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Dualization and subjective employment insecurity: Explaining the subjective employment insecurity divide between permanent and temporary workers across 23 European countries

Abstract

Dualization theory posits that certain institutions cause dualization in the labour market, yet how institutions deepen the subjective insecurity divide between insiders and outsiders has not been examined. This paper examines this question using data from 23 European countries in 2008/9. Results show that the subjective employment insecurity divide between permanent and temporary workers varies significantly across different countries. Corporatist countries, with stronger unions, have larger subjective insecurity divides between permanent and temporary workers. However, this is because permanent workers feel more secure in these countries rather than because temporary workers are more exposed to feelings of insecurity.

Key words: Employment insecurity, Dualization, Institutions, Industrial Relations, Permanent contracts, Multi-level modelling

JEL Classification: J08, P13, Z16

Introduction

The past decade can be characterised by globalisation, increased competition, and the post-industrialisation of labour markets in Europe. This has had a major impact on the full-employment model of welfare states, with increased levels of unemployment and long-term unemployment (Nickell *et al.*, 2005), and an increase in atypical employment and job instability across countries (Auer and Cazes, 2000; Kalleberg, 2000, 2009). This rise in insecurity has only been exacerbated by the recent and on-going financial crisis, which started in 2008, and the series of austerity measures that followed. For some workers, this instability in their labour market position is not a temporary state experienced before moving onto a more stable position, but a persistent state that gives rise to a new social class, i.e., 'the precariat' (Standing, 2011). Indeed, research has shown that the growth of labour market vulnerability has not been evenly experienced. There has been a dualization of labour markets, with certain groups more exposed to insecurities, while others – the core workforce – have been protected (Rueda, 2005; Palier and Thelen, 2010). Labour market institutions, which once helped protect workers and their working conditions, are seen as one of the causes that have led to the increase in dualization. More specifically, it has been argued that dualization is likely to develop in corporatist countries with stronger unions and strict labour regulations (Palier and Thelen, 2010; Emmenegger *et al.*, 2012b).

Empirically, studies have used the higher prevalence of outsiders – i.e., the unemployed and those in atypical employment – and the limited movement of outsiders into insider positions as evidence of such dualization having occurred (e.g., Palier and Thelen, 2010; Eichhorst and Marx, 2011; Biegert, 2014). However, given the focus on such objective indicators of dualization, not much has been examined in the subjective division between the insiders and outsiders. Subjective feelings of insecurity are not solely determined by objective statuses (Klandermans *et al.*, 2010). In addition, studies have shown the importance of *subjective* insecurity for individual's well-being (for a review see, Sverke *et al.*, 2002; Cheng and Chan, 2008) and for the sustainability of the welfare state (for a review see, Chung and Mau, 2014) beyond and above objective statuses. If labour market dualization has truly occurred in countries with stronger unions and regulations, not only should there be a prevalence of outsiders in these market, but also should we be able to see a significant gap in the subjective insecurity between insiders and outsiders. Furthermore, literature suggests that we could expect this divide to be driven both by the relatively protected positions of insiders and by the increased vulnerability of outsiders.

In sum, this paper examines the role institutions play in explaining the cross-national variation in the subjective employment insecurity divide between insiders and outsiders, as defined as workers with permanent vs temporary contracts. This is done using a multilevel random slopes model and the 4th wave of the European Social Survey from 2008/9. The results show that although workers on temporary contracts generally feel less secure about their employment than those on permanent contracts, this varies significantly across countries. Corporatism and union power can be linked to larger divides in feelings of insecurity between the two groups of workers, confirming previous studies that measure dualization with objective indicators (e.g., Palier and Thelen, 2010). However, these divides are not due to increased exposure of temporary workers to vulnerabilities compared to other countries, but due to the relative protection permanent workers enjoy. In other words, corporatism and strong unions have been relatively successful in defending a (relatively large) proportion of workers from vulnerability, without increasing the insecurity perception of outsiders, compared to other countries where both permanent and temporary workers were exposed to vulnerable market conditions.

The next section will define the main concepts used in this paper and its theoretical underpinning – namely, subjective insecurity and dualization theories. Theories on the role institutions play in shaping labour market dualization outcomes will also be explored. The third section examines the data and methods used in the paper, and section four provides the findings. The paper ends with conclusions and discussions.

Definitions and Theoretical considerations

Subjective employment insecurity and role of institutions

There are several dimensions to subjective job insecurity (Ashford *et al.*, 1989; Näswall and De Witte, 2003; Anderson and Pontusson, 2007; Klandermans, et al., 2010; Berglund *et al.*, 2014). Cognitive job insecurity refers to workers' estimate of the probability that they will lose their job in the near future (the informational assessment), while affective job insecurity refers to the fear, worry or anxiety stemming from losing one's job (the emotional response). Labour market security concerns workers' perception of their probability of finding another job (with more or less equivalent characteristics) (Anderson and Pontusson, 2007: 214-215), and has been also coined as employment or employability security (Berglund, et al., 2014; Marx, 2014). It has been argued that cognitive job insecurity is somewhat problematic

because it cannot distinguish between workers who believe that they are likely to go through a (long) period of unemployment with those who do not (Chung and van Oorschot, 2011). Workers who believe that they might lose their current job, but will not go through a period unemployment because they will find a new job relatively quickly, will be categorised as insecure using the cognitive job insecurity definition. Thus, Chung and van Oorschot (2011) propose to use the concept 'cognitive employment insecurity', defined as the perceived likelihood of not having continuous employment in the future. This includes workers who believe that they are likely to lose their current job *followed by* a (long) period of unemployment (see also, Herzberg *et al.*, 1959; Greenhalgh and Rosenblatt, 1984).

While experiences of subjective insecurity may be closely related to a worker's objective insecurity status, it also entails the subjective and psychological reactions to this state. This reaction can be affected by personal, organisational and institutional contexts (Greenhalgh and Rosenblatt, 1984; Chung and Mau, 2014). In other words, subjective feelings of insecurity are not solely determined by objective statuses (Klandermans, et al., 2010) nor will the same objective insecurity status result in the same feelings of insecurity. Although there are issues with comparing subjective indicators of job quality across time and individuals (Osterman, 2013), increasingly studies have shown the importance of examining subjective rather than objective insecurity. This is because perceptions of insecurity can better explain the impact of insecurity on well-being, and political and policy preferences of workers compared to objective indicators of insecurity (Rueda, 2006; Dekker, 2010; Carr and Chung, 2014).

A wide range of studies have examined the antecedents and consequences of subjective job and employment insecurity (for a review see, Sverke, et al., 2002; Cheng and Chan, 2008; Chung and Mau, 2014). For many, the interest lies in how institutions help explain the cross-national variation in the levels of insecurity (e.g.Böckerman, 2004; Anderson and Pontusson, 2007; Erlinghagen, 2008; Clark and Postel-Vinay, 2009; Chung and van Oorschot, 2011; Mau *et al.*, 2012), since one of the main purposes of welfare state and labour market institutions is to help sustain a certain level of security for its citizens (Esping-Andersen, 1990). Most studies presume an equal impact of institutions across the labour market (Chung and Mau, 2014). However, given the different roles institutions have, institutions do not necessarily protect all workers equally. What is more, labour market segmentation and dualization theorists suggest that certain institutional arrangements are the cause of the

unequal division of labour market vulnerability across different groups of workers – i.e., between insiders and outsiders.

Labour market dualization and insiders and outsiders

The main idea behind dual labour market theory (e.g, Doeringer and Piore, 1975; Lindbeck and Snower, 1989) is that labour markets are divided into primary and secondary sectors, with limited chance for mobility between the two (see Davidsson and Naczyk, 2009). Workers in the primary sector, the 'insiders', enjoy high wages, good working conditions, prospects for career advancement and, most importantly, job stability. On the other hand, workers in the secondary market, the 'outsiders', have so called 'dead-end' jobs, with low-pay, bad working conditions, few career advancement prospects, and unstable jobs with frequent lay-offs (Doeringer and Piore, 1975:70-71; Rueda, 2014). One of the core ideas behind these theories is that insiders and outsiders do not compete in the same market. Insiders are protected by institutions, whereas outsiders will experience continuous instability and will not be able to overcome the barriers that stand between the two markets. Indeed, insiders can enjoy the security of the primary market because outsiders act as a buffer from the fluctuations in the business cycle (Rueda, 2005). Dualization theorist argue that certain institutional configurations make it easier for dual labour market patterns to emerge, and that certain institutions can thus be considered the drivers of dualized labour market outcomes (Rueda, 2005; Palier and Thelen, 2010; Emmenegger *et al.*, 2012a; Schwander and Häusermann, 2013). Accordingly, the degree of segmentation within the labour market, and the insider/outsider divide, varies across welfare regimes with different protection mechanisms (Schwander and Häusermann, 2013; Biegert, 2014).

