It's all about the money? Temporary employment, gender, poverty and the role of regulations from a broad European perspective

Wim Van Lancker

University of Antwerp
Herman Deleeck Centre for Social Policy
Sint-Jacobstraat 2
B – 2000 Antwerp
fax +32 (0)3 265 57 98

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ABSTRACT

Departing from growing concerns about in-work poverty and the proliferation of flexible employment, we investigate the association between temporary employment and poverty and the role of regulations in a European comparative perspective. In doing so, we focus specifically on possible gender dimensions, because some are concerned that the impact of flexible employment on income security will be different for men and women and that gender inequality will increase. By means of a logistic multilevel model, we analyse recent EU-SILC data for 24 European countries. The results show that the temporarily employed have a higher poverty risk vis-à-vis permanent workers, mainly caused by lower wages. However, the risk factors to become working poor are similar. The poorly educated, young workers and those living in a single earner household with dependent children have an increased probability to live in poverty, whether they are employed on temporary or permanent basis. Differences between European welfare regimes demonstrate that policy constellations influence the magnitude of these risk factors. Looking at specific policy measures, we find that policies encouraging dual earnership are associated with a lower poverty risk. Counter-intuitively, temporary working women have a lower poverty risk than their male counterparts. They are better protected because they are more often secondary earners in a dual earning household, while men are more often primary earners. Finally, we identify the Netherlands and Czech Republic as countries shaping advantageous circumstances for the temporarily employed. This article advances knowledge on the linkages between temporary employment, economic insecurity and gender differences in European welfare states.

Keywords: temporary employment, regulations, in-work poverty, gender, Europe, comparative

Corresponding author:
Wim Van Lancker
Tel. +32(0)3 265 53 97
wim.vanlancker@ua.ac.be
Herman Deleeck Centre for Social Policy (University of Antwerp)
Sint-Jacobstraat 2 – B-2000 Antwerp

1. Introduction

It is often said that being employed is the best strategy for an individual to prevent living in poverty and that assumption is indeed backed by a vast amount of research (e.g. Cantillon *et al.,* 2003; Atkinson *et al.,* 2005; OECD, 2009). Less than a decade ago, being employed yet living in poverty was considered a marginal issue only relevant for the Anglo-Saxon countries (think about the rhetoric surrounding the so-called *McJobs*). Nevertheless, scholars and policymakers are nowadays increasingly worried about the incidence of in-work poverty in all European member states (Nolan and Marx, 2000; Peña-Casas and Latta, 2004; Andreβ and Lohmann, 2008; Lohmann, 2009; Brady *et al.,* 2010). These concerns are paralleled by the growing emphasis on flexibility to help increase employment rates and render European labour markets more adaptable to structural changes and the emergence of new risks (Viebrock and Clasen, 2009).

More flexibility on the labour market is often translated in nonstandard forms of employment like temporary employment, assumed to improve employment chances for specific groups at risk on the labour market (such as the young, the elderly and the low skilled) on the one hand and to give employers the opportunity to adapt the number of employees to fluctuating levels of demand less costly on the other (Booth *et al.,* 2002; Debels, 2008). However, previous research has shown that temporary employment can also have problematic consequences in terms of job security, income security, employer-provided social security benefits and on-the-job training (OECD, 2002; Leschke and Watt, 2008). If the growth and distribution of flexible employment is associated with negative consequences in terms of income security, this phenomenon could very well be related to the incidence of in-work poverty in Europe. However, research into the poverty risk associated with nonstandard employment relations is rather scarce (exceptions: Debels, 2008; Amuedo-Dorantes and Serrano-Padial, 2010).

Furthermore, some are concerned that the proliferation of flexible work as a strategy to raise employment rates will affect women and men differently and that, consequently, existing gender inequalities will be reinforced (Jepsen, 2005; Hansen, 2007). These worries are not ill-founded: women already have more flexible patterns of work and make transitions in and out employment more often than men, mainly due to their continuing responsibility for parental care and unpaid household work (Lewis, 2006). One of the direct results of this unequal division in household work is lower pay associated with women's work. Given these circumstances, it is unclear how women will fare on the income security side when they are increasingly engaged in nonstandard work patterns. One of the key assumptions of the flexicurity literature is that being at work automatically leads to income security but the abovementioned concerns about the working poor exemplify that this is not necessarily the case (Lewis and Plomien, 2009). The intertwined issues of in-work poverty

and temporary employment have not yet been investigated taking a gender dimension into account.

