	-7,610.3	-7,591.4	-7,515.9
AIC (based on L^2)	4,378.5	3,274.3	2,604.4	2,373.2	2,213.4	2,099.4	2,041.9
CAIC (based on L^2)	-7,846.4	-8,793.7	-9,306.6	-9,380.9	-9,383.8	-9,340.8	-9,241.3
Classification errors	0.00	0.07	0.10	0.11	0.12	0.13	0.16
Reduction of errors	1.00	0.79	0.84	0.85	0.83	0.81	0.79

Source: Authors' analysis.

Table A.2: Descriptive Summary of Statistics for all Variables Included in LCA and Covariates from ESS 2016

<i>Indicator</i>		<i>All workers</i>	<i>Workers on Fixed term or 'No Contract' only</i>
Contract type	Unlimited duration	0.81	
	Limited duration/Fixed term	0.14	0.74
	No contract	0.05	0.26
Occupation	Managers, Professionals & Technicians	0.47	0.37
	Clerks & Service workers	0.28	0.32
	Craft and related trades workers	0.11	0.11
	Plant/machine operators & Elementary	0.15	0.20
Sector	Manufacturing & mining	0.16	0.13
	Construction, Transport & Electricity	0.15	0.15
	Personal services	0.19	0.24
	Producer services	0.18	0.17
	Public Administration	0.06	0.04
	Education	0.10	0.12
	Health & Social Work	0.15	0.15
Part-time (<30 hrs/wk)	Part-time	0.13	0.21
	Full-time	0.87	0.79
Age Groups	15 thru 24	0.07	0.17
	25 thru 34	0.22	0.33
	35 thru 44	0.25	0.21
	45 thru 54	0.29	0.18
	55 thru 64	0.17	0.11
	65 and over	0.01	0.01
Gender	Male	0.51	0.52
	Female	0.49	0.48
Citizen	Yes	0.94	0.90
	No	0.06	0.10
Education	Lower secondary or less	0.17	0.22
	Upper secondary	0.36	0.31
	Vocational or tertiary	0.47	0.48
Region of Europe	Continent	0.42	0.32
	Nordic	0.20	0.14
	Mediterranean	0.19	0.23
	Liberal (UK & IE)	0.19	0.33
Unemployed in next 12 mths.	Unlikely	0.86	0.65
	Likely	0.14	0.35

Source: Data: ESS 2016 + ESS 2014 data for Denmark (Denmark did not participate in ESS 2016); employees in non-military or non-agricultural jobs.

Table A.3: Descriptive Summary of Statistics for Variables from EWCS 2015

<i>Indicator</i>		<i>All workers</i>	<i>Workers on Fixed term or 'No Contract' only</i>
Contract type (original)	Contract of unlimited duration	0.81	
	Contract of limited duration	0.12	0.62
	A temporary employment agency contract	0.02	0.09
	No contract	0.05	0.25
	Other	0.01	0.05
Contract type (recoded to match ESS)	Unlimited	0.81	
	Limited	0.14	0.70
	No contract	0.06	0.30
I might lose my job in 12 months	Neutral/not likely	0.84	0.58
	Likely	0.16	0.42
Region of Europe	Continental	0.4	0.32
	Nordic	0.14	0.10
	Mediterranean	0.33	0.46
	Liberal	0.13	0.12

Source: Data: EWCS 2015.