It is important to note that there are various definitions of outsiders in the literature. Some of the earlier works on dual labour markets focus mostly on the unemployed, distinguishing between those in and out of employment (e.g., Lindbeck and Snower, 1986; Blanchard and Summers, 1987). More recently, one of the most frequently used definition of outsiders focuses on the relative vulnerability of workers, usually defined as those who are unemployed and in atypical employment – i.e., temporary and involuntary part-time contracts (e.g. ,Rueda, 2005, 2006; Emmenegger, 2009; Burgoon and Dekker, 2010; Eichhorst and Marx, 2011). For the purpose of this study, to be able to measure employment insecurity perceptions, I focus only on those currently in employment. This excludes the unemployed and students from the definition, as well as the analysis sample. I also exclude involuntary part-time work from the definition of outsiders, since part-time work is more relevant when

dealing with issues of income insecurity rather than employment insecurity. In sum, this paper will define insiders and outsiders as workers with and without permanent contracts respectively.

Permanent contracts and subjective insecurity

Workers on temporary contracts are in general more likely to feel subjectively insecure about their job or employment perspectives compared to those with permanent contracts (Näswall and De Witte, 2003; Clark and Postel-Vinay, 2009; Chung and van Oorschot, 2010; Klandermans, et al., 2010; see also, Chung and Mau, 2014; Ellonen and Nätti, 2015). This is because their contracts are of limited durations – i.e., they can be viewed as objectively insecure, and are more at risk of losing their jobs during reorganisation. Although the subjective insecurity status of an individual is closely related to their objective insecurity status, it entails the subjective and psychological reactions to this insecure status. For example, as organisations face economic difficulties – with concomitant redundancies, or even threats of closures – the perceived employment prospects of both permanent and temporary workers will deteriorate (Klandermans and van Vuuren, 1999; Klandermans, et al., 2010) increasing feelings of insecurity for both groups. As such, different workplace/sectoral contexts can result in variations in the 'outsiderness' of temporary workers, where in some cases the division between permanent and temporary workers are blurred (Håkansson and Isidorsson, 2012). Similarly the extent to which permanent workers and temporary workers are divided or united in their subjective insecurity will depend on the national contexts the workers are situated in. The next section examines this issue further.

Role of institutions in increasing insecurity gaps

The main institutions that are seen to cause divisions in the labour market include industrial relations/bargaining structures, employment protection legislation, and training skills accumulation processes – such as active labour market policies. All of these institutions increase the cost of hiring and firing insiders, which help secure their positions (Lindbeck and Snower, 1989). They are also the main institutions that are used to explain the cross-national variation in job and employment insecurity (Chung and Mau, 2014). They are addressed below.

Industrial relations and corporatism

Corporatist bargaining – that is when unions cooperate with employer bodies to influence policies – is facilitated when unions are responsible for a larger part of the labour market

through wider collective bargaining coverage and centralised bargaining structures. Corporatist bargaining has been linked to good economic performance outcomes (Calmfors and Driffill, 1988) through unions and employers working together to build competitive advantageous strategies (Katzenstein, 1985; Hall and Soskice, 2001). In these corporatist coordinated markets, social partners have also contributed to the diffusion, generalisation and institutionalisation of good working condition practices to the wider population (Palier and Thelen, 2010: 120), reducing inequalities between different groups of workers. However, in recent years, in the midst of liberalisation and external economic pressures, new forms of dualism have been seen to form especially in these corporatist countries. Many scholars (e.g., Ebbinghaus and Eichhorst, 2007; Palier and Thelen, 2010) argue that in corporatist countries, unions were successful in protecting the insiders from the pressures of labour shedding strategies through negotiations with employers. However, this was only possible because the unions allowed employers to increase flexibility on the secondary market, exposing outsiders to increased insecurity, in what can be called a "dual reform" (Ebbinghaus and Eichhorst, 2007; Palier and Thelen, 2010; Davidsson and Emmenegger, 2013). Emmenegger et al. (2012c:310) go on to argue that labour unions have consented to this dualization process, by agreeing to social and labour market policies that would negatively affect outsiders while protecting insiders. This echoes what has been argued by labour market segmentation scholars, for whom stronger unions and centralised collective bargaining hold central roles in protecting the labour market positions of insiders (Lindbeck and Snower, 1986; Saint-Paul, 2002). In sum, I expect subjective insecurity divides between permanent and temporary workers to be most prevalent in countries with strong unions and centralised collective bargaining structures. Dualization theory would assume that this enlarged division in corporatist countries will be driven both by the relative protected status of insiders and the relatively worse off positions of outsiders, compared to other countries.

Labour market institutions and institutional dualization

One way in which dualization has been increased in corporatist countries is through a "two-tiered reform" (Dolado and Jimeno, 2002) or "flexibility at the margin" approach (Toharia and Malo, 2000; Palier and Thelen, 2010; Davidsson and Emmenegger, 2013). This has been done through defending employment protection legislation (EPL) for regular workers while deregulating the use of flexible contracts. EPL for regular workers protects permanent workers from unfair dismissal, thus decreasing their likelihood of job loss, and is likely to decrease their subjective employment insecurity. However, because it only covers the rights

of those on permanent contracts, the impact it has on temporary contract holders will be limited (Boeri *et al.*, 2001:21; Rueda, 2005). Moreover, EPL for regular workers can increase insecurity for outsiders due to employers' reluctance to hire people on permanent contracts, which results in higher unemployment rates or longer unemployment durations, especially for disadvantaged workers (Nickell, 1997; Blanchard, 2006). Stringent EPL has also been linked to greater use of temporary contracts (Dolado and Jimeno, 2002; OECD, 2004; Chung, 2005), and thus is expected to increase the number of outsiders –i.e., unemployed, temporary workers. It can also be expected to impact the subjective insecurity of outsiders by making it more difficult to obtain permanent contracts or jobs in general. Since EPL for regular workers is likely to increase the feelings of security for permanent workers, it is also expected to further widen the gap in subjective insecurity between insiders and outsiders.

The main role of unemployment benefits (UB) or passive labour market policies (PLMP) is to protect individuals from income loss due to losing one's job. Generous benefits allow individuals to stay unemployed without severe consequence to their income security, which increases the bargaining power of workers to increase wage levels (Nickell, 1997; Blanchard, 2006). This protection also decreases one's fear of the repercussion of unemployment and can decrease the worry about losing a job (Anderson and Pontusson, 2007). A longer duration of PLMP has been criticised as making the unemployed pickier about finding new positions, thus prolonging the period of unemployment and consequently increasing unemployment rates (OECD, 1994; Nickell, 1997). However, this longer job search period also increases the chance that workers will find better fitting jobs (Marimon and Zilibotti, 1999) which would increase their likelihood of keeping their job. In addition, a longer job search facilitated through generous benefits can increase the perceived chance of finding a new job – increasing workers' perceived employability. Active labour market policies (ALMP) offset the negative impact of PLMP by increasing the skill set of the unemployed through training programmes, by providing assistance in job search activities, and through employment generation (Nickell, 1997; Blanchard, 2006). These policies can increase re-employment opportunities (Anderson and Pontusson, 2007; Chung and van Oorschot, 2011), thus increasing employment security perceptions.

Unlike EPL, ALMP and, somewhat, PLMP are expected to benefit outsiders more, due to the frequent unemployment and insecure labour market positions of outsiders (Boeri *et al.*, 2004; Rueda, 2007, 2014). However, in some cases the condition of receiving PLMP benefits is based on employment and contribution records. On the other hand, the objective of ALMP is

to provide stable employment for those without it and can even have a negative influence on the bargaining powers of insiders (Rueda, 2014:388). Based on this, Rueda (2014) argues that the institutional dualization – or what Emmenegger et al. (2012a) would consider institutional dualism - can be measured through EPL for regular workers divided by the ALMP efforts of a country. This index represents the degree to which permanent workers are protected through employment protection law, and the relative lack of protection provided for outsiders – unemployed and temporary employed – through labour market policies. The higher the score, the greater is the relative institutional protection for permanent workers. Thus, I expect that the subjective insecurity divide between insiders and outsiders will be largest in countries with high levels of institutional dualization.