Finally, it is quite established from the welfare state literature that European countries differ in the extent of their social security systems and labour market regulations; differences that can lead to different poverty outcomes. In this respect, it would be of great interest to know which labour market institutions and regulations are effective in reducing the poverty risk among the temporarily employed. Previous research has engaged in such endeavour on in-work poverty in general (cf. Lohmann, 2009), but did not address the specific case of temporary employment. The main issue here – which can be seen as the *leitmotiv* throughout this paper – is whether the temporarily employed should be treated policy-wise as *similar* or as *different* from regular or standard workers.

Given the above, the main aim of this paper is to explore the relationship between temporary employment and poverty. First, we scrutinize the poverty risk associated with temporary employment *vis-à-vis* permanent employment. In other words, to what extent differs temporary employment from permanent employment in terms of poverty risk? Second, the article will assess whether the 'poverty risk profiles' of the temporarily employed differ from the working poor in general. If this is the case, the implications for policies addressing in-work poverty and flexibility could be profound. Third, we will look into the gender dimension of this issue and compare the poverty risk of temporarily employed women and men. Fourth, we assess the role of institutional factors in explaining cross-country differences in the poverty risk associated with the temporarily employed. Finally, as cross-country comparisons are natural by-products of European survey data we hope to reveal 'good practices', i.e. countries succeeding in providing adequate income security for their flexible workforce. The most straightforward to do this is to compare outcomes between countries. This article draws on data from the European Union Survey on Income and Living Conditions (EU-SILC) waves 2007 and 2008, which allows to include 24 European countries, more than any cross-country comparative study on this topic undertaken before.

In the first three sections, we summarize previous findings on temporary employment, in-work poverty and the role of regulations in Europe from a birds-eye view. Based on these theoretical perspectives, we derive our hypotheses about the linkages between temporary employment and in-work poverty. Thereafter we describe the dataset, variables and the statistical methods, followed by the presentation of descriptive evidence and the empirical results of the analyses. The paper concludes with a summary and a brief discussion of the results.

2. Understanding temporary employment

Temporary employment is commonly seen as a form of nonstandard work (also referred to as atypical employment), which is then juxtaposed against the notion of 'standard work', i.e. permanent and fulltime employment (Kalleberg, 2000). In this article, we endorse the generally used definition of temporary employment as an 'employment relationship with a limited duration' referring to seasonal jobs, agency work, specific training contracts and fixed-term contracts. To employ a more exact definition would be rather tricky because of the different meaning attached to certain forms of temporary work in different countries (Campbell and Burgess, 2001; Conley, 2008). Moreover, the dataset at hand does not allow to distinguish different appearances of temporary work. But whatever the exact meaning in different countries may be, it can be stated safely that the temporarily employed do not have the prospect of a long-lasting employment relationship (OECD, 2002).

There is a close association between forms of employment different from the standard model and precariousness (Vosko, 2008) but not all forms of nonstandard work are precarious per se. The example of part-time work in countries such as the Netherlands is a case in point in this respect. Although associated with negative externalities like lower hourly wages and limited opportunities for advancement in the job, it is in particular a women's affair and for the overwhelming majority a deliberate choice to be able to combine work and family obligations (Eurofound, 2007). Moreover, Dutch women repeatedly report to be satisfied with these atypical work arrangements (Bosch *et al.,* 2010)[1]. The same patterns hold for the majority of women in most European countries (OECD, 2010). In contrast, more than 80% of the temporarily employed report to be involuntary engaged in this kind of contractual arrangements (European Commission, 2002). Furthermore, temporary employment is almost always associated with precariousness, either measured by objective (Booth *et al.,* 2002; Giesecke and Groß, 2004) or subjective standards (Burgoon and Dekker, 2010). Indeed, a large body of research associates temporary employment with lower job satisfaction (Petrongolo, 2004), less access to fringe benefits (OECD, 2002), reduced job security (Gash and McGinnity, 2007), negative health effects (Virtanen *et al.,* 2005; Gash *et al.,* 2007), social fragmentation, isolation and mental problems (Erlinghagen, 2008) and – especially – lower wages compared with permanent employment (Mertens *et al.,* 2007; Elia, 2010).

However, some authors argue that the use of flexible working arrangements serves as a bridge to permanent employment for jobseekers with a weaker labour market profile and is also beneficial for

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[1]   Lewis and Plomien (2006) point out rightly, however, that his cannot simply be equated with the expression of women's preferences because of institutional and cultural influences. There is a correlation between the proportions reporting voluntary part-time arrangements and the extent to which women are *expected* to work part-time.

firms by reducing hiring and firing costs and allowing for the flexible adjustment of the number of employees to fluctuating levels of demand (Atkinson, Rick et al., 1996). Most research shows that the majority of temporary workers indeed move into permanent jobs within two year, although it varies depending on the type of temporary employment (e.g. seasonal workers have less chance to make the transition to permanent employment) and on individual characteristics (OECD, 2002). For instance, the odds of finding permanent employment are lower (and the risk of entering non-employment is higher) for the less educated, older workers and workers who have already been unemployed (Debels, 2008; Barbieri, 2009). Nevertheless, even if temporary workers can genuinely regard their job as a stepping-stone to permanent employment, they can still be expected to suffer from the detrimental effects associated with these working arrangements and be, for instance, at risk of poverty at that particular moment (Burgoon and Dekker, 2010). Given the disadvantages of temporary employment and regardless of mobility patterns, we expect it to be associated with a higher poverty risk than permanent employment (*Hypothesis 1*).

Not everyone is exposed to the risk of becoming temporarily employed to the same extent. Empirical studies have shown that lowly skilled (Giesecke and Groβ, 2004), young (Baranowska and Gebel, 2010) and female workers (Petrongolo, 2004) are overrepresented in temporary employment patterns. Especially for the latter, the negative consequences of temporary employment could lead to a reinforcement of existing inequalities (because the overwhelming majority of women still face the burden of parental care and household work resulting in – *inter alia* – wage penalties). Therefore, we expect the poverty risk to be higher for temporary working women compared to their male counterparts (*Hypothesis 2*).

3. In-work poverty: causes and risk profiles

Previous research on the working poor showed that the variation in poverty rates for the working population (without differentiating between permanent and temporary employment) stems from a combined effect of welfare state policies, the role of the family and individual characteristics (Lohmann and Marx, 2008; Marx and Verbist, 2008). On the individual and the family level, several 'risk profiles', i.e. constellations of characteristics prone to working poverty, have been identified. First of all, in a context where double earnership (and the associated living standard) has become the norm, single earner households with dependent children are most affected by in-work poverty. Households with children entail greater needs and single earners are restricted in their available resources to fulfil those needs (Bardone and Guio, 2005). Adding an extra income to the household's resources whittles down the poverty risk to a great extent, even if the extra income stems from low waged jobs. This is especially relevant in the case of temporary employment because these

jobs tend to be more often low waged than permanent employment. Previous work has regarded the influence of low wage work on in-work poverty and showed that low wages *an sich* do not necessarily lead to working poverty, but the combination with other risk factors leads to the observation that "while most low-paid workers are not in poor households, most workers in poor households are themselves low paid" (Nolan and Marx, 2000: 105). Low pay is thus a factor that should be relevant especially in the case of temporary employment. Second, adding up to this 'household effect' is the finding that dual earner households consist disproportionally of couples where both partners have a higher level of education and, as a consequence, higher earnings. This educational homogamy has the opposite effect for the lower educated (Cantillon *et al.,* 2001). They tend to face an accumulation of disadvantages at the household level by combining higher risks of being unemployed with a higher risk of ending up with a low earning partner (Lohmann and Marx, 2008). Finally, age is also a determining factor. In most European countries, young workers have a higher poverty risk because of the insider/outsider tendencies prevalent on the labour market (Bardone and Guio 2005). In the Mediterranean countries, however, in-work poverty is more concentrated among older workers (Airio, 2008).

Thus, age, education and the composition of the household are risk factors leading to poverty among the working population, especially when these risk-enhancing factors are accumulated at the household level. We expect that the same determinants to become working poor are at play in the specific case of temporary employment (*Hypothesis 3*).

These determinants are not exogenous but influenced by the institutional configuration of welfare states and differ across welfare regimes[2]. To be more precise, the degree of decommodification and defamilization (Esping-Andersen, 1999), i.e. the extent to which the well-being of individuals is independent of the market and the family respectively, proved to be useful tools to map cross-country differences in the incidence and extent of in-work poverty among European countries (Lohmann and Marx, 2008). Defamilization concerns the independence of women from care obligations and a male breadwinner (Orloff, 1993), the independence of children from their parents and *vice versa* (Lohmann, 2008). Welfare regimes differ in the extent defamilization is achieved via dual earner policies (the provision of formal childcare, parental leave regulations) or policies to ensure the economic independence of young persons. The degree of decommodification, achieved through the availability and the level of transfers, should influence the incidence of in-work poverty by increasing the household income through transfers paid to unemployed members of the household and by imposing a minimum floor on the level of wages workers are willing to accept (thus increasing