Socio-economic contexts

The size of the outsider market – or the share of temporary workers – is also expected to shift the relative subjective insecurity position of permanent workers. Examining organisations across Spain and Belgium, de Cuyper et al. (2009) argue that the increase in temporary workers in an organisation may be perceived as a threat to permanent workers. This is because this increase may signal the bad economic situation of a company, may increase competition for stable jobs from temporary workers, and may increase work load/responsibility of the permanent employed, each factor negatively impacting permanent worker's perceived job security. Similarly, countries with larger number of temporary workers are expected to be those where the subjective employment insecurity gaps between temporary and permanent workers are smaller, due to the rise in the insecurity perceptions of permanent workers. Contrarily, countries with larger shares of temporary workers may be those where permanent workers are relatively better protected, and the subjective insecurity gap between the two groups are larger. This latter argument is based on studies which demonstrate that dualized labour markets – of which large secondary markets may be indicative (e.g., Palier and Thelen, 2010; Eichhorst and Marx, 2011) – provide structural barriers between the insiders and outsiders markets (Biegert, 2014), further protecting insiders. Lastly, economic and labour market conditions have been shown to be some of the most influential factors explaining the cross-national variation in job and employment insecurity (Erlinghagen, 2008; Chung and van Oorschot, 2011). Thus, the model controls for economic and labour market conditions of the country.

Data and Method

The data used for the analysis is the 4th wave of the European Social Survey (ESS). This data set covers 28 European countries, namely the EU27 – excluding Austria, Lithuania, Luxembourg, Italy, and Malta – plus Turkey, Ukraine, Russia, Norway, Israel, and Switzerland. The data was gathered during the early stages of the financial crisis, that is, late 2008 and early 2009. It is one of the few data sets that covers both a large number of countries and perceived *employment* insecurity of individuals, rather than perceived job insecurity. Secondly, this survey includes important background variables, such as human capital characteristics as well as individual's job and company level characteristics, which are not available in other similar data sets. Of all the countries included in the ESS, I exclude Croatia, Israel, Russia, Switzerland, Turkey and Ukraine from the analysis due to context data availability and problems of comparability. Thus, in this paper I include 23 countries: i.e., Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Slovenia, Slovakia and the United Kingdom. Since I am examining employment insecurity, individuals that are currently in paid/dependent employment are relevant. For this reason, I exclude respondents who are self-employed, unemployed, sick, retired and/or in education. I also exclude those who are above 65 years of age. This leaves a total of 17,023 cases when missing cases for the dependent and independent variables are taken into account.

The dependent and independent variables

The dependent variable of this paper is the perceived employment security of individuals. This is measured with the following question in the ESS: "How likely is it that during the next 12 months you will be unemployed and looking for work for at least four consecutive weeks?". The respondent can answer in a 4 point scale response as "not at all likely", "not very likely", "likely" or "very likely". The categories are recoded into a dichotomous variable, where those who have answered "likely" and "very likely" to this question are considered as being subjectively employment insecure.

The key independent variable used in this paper is whether or not the respondent has a permanent contract. This is measured through "Do/did you have a work contract of…unlimited duration, or, limited duration, or, do/did you have no contract?" Those who have answered "unlimited duration" are categorized as permanent contract holders, and thus insiders. Those with contracts of limited duration or no contracts are considered as temporary

workers, that is, outsiders. In addition to this variable, the commonly used individual level determinants explaining subjective employment and job insecurity are included (e.g., Anderson and Pontusson, 2007; Erlinghagen, 2008; Mau, et al., 2012; Ellonen and Nätti, 2015). This includes age, gender, education level, past-training experienced, past unemployment experience, existence of a disability, citizenship, family circumstances, occupation level, union membership, and size and sector of the company. For the theories behind each of these variables see Chung and van Oorschot (2010) and Chung and Mau (2014).

At the national level, industrial relations variables, employment protection legislation, labour market policy, and economic and labour market condition variables are included. To measure union bargaining power and structure, union density and collective bargaining coverage rate are used, both represented as a percentage of wage earners – which indicates bargaining power and to a certain degree, corporatism. To measure corporatism in a more direct manner, coordination of wage setting index is included, which examines the extent to which coordination exist between employers, unions and the state (1 indicating fragmented wage bargaining, and 5 indicating centralized bargaining by peak association(s))[1]. All industrial relations variables are from the ICTWSS data set and are for the year 2008 or closest year available.

Employment protection legislation is divided into that for regular workers – the strictness of regulation on firing workers on permanent contracts – and for temporary workers – the rigidity of regulations on hiring workers on temporary contracts. The data is from the OECD and for the year 2008. Labour market policy (LMP) expenditure data is used to measure the generosity of the LMP, divided into active labour market policy expenditure (ALMP) – including training, employment incentives, direct job creation etc. – and passive labour market policy expenditure (PLMP) – benefits given to the unemployed for income maintenance. All data is from Eurostat and for the year2008, and is expressed as a percentage of the GDP. To take into account the number of people needing these policies, I divide the indices with the unemployment rate of that year. Following Rueda (2014), institutional

[1] I have also tested bargaining level – 1 indicating individual level, 5 indicating national level – and routine involvement – routine involvement of unions and employers in government decisions on social and economic policy – but did not find any significant results (see appendix table 2).

dualization is measured through dividing the EPL for regular workers by the ALMP spending divided by the unemployment rate. Two indicators are used to indicate the size of the outsider market. First, the share of temporary employed as a percentage of the total dependent employed is used. Another is the share of temporary *and* unemployed as a percentage of the total active population. I include unemployment rates for 2008 as an indication of labour market conditions at the time of the survey, the GDP growth rate for 2008-2009 to indicate economic conditions, and change in unemployment rate from the 2nd quarter of 2008 to the 2nd quarter of 2009 to indicate labour market condition changes. All context variables have been centred and standardized for the models. See Appendix for more details.

Model

Two-level random slope multilevel logistic regression models are used for the analysis (see, Hox, 2002). Several models are examined. The first model examines the subjective employment insecurity divide found between permanent and temporary workers, with and without other individual level control variables. The second model tests whether the insecurity divide found between permanent and temporary workers varies across countries through a random slope model. The third model includes the context variables separately to see if they can account for the varying divides across countries. Given the complexity of the model, and the lack of level 2 country cases, including too many context variables per model can result in biased results (see, Stegmueller, 2013). Thus I restrict the number of context variables per model to two or a maximum three using a step-wise approach. I use the meqrlogit function of STATA 13.0 for all models.

Results

Employment insecurity gap between permanent and temporary workers

Figure 1 shows the employment insecurity levels of permanent and temporary workers across 23 countries, without having taken into account any individual level controls. Comparing permanent workers, workers in Nordic social democratic countries are the least likely to feel employment insecure, and workers in the new accession countries and Southern European countries are most likely. In almost all countries, permanent workers are on average more likely to feel secure about their employment compared to those on temporary contracts or no contracts. However, there are large variations across countries. In Cyprus there is no

difference between permanent and temporary workers (or a very slight difference favouring the latter), and in the Netherlands, Romania and Estonia the difference between the two groups is less than 10%. On the other hand, in Sweden, Spain, and France, the difference in likelihood of feeling employment insecurity for permanent and temporary workers is much larger, often being over 30%.

Figure1 here…

Through a multilevel model, the statistical significance of the subjective insecurity divide between temporary and permanent workers, as well as the cross-national variance of this divide is tested. The empty model (Model 0) partitions the variance in the average level of employment insecurity across countries to that of the country and the individual levels. Of the variance of workers' employment insecurity perception across the 23 countries in the sample, approximately 18% can be attributed to the country they live in. Model 1-1 examines the impact of having a permanent contract on workers' likelihood of feeling employment insecure. As expected, as an overall average, those on permanent contracts are less likely to feel insecure about their employment. However, this gap decreases somewhat when the model includes other individual level variables, as in Model 1-2. This is most likely due to the fact that those on permanent contracts are also likely to have higher education, higher occupational status or have other characteristics that are linked to lower levels of subjective insecurity. Examining some of the individual level variables explaining employment insecurity (Appendix Table 1), those with more human capital, i.e., individuals with higher education, in higher occupational statuses, and those who have received training in the past year are less likely to feel insecure about their employment. Workers over 55, men, and union members, the typical profile of insiders of the labour market, are also less likely to feel insecure. On the other hand, migrant workers, workers with a disability, and those who have experienced unemployment in the past are more likely to feel insecure. There are also sectoral variances; workers in manufacturing and construction sectors feel most insecure, while workers in public administration, and mining and quarrying sectors feel most secure. Lastly, I examine whether the cross-national variance in the insecurity divide between permanent and temporary workers is significant through a random slopes model (Model 1-3). As expected, the result shows that although workers with permanent contracts are usually less likely to feel insecure about their employment compared to those without one, this divide varies across countries significantly (variance: 0.182, $p<0.05$, with a significant reduction of log likelihood from model 1-2 to model 1-3). The employment insecurity gap between

permanent and temporary workers is significantly larger in Sweden, Finland and to a certain extent Spain, compared to what is found for the European average, while it is significantly smaller in Cyprus, Estonia and Latvia and to a lesser extent Slovenia. In these latter four countries, as well as in Hungary and Romania, the subjective employment insecurity gap between permanent and temporary workers is insignificant once other individual level characteristics are taken into account (See appendix figure 1).

Table 1 here…

Explaining the cross-national variance

What can explain the cross-national variance in the subjective employment insecurity divide between permanent and temporary workers? As Table 2 shows, Countries with generous active and passive labour market policies, with strong unions, and where there are centralised, more coordinated bargaining structures, are those where larger insecurity divides are found between permanent and temporary workers. Countries with high levels of institutional dualization, on the contrary, are those where the subjective insecurity divide between permanent and temporary workers is significantly smaller. I do not find a significant relationship between the size of the outsider market and the subjective insecurity divide between insiders and outsiders. Thus, the countries where dualization is considered to be prevalent using objective (static) measures – i.e., where there are larger shares of temporary workers or larger shares of those unemployed or in temporary contracts – are not the ones where subjective labour market dualization can be observed. Market conditions and the severity of the financial crisis – measured here through the unemployment rate for 2008, real GDP growth rate for 2009, and the unemployment rate change for 2nd quarters 2008-2009 – do seem to influence the overall level of subjective employment insecurity of workers. However, the economic and labour market conditions and cycles seem to have had an equal impact across the two groups of workers, since no significant relationship is found with these variables and the gap in insecurity between permanent and temporary workers.

Table 2 here…

To further test the robustness of the indices, the relationship between the institutions and market conditions are considered. Bargaining structure variables are highly correlated to one another, and to the labour market policy and institutional dualization indices. Thus, some of

the significant impact of these variables could be driven by other highly correlated factors. What is more, it is important to test whether the impact of institutions remain significant when controlling for market conditions. To do this, context variables are included in the model two at a time, especially focusing on the ones that were shown to be significant in our previous models (Appendix Table 3). Collective bargaining coverage, union density, and dualization indices remain significant even when other variables are included in the model. These three variables also remain significant when controlling for various labour market and economic conditions or the size of the outsider market. Coordination index and labour market policy generosity indicators, on the other hand, become insignificant when combined with other institution or market condition variables.

Best fit models are found by comparing the reduction in the variance of the random slope (the impact of permanent contracts across countries) (Table 3). For the 23 country analysis, the model with union density and unemployment rate of 2008 (model 3-1) explains 72% of the cross-national variance in the subjective employment insecurity divide between permanent and temporary workers. When collective bargaining coverage is included in the model (model 3-2), the explained variances rises to 83%. Since including institutional dualization in the model reduces the number of countries in the analysis to 19, we also find the best fit model for this sample separately. The model including institutional dualization and union density (model 3-3) explains 89% of the cross-national variation, and when unemployment rate of 2008 is included in the model (model 3-4), the explained variance rises to 100%.

Table 3 here…

Summing up, the most important factors driving the subjective employment insecurity divide between permanent and temporary workers are union density and institutional dualization, and to a lesser extent collective bargaining coverage and unemployment rate. In countries with stronger unions with a more centralised bargaining system – and most likely where corporatism is prevalent – when faced with bad labour market conditions, insiders felt protected to a large degree while outsiders felt relatively exposed. This confirms the thesis put forward by Palier and Thelen (2010) and others (Emmenegger, et al., 2012c; Davidsson and Emmenegger, 2013) that coordinated market economies – with traditionally centralised bargaining and stronger unions – were successful in protecting the insiders from the threats of labour shedding, while outsiders were left exposed to the pressures. However, unlike what previous studies have posited, the protection of insiders was not necessarily done at the cost

of outsiders. In other words, temporary workers in countries with stronger centralised unions do not feel more insecure about their employment compared to other countries. Rather, the divide is due to permanent workers feeling more secure in these countries (see Figure 2). The evidence for this can be found when modelling temporary workers separately: union density and collective bargaining coverage is not significant in explaining the cross-national variance in the subjective employment insecurity for temporary workers, especially when the impact of the financial crisis is controlled for. However, both indices significantly explain the cross-national variation in employment insecurity of permanent workers across countries (Table 3 & Figure 2).

The significance of union power and collective bargaining structures in explaining employment insecurity divides remains even when employment protection legislation and labour market policies are accounted for (see Appendix Table 3). This indicates that the influence of unions goes beyond the changes made through labour market institutions. In addition, the influence of union power and bargaining structures still holds even when market conditions are controlled for. Indeed, only when union strength (and institutional dualization) is controlled for, do labour market conditions explain the subjective employment insecurity divide between permanent and temporary workers, the divide becoming more pronounced when labour market conditions are bad.

I also find that in countries with high levels of institutional dualization – as operationalised by Rueda (2014) – the divide in the feelings of insecurity between insiders and outsiders is smaller. Examining this relationship further, I find that while institutional dualization significantly increases the level of employment insecurity for permanent workers, it does not have an impact on temporary workers (Figure 2 & Table 4). That is, when employment protection is stringent, yet not much effort is put in to generating employment and enhancing employability of the unemployed, this makes permanent workers feel more insecure about their employment while temporary workers feel insecure regardless. Again this relationship still holds when market conditions and other institutional factors are controlled for (Appendix table 3). This goes against the assumption made by Rueda where high levels of institutional dualization should be linked with high levels of dualized market outcomes.

Table 4 & Figure 2 here…

Conclusion and Discussion

There has been a rise of insecurity across Europe due to new employment risks, including increased flexibility in labour markets, globalisation and post-industrialisation. Many argue that this increase in insecurity has not been equally distributed across different segments of the labour market, the outsiders being more exposed than the insiders. Dualization scholars further posit that these developments in dualized labour market outcomes are more prone to develop in certain countries and institutional settings – namely the corporatist countries with strong unions and regulations (Palier and Thelen, 2010; Emmenegger, et al., 2012c; Davidsson and Emmenegger, 2013).

The analysis results, using data from 23 European countries in 2008/9, show that although, on average, permanent workers feel more secure about their employment compared to temporary workers, the subjective employment insecurity divide between the two varies significantly across different countries. Similar to what was found by Palier and Thelen (2010), and others (Emmenegger, et al., 2012c ; Davidsson and Emmenegger, 2013), I find evidence to show that corporatist countries with stronger centralised unions are the ones where larger differences in subjective employment insecurity can be found between permanent and temporary workers. However, and somewhat contrary to the previous dualization research, the increased divide in these countries is *not* at the cost of outsiders. In other words, temporary workers do not necessarily feel more vulnerable in these countries compared to others. Rather, the divide is driven by the fact that in these countries permanent workers were protected from feelings of insecurity. In other countries, without such bargaining structures or unions, *both* permanent and temporary workers were exposed to feelings of insecurity. Although the divide between the two groups may be smaller in the other non-corporatist countries, the levels of perceived insecurity are high for both types of workers, and on average higher than that of the corporatist countries with stronger unions. This leads us to re-evaluate labour market dualization, and more importantly, the role unions and corporatism play in the protection of workers. Although an increased divide between workers can have negative implications for solidarity, and can lead to political cleavages (Rueda, 2005, 2006), the dualized countries were at least able to protect a (large) portion of their workforce from market vulnerabilities compared to other countries. There is also no clear empirical evidence to show that this has been done by either reducing the size of the core market – i.e., neither collective bargaining coverage nor union density is significantly correlated to the number of outsiders in the labour market (unemployed + temporary workers) (Appendix Table 4) – nor

by exposing outsiders to increased insecurity; i.e., protecting the insider segment of the workforce did not provoke a stronger feeling of insecurity amongst the outsiders. Hence, it is worthwhile reassessing the role of unions, highlighting the positive role they played in the protection of workers. Rather than focusing on the fact that strong unions in corporatist countries consented to the increase in dualization (Emmenegger, et al., 2012b) which emphasizes the deterioration of working conditions of outsiders, we should focus on the important role unions had in protecting a large proportion of workers from labour market vulnerability, not observed in non-corporatist countries where unions were weak.

Institutional dualization – as operationalised by Rueda (2014) – can also explain why there are larger subjective insecurity divides between workers with and without permanent contracts. However, contrary to what was expected, countries where there are higher levels of institutional dualization – that is, where it is hard to fire permanent workers while not much is done for employment/employability generation for the unemployed – are those where the divides in subjective insecurity are the smallest. This is driven by the fact that permanent workers feel more insecure in these countries, while temporary workers feel as insecure as in other countries. This indicates that even when protected by stringent employment protection laws, even those on permanent contracts are prone to feel more insecure about their unemployment and reemployment prospects when there is insufficient support available for the unemployed. This is because EPL does not help in protecting workers – either permanent or temporary – from feelings of insecurity. On the other hand, countries with high levels of ALMP and PLMP are those where feelings of insecurity are low for both permanent *and* temporary workers. Given the implications subjective vulnerability has on policy support and political preferences (Burgoon and Dekker, 2010; Marx, 2014; Paskov and Koster, 2014), protecting EPL at the cost of developing generous labour market policies may not be politically fruitful as assumed. Another point to raise from this result is the discrepancy found between institutional dualization and dualized market outcomes. This shows that dualization processes, outputs and market outcomes do not always mirror one another and should not be assumed to do so (see also, Chung, 2012).

There are several limitations to this paper. Firstly, I only focus on contract status to distinguish between insiders and outsiders, which is just one of many types of definitions that can be used to measure labour market divisions. Further, many studies have shown that contract status may not be the best way to measure dualization processes in non-corporatist countries (Yoon and Chung, 2015). This mean that results may change when other definitions

of outsiders are examined, a point that should be explored in future studies. Secondly, there are limitations in some of the variables used here to measure complex concepts. For example, we assume corporatism to take place in countries with high union density and collective bargaining coverage, yet were not able to measure corporatism directly. Further, there may be issues with the comparability of some institutional variables – such as union density – due to the different ways in which these variables are measured across countries. This studies is not able to address this point directly, yet is another area future studies should be mindful about. Finally, this paper has focused on the different national contexts in which the subjective divide between permanent and temporary workers vary. However, this divide may also vary depending on the occupational and sectoral contexts (Lautsch, 2002; Klandermans, et al., 2010; Håkansson and Isidorsson, 2012). This study was not able to examine this issue in much detail, and future studies should examine the organisational and sectoral contexts in which such blurring may occur.

Such caveats notwithstanding, this paper provides important points for future studies that aim to empirically address dualization across different welfare states. The results demonstrate that there are discrepancies between objectively measured dualized market outcomes – as measured through the size of unemployed/temporary employed – and subjectively measured dualized market outcome – measured through employment insecurity gaps between insiders and outsiders. Although workers on permanent contracts generally tend to feel more secure about their employment, the extent to which they feel (more) secure varies largely across countries: in some countries there is more of a blurring between the two groups of workers. The intensity of the 'insiderness' of permanent workers should thus be complimented with the use of subjective measures, such as subjective employment insecurity as used here. It is the subjective perception of individuals that have larger implications for well-being and policy/political preferences (e.g., Burgoon and Dekker, 2010; Dekker, 2010; Carr and Chung, 2014; Marx, 2014; Paskov and Koster, 2014). Thus, our focus needs to move beyond assumptions as to the utility of objective indicators to consider more direct subjective aspects of insecurity.

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Tables and Figures

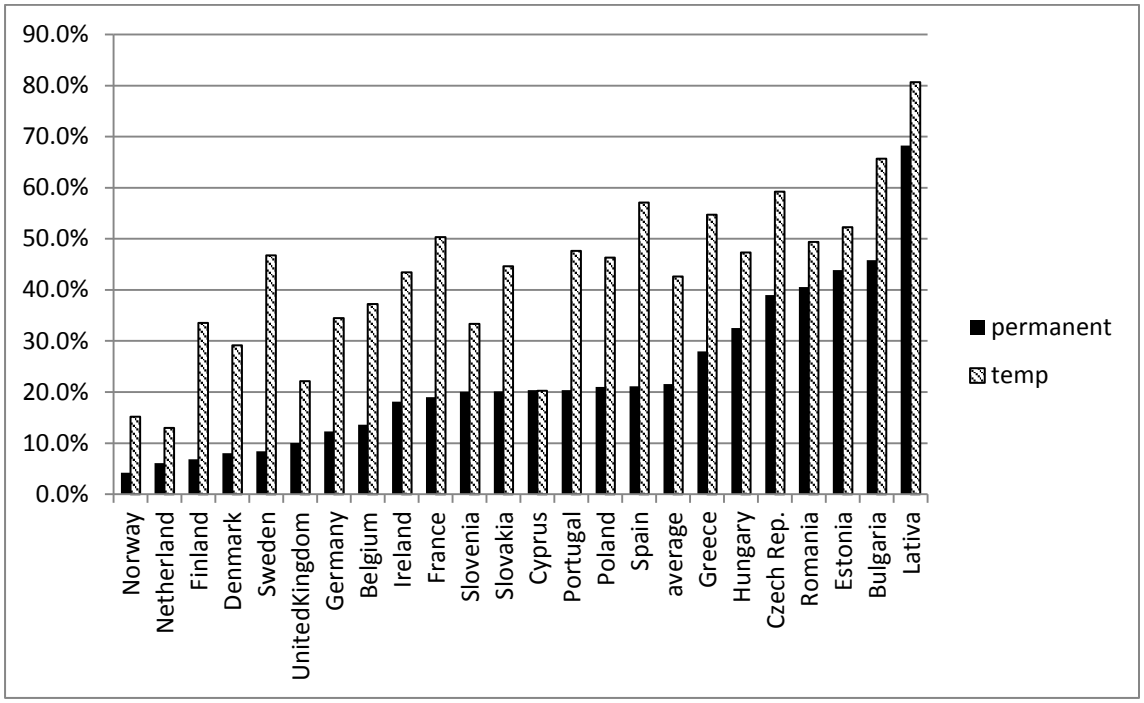


Figure1. Subjective employment insecurity gap between non-permanent and permanent workers across 23 European countries for 2008/9

data: ESS 4th wave. Design and population weighted. Sorted by the employment insecurity likelihood of permanent workers

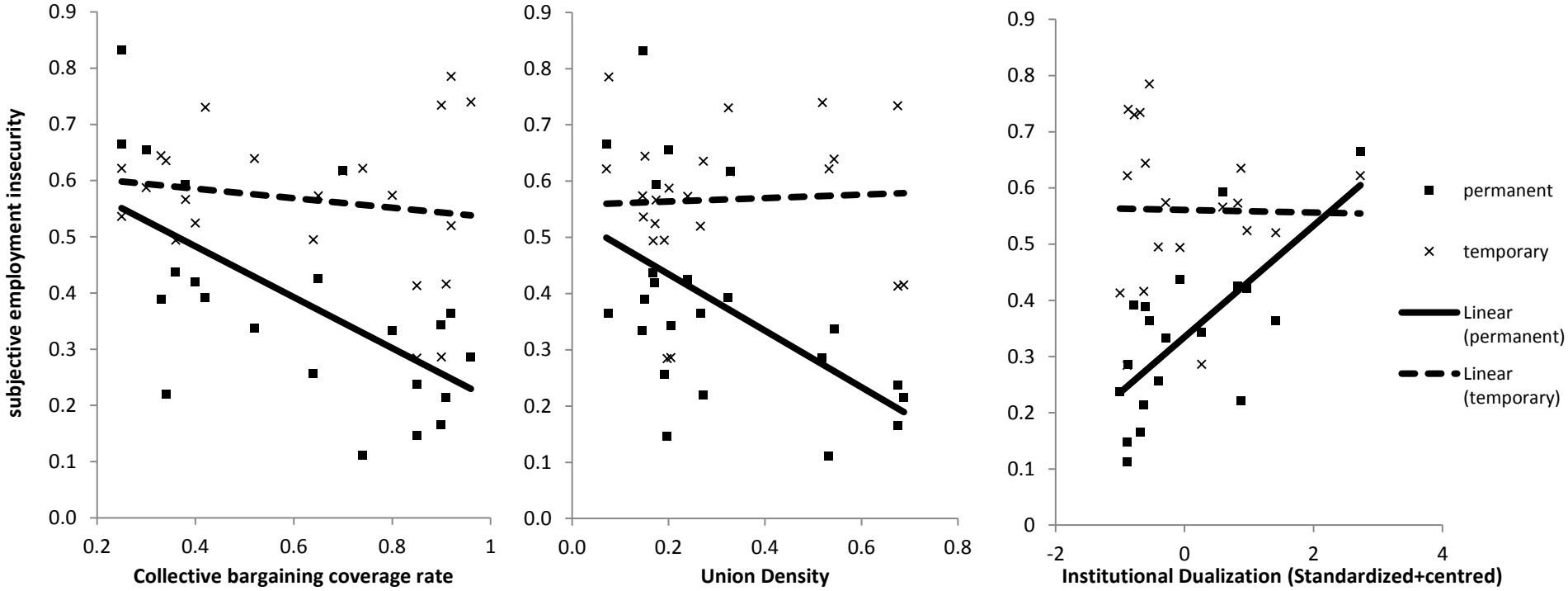


Figure2. Subjective employment insecurity divide between permanent and temporary workers across different institutional contexts across 23 / 19 countries(for the graph with institutional dualization), in 2008/2009

Note: Subjective employment insecurity probability controls for individual and workplace characteristics

Table 1. Explaining subjective employment insecurity of individuals across 23 European countries with contract type

	Model0		Model1-1		Model 1-2		Model 1-3	
			+permanent		+ind. level variables		+random slope	
	B	s.e.	B	s.e.	B	s.e.	B	s.e.
Permanent contract			-1.169***	0.046	-0.912***	0.051	-0.891***	0.104
Constant	-1.129***	0.179	-0.260	0.188	0.366	0.222	0.353	0.203
Variance country level	0.726***	0.217	0.780***	0.233	0.667***	0.201	0.468***	0.151
Variance individual level	$\pi^2/3$							
Variance permanent							0.182*	0.072
Explained variance country level	ICC=18.1%		-7.4%		8.2%		35.6%	
Loglikelihood	-8665.157		-8337.960		-7711.311		-7692.893	

N level 1 (individuals) = 17032 , N level 2 (countries) = 23

a: Model 2 controls for variables such as age, sex, education, training experience in the last 12 months, unemployment experience in the past five years, existence of a disability, citizenship, whether or not the individual has a partner in paid work, a child or children in the household, occupation, currently belonging to a trade union, and size and sector (NACE 13 + public/private) of the company the individual is employed in. Full models in Appendix.

*** = p <0.001, ** = p < 0.01, * = p < 0.05

Table 2. The impact of context factors in explaining the cross-national variance in the level of subjective employment insecurity and the divide between permanent and non-permanent workers

	Employment protection		Labour market policies		Institutional dualization	Bargaining structures			Objective labour market dualization outcome		Market conditions		
Models	2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12	2-13
	EPL regular	EPL temporary	ALMP /unemp	PLMP /unemp	EPLreg/ ALMP	Collective bargaining coverage	Union density%	Coordination	% temp workers '08	Outsider share %	Unemploy. rate 2008	GDP growth '08- '09	Unemp. Ch. '08- '09(q2)
Main effect (Macro factor)	0.073	0.127	-0.334*	-0.353**	0.185$^{€}$	-0.289*	-0.234$^{€}$	-0.250$^{€}$	-0.243	0.067	0.322*	-0.378**	0.398**
Macro factor*permanent	**0.011**	**0.086**	**-0.231***	**-0.194***	**0.275*****	**-0.295****	**-0.273****	**-0.242****	**-0.143**	**-0.018**	**- 0.083**	**-0.109**	**0.073**
Permanent	-1.004***	-1.025***	-0.893***	-0.888***	-1.013***	-0.879***	-0.895***	-0.883***	-0.883***	-0.892***	- 0.882***	-0.885***	-0.884***
Variance country level	0.269**	0.260**	0.329**	0.324**	0.203***	0.370**	0.403**	0.390**	0.401**	0.463***	0.374**	0.339**	0.328**
Variance permanent	0.165*	0.158*	0.121*	0.136**	0.069	0.088*	0.100*	0.119*	0.157**	0.181**	0.181*	0.166*	0.176**
Exp. Var. level 2 (from model0)	49.0%	50.7%	54.7%	55.3%	61.4%	49.0%	44.5%	46.3%	44.8%	36.2%	48.5%	53.3%	54.9%
Exp. Var. level 2 (from model3)	2.1%	5.2%	29.7%	30.6%	25.9%	20.8%	13.8%	16.6%	14.2%	1.0%	20.1%	27.5%	29.9%
Exp. Var. random slope: permanent (from model 3)	0.1%	4.2%	33.5%	25.3%	58.4%	51.6%	44.9%	34.6%	14.0%	0.4%	0.8%	8.9%	3.6%
Log likelihood	-6362.1315	-6361.6105	-7685.7088$^{\wedge}$	-7686.4724$^{\wedge}$	-6356.0383$^{\wedge}$	-7684.8766$^{\wedge}$	-7686.2882$^{\wedge}$	-7687.2597	-7689.6539	-7692.767	-7689.5665	-7688.3617	-7688.351
Level 2 N	19		23		19	23							
Level 1 N	14706		17032		14706	17032							

Each column represents a separate model, where one context variable is included as a main effect on employment insecurity, as well as an interaction term with permanent contract. All models include the individual level variables as in model 3. All level 2 variables are centred and standardized.

For models including EPL and institutional dualization, different baseline models were calculated based on 19 country cases - excluding Bulgaria, Cyprus, Latvia and Romania.

*** = p <0.001, ** = p < 0.01, * = p < 0.05, $^{€}$ = p < 0.10, ^ denotes the models where the log likelihood reduction from nested model (model 1-3) is significant at the 0.05 level

Table 3. The impact of context factors in explaining the cross-national variance in the level of subjective employment insecurity and the divide between permanent and non-permanent workers

	Model 3-1	Model 3-2	Model 3-3	Model 3-4
Collective bargaining cov.		- 0.299$^{€}$		
Collective bar. cov.*perm		- 0.149$^{€}$		
Union density	- 0.105	0.053	- 0.040	0.114
Union density * perm	- 0.387***	- 0.304***	- 0.260***	- 0.363***
Institutional Dualization			0.161	0.229$^{€}$
Institutional Dual. *perm			0.161*	0.134*
Unemployment rate 2008	0.286$^{€}$	0.330*		0.304**
Unemploy.rate*perm	- 0.249***	- 0.213**		- 0.198***
Permanent	-0.877***	-0.875***	-1.025***	-0.982***
Variance country level	0.392**	0.318**	0.190**	0.164**
Variance permanent	0.051	0.031	0.018	0.000
Exp. Var. level 2(from model0)	46.1%	56.3%	64.0%	68.8%
Exp. Var. level 2(from model3)	16.2%	32.1%	30.9%	40.1%
Exp. Var. random slope: permanent (from model 3)	71.9%	82.9%	89.1%	100.0%
Log likelihood	-7681.5848	-7677.2699	-6350.0758$^{\wedge}$	-6343.1007$^{\wedge}$
Level 2 N	23		19	
Level 1 N	17032		14706	

All models include the individual level variables as in model 3. All level 2 variables are centred and standardized. For models including EPL and institutional dualization, different baseline models were calculated based on 19 country cases - excluding Bulgaria, Cyprus, Latvia and Romania.

*** = p <0.001, ** = p < 0.01, * = p < 0.05, $^{€}$ = p < 0.10, ^ denotes the models where the log likelihood reduction from nested model (model 2-5, model 3-3) is significant at the 0.05 level

Table 4. Impact of institutions on the subjective employment insecurity of permanent and temporary workers modelled separately

Macro variable	Only with permanent workers		Only with temporary workers	
	Macro variable alone	Controlling for GDP growth 09	Macro variable alone	Controlling for GDP growth 09
ALMP	-0.576***	-0.488***	-0.326*	-0.259*
PLMP	-0.556***	-0.485***	-0.350**	-0.303**
Institutional dualization	0.509***	0.592***	0.199	0.199
Union density	-0.512***	-0.482***	-0.213	-0.197
Collective bar. cov.	-0.607***	-0.510***	-0.288*	-0.213
Coordination	-0.509**		-0.244$^{€}$	
Unemployment rate	0.235		0.295*	
GDP growth rate	-0.494**		-0.345*	
Unemployment change	0.480**		0.377**	

Each cell on the 2nd – 5th columns represents a separate model, where the context variable is included in the model with the sample of permanent or temporary workers separately (2nd, 4th columns), and where it is included having controlled for GDP growth rate of 2009 as an indicator of the severity of the crisis (3rd, 5th columns).

All models include the individual level variables as in model 3. All level 2 variables are centred and standardized.

*** = p <0.001, ** = p < 0.01, * = p < 0.05, $^{€}$ = p < 0.010

[Appendix for Dualization and vulnerabilities of workers]

Appendix 1: Independent variables

Individual level characteristics

- ***Demographic & Human capital variables***

- Age – 4 categories- 15-24, 25-34, 35-44, 45-54, 55-64 (reference: 34-44)
- Sex – female dummy (reference: male)
- Education – lower secondary or below, upper secondary, tertiary or above (reference: upper secondary)
- Training received in the past year
- Previous unemployment experience – had an unemployment experience of 3month or more in the past five years
- Disability – daily life hampered by illness or disability
- Citizenship-citizen of the country of residence

- ***Family structure***

- Having a partner in paid work
- Having dependent child(ren)

- Employment & workplace characteristics

- Occupation level – Legislators, senior officers and managers, Professionals, Technicians and associate professionals, Clerks, Service worker and shop and market sales worker, Skilled agricultural and fishery workers, Crafts and Related Trade workers, Plant and machine operators and assemblers, Elementary occupations and Armed forces (reference: Service worker and shop and market sales worker)
- Permanent contract (reference: temporary or no contract)
- Currently a union member
- Size of company - under 10, 10 to 24, 25 to 99, 100 to 499, 500or more (reference under 10)
- Sector – NACE13 category – Agriculture forestry and fishing, Mining and quarrying, Manufacturing, Electricity gas and water, Construction, Retail and repair, Hotel and restaurants, Transport storage and communication, Financial intermediation, Real estate renting and business activities, Public administration and defence, Education, health and social work, and Other services (reference Manufacturing)

National level variables

- ***EPL(All data from OECD:*** http://www.oecd.org/employment/emp/oecdindicatorsofemploymentprotection.htm)

- EPL overall: Employment protection overall, including Individual dismissal of workers with regular contracts, Additional costs for collective dismissals, and Regulation of temporary contracts
- EPL regular workers: Individual dismissal of workers with regular contracts, incorporating (i) procedural inconveniences that employers face when starting the dismissal process; (ii) notice periods and severance pay; and (iii) difficulty of dismissal, as determined by the circumstances in which it is possible to dismiss workers, as well as the repercussions for the employer if a dismissal is found to be unfair.
- EPL index for temporary workers: including regulation of fixed-term and temporary work agency contracts with respect to the types of work for which these contracts are

allowed and their duration, as well as regulation governing the establishment and operation of temporary work agencies and requirements for agency workers to receive the same pay and/or conditions as equivalent workers in the user firm, which can increase the cost of using temporary agency workers relative to hiring workers on permanent contracts.

- ***Labour market policies*** (All data from EUROSTAT: http://ec.europa.eu/eurostat and for 2008)

- National expenditure on labour market policy as a percentage of GDP divided by the unemployment rate
- National expenditure on passive labour market policy as a percentage of GDP divided by the unemployment rate
- National expenditure on active labour market policy as a percentage of GDP divided by the unemployment rate

- ***Institutional Dualization*** (based on Rueda 2014)

- EPL regular workers 2008 ÷ (ALMP spending as % of GDP 2008/unemployment rate 2008)

- ***Bargaining power/structure*** (All data from ICTWSS: http://www.uva-aias.net/208 for 2008 or latest)

- Collective bargaining coverage: employees covered by collective (wage) bargaining agreements as a proportion of all wage and salary earners in employment with the right to bargaining, expressed as percentage
- Union density : net union membership as a proportion of wage and salary earners in employment
- Bargaining level : The predominant level(s) at which wage bargaining takes place (5 = central or cross-industry level; 4 = intermediate or alternating between central and industry bargaining; 3 = sector or industry level; 2 = intermediate or alternating between sector and company bargaining; 1 = local or company level)
- Coordination of wage-setting : (5 = a) centralized bargaining by peak association(s), with or without government involvement, and/or government imposition of wage schedule/freeze, with peace obligation (example: Sweden prior to 1980); b) informal centralisation of industry-level bargaining by a powerful and monopolistic union confederation (example Austria prior to 1983;c) extensive, regularized pattern setting and highly synchronized bargaining coupled with coordination of bargaining by influential large firms (Japan prior to 1998). 4 = a) centralized bargaining by peak associations with or without government involvement, and/or government imposition of wage schedule/freeze, without peace obligation (example: Ireland 1987-2009); b) informal (intra-associational and/or inter-associational) centralisation of industry and firm level bargaining by peak associations (both sides) (example Spain 2002-8; c) extensive, regularized pattern setting coupled with high degree of union concentration (example: Germany most years). 3 = a) informal (intra-associational and/or inter-associational) centralisation of industry and firm level bargaining by peak associations (one side, or only some unions) with or without government participation (Italy since 2000); b) industry-level bargaining with irregular and uncertain pattern setting and only moderate union concentration (example: Denmark 1981-86); c) government arbitration or intervention (example: U.K 1966-8, 1972-4) 2 = mixed industry and firm-level bargaining, with no or little pattern bargaining and relatively weak elements of government coordination through the setting of basic pay rates

(statutory minimum wage) or wage indexation (example France most years).1 = fragmented wage bargaining, confined largely to individual firms or plants (example U.K. since 1980).

- Routine Involvement: routine involvement of unions and employers in government decisions on social and economic policy.(2 = full concertation, regular and frequent involvement; 1 = partial concertation, irregular and infrequent involvement; 0 = no concertation, involvement is rare or absent)

- Economic conditions (all data from EUROSTAT)
- Share of temporary workers as a proportion of the total employed for 2008
- Share of temporary workers and unemployed as a proportion of total active population 2008
- Unemployment rate for 2008
- GDP growth rate 2008-2009
- Unemployment change 2nd quarter 2008 – 2nd quarter 2009

Appendix Table 1. Explaining employment insecurity of individuals across 23 European countries

	Model 2		Model 3	
	+ind. level variables		+random slope	
	B	s.e.	B	s.e.
Permanent contract	-0.912***	0.051	-0.891***	0.104
Age (Reference: 35-44)				
15-24	-0.032	0.083	-0.078	0.084
25-34	-0.022	0.058	-0.029	0.058
45-54	-0.062	0.057	-0.062	0.057
55-64	-0.357***	0.072	-0.344***	0.072
Female	0.184***	0.047	0.175***	0.047
Education (Reference: Upper- and post-secondary)				
Primary, low secondary	0.142*	0.059	0.154**	0.059
Tertiary education	-0.198***	0.059	-0.202***	0.059
Training past 12 months	-0.181***	0.048	-0.167***	0.048
Unemploy. Exp. Past 5 years	0.950***	0.054	0.947***	0.054
With a disability	0.395***	0.059	0.393***	0.059
Citizen	-0.486***	0.091	-0.475***	0.092
Partner in paid work	-0.040	0.044	-0.037	0.044
Have a child	-0.031	0.046	-0.031	0.047
Occupational level(Ref: Service and sales workers)				
Legislators, senior officers and managers	-0.481***	0.110	-0.478***	0.110
Professionals	-0.461***	0.094	-0.464***	0.094
Technicians and associate professionals	-0.069	0.079	-0.066	0.079
Clerks	-0.048	0.085	-0.047	0.085
Crafts and Related Trade workers	0.148	0.090	0.147	0.090
Plant and machine operators and assemblers	0.315***	0.095	0.310***	0.096
Elementary occupations	0.393***	0.085	0.379***	0.085
Skilled agricultural /fishery workers and Armed forces	-0.103	0.199	-0.101	0.199
Public company	-0.134	0.073	-0.142	0.073
Currently a union member	-0.205***	0.058	-0.189***	0.058
Company size (Reference – less than 10)				
10 to 24	-0.021	0.058	-0.028	0.058
25 to 99	-0.004	0.058	-0.014	0.058
100 to 499	-0.016	0.069	-0.025	0.069
500or more	-0.137	0.084	-0.151	0.085
Sector (Reference: Manufacturing)				
Agriculture forestry and fishing	-0.310*	0.151	-0.319*	0.151
Mining and quarrying	-0.808**	0.301	-0.813**	0.300
Electricity gas and water	-0.545**	0.196	-0.559**	0.197
Construction	-0.090	0.086	-0.088	0.086
Retail and repair	-0.255**	0.080	-0.254**	0.080
Hotel and restaurants	-0.339**	0.112	-0.342**	0.112
Transport storage and communication	-0.280***	0.091	-0.293***	0.092

Financial intermediation	-0.312*	0.134	-0.312*	0.134
Real estate renting and business activities	-0.271**	0.090	-0.268**	0.090
Public administration and defence	-0.772***	0.114	-0.772***	0.114
Education	-0.481***	0.114	-0.496***	0.114
Health and social work	-0.542***	0.100	-0.557***	0.100
Other services	-0.474***	0.102	-0.491***	0.102
Constant	0.366	0.222	0.353	0.203
Variance country level	0.667***	0.201	0.468***	0.151
Variance individual level				
Variance permanent			0.182*	0.072
Explained variance country level	8.2%		35.6%	

N level 1 (individuals) = 17032 , N level 2 (countries) = 23

*** = p <0.001, ** = p < 0.01, * = p < 0.05

Appendix Table 2. The impact of Bargaining structures in explaining the cross-national variance in the level of employment insecurity and the gap between permanent and non-permanent workers

	Bargaining structure				
	Collective bargaining coverage	Union member%	Bargaining level	Coordination	Routine Involvement
Main effect (Macro factor)	-0.289*	-0.234€	-0.162	-0.250€	-0.266€
Macro factor*permanent	-0.295**	-0.273**	-0.135€	-0.242**	0.030
Permanent	-0.879***	-0.895***	-0.950***	-0.883***	-0.891***
Variance country level	0.370**	0.403**	0.415**	0.390**	0.403**
Variance permanent	0.088*	0.100*	0.148*	0.119*	0.183*
Explained variance level 2 (from model0)	49.0%	44.5%	42.9%	46.3%	44.5%
Explained variance level 2 (from model2)	20.8%	13.8%	11.3%	16.6%	13.9%
Explained variance random slope: permanent	51.6%	44.9%	18.7%	34.6%	-0.2%
Level 2 N	23				
Level 1 N	17032				

Each column represents a separate model, where one context variable is included as a main effect on employment insecurity, as well as an interaction term with permanent contract. All models include the individual level variables as in model 3. All level 2 variables are centred and standardized.

*** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.010

Appendix Table 3. The impact of institutions in explaining the cross-national variance in the level of subjective employment insecurity and the gap between permanent and non-permanent workers (included in combination)

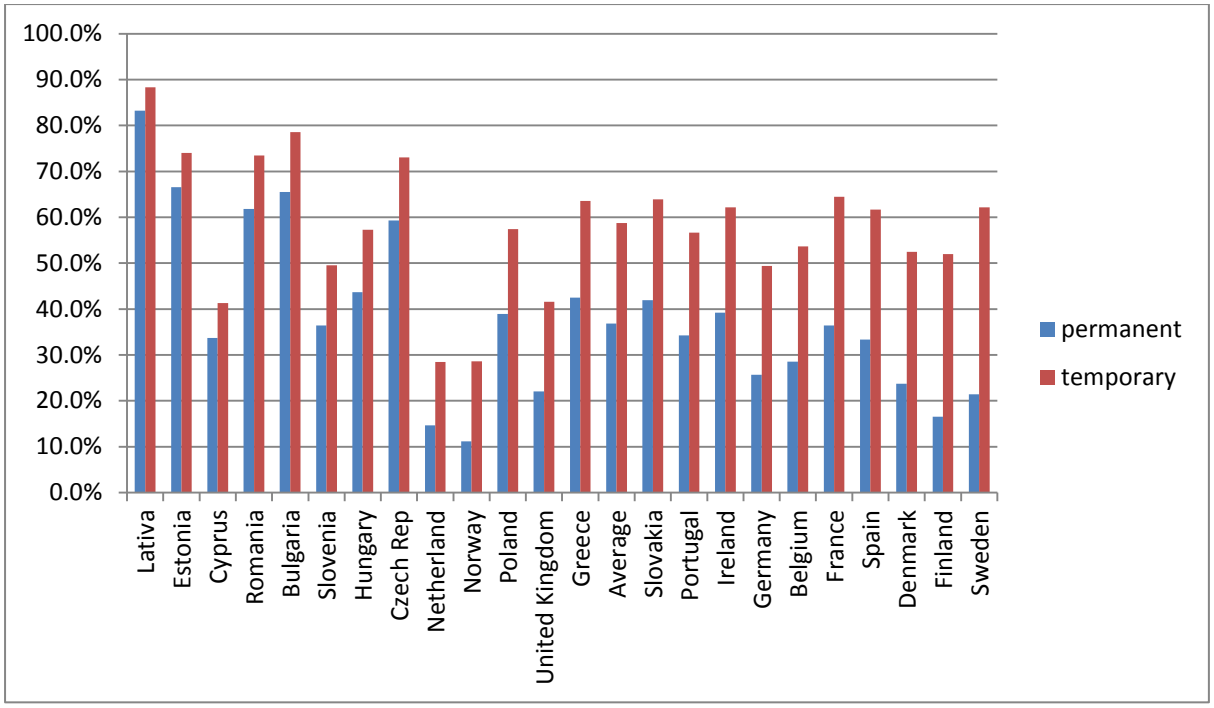
B	A EPL temp	ALMP	PLMP	Inst. Dual	union density	CB coverage	Coordination	Unemp. 08	GDP growth rate 2009	Unemp. change
EPL for regular	n.s.	**A(-)**$^{€}$	n.s.	**A(+)*****	**A(-)*****	**A(-)***** B(+)$^{€}$	**A(-)**$^{€}$	n.s.	n.s.	n.s.
EPL for temporary		**A(-)**$^{€}$	n.s.	**A(+)*****	**A(-)*****	**A(-)***** B(+)*	**A(-)***	n.s.	n.s.	n.s.
ALMP spending			n.s.	**A(+)****	**A(-)***	**A(-)***	n.s.	A(-)* **B(-)***	**B(-)***	**B(-)***
PLMP spending				**A(+)****	**A(-)***	**A(-)****	**A(-)**$^{€}$	**B(-)***	**A(-)**$^{€}$	**B(-)**$^{€}$
Institutional dualization					**A(-)***** B(+)*	A(-)* **B(+)****	**B(+)****	**B(+)*****	**B(+)*****	**B(+)*****
Union density						**A(-)*** B(-)*	B(-)*	A(-)*** **B(-)*****	**B(-)*****	**B(-)****
Collective bargaining cov							**B(-)***	**B(-)*****	**B(-)*****	**B(-)*****
Coordination								**B(-)****	**B(-)****	**B(-)****

Notes: Entries are results from 33 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)
A (represents when the variable in column A is significant) B (represents when the variable in column A is significant), n.s. represents when both variables are insignificant.
The letters in bold represents the stronger predictor in the model. Shaded box represents the best fit model (model with Institutional dualization, union density explains 89.1% of the variance for 19 countries; model with union density and collective bargaining coverage explains 68.3% of the variance for 23 countries; model with union density and unemployment rate of 2008 explains 71.9% of the variance for 23 countries)
The model with institutional dualization, union density and unemployment rate 2008 explains 100.0% of the total variance of the random slope of permanent workers in 19 countries.
The model with union density, collective bargaining coverage, and unemployment rate 2008 explains 82.9% of the total variance of the random slope of permanent workers in 23 countries.
a : direct comparison not possible with models with Institutional dualization (due to the different number of country cases for this variable)
*** = $p < 0.001$, ** = $p < 0.01$, *= $p < 0.05$, €= $p < 0.10$

Appendix Table 4. Correlation matrix of all context variables included in the analysis

	EPL reg	EPL temp	ALMP	PLMP	Bargain. cov.	Union den.	Coord.	Un emp.%	GDP gr.	Unemp. change	% of temp.	% of outsiders	Dualization
EPL regular	1.00												
EPL temp.	0.30	1.00											
ALMP/unemp	-0.19	-0.16	1.00										
PLMP/unemp	-0.11	-0.18	**0.89**	1.00									
Collective bargaining cov.	0.35	0.08	**0.52**	**0.60**	1.00								
Union density	-0.16	-0.32	**0.54**	**0.43**	**0.55**	1.00							
Coordination	0.00	0.00	**0.58**	**0.63**	**0.67**	**0.53**	1.00						
Unemp. % 2008	0.14	0.31	**-0.44**	-0.26	-0.02	**-0.40**	-0.11	1.00					
GDP growth 08-09	0.00	0.12	0.29	0.24	0.35	0.13	0.23	0.06	1.00				
Unemployment change 08-09	-0.21	0.00	-0.26	-0.17	**-0.45**	-0.29	-0.21	0.21	**-0.76**	1.00			
Share of Temp workers	0.39	0.23	0.18	0.29	**0.47**	0.02	0.26	0.29	**0.55**	-0.23	1.00		
Share of outsiders in the market	0.39	-0.02	-0.13	-0.12	0.17	-0.20	-0.03	0.23	0.22	-0.05	**0.45**	1.00	
Institutional Dualization	0.14	0.15	**-0.70**	**-0.66**	**-0.47**	**-0.50**	**-0.45**	0.08	**-0.57**	0.38	-0.34	-0.04	1.00

Note: those marked in bold are significant at a 0.05 level



Appendix Figure 1. Cross-national variance in the subjective employment insecurity gap between insiders and outsiders (having controlled for individual and workplace characteristics) – sorted by the likelihood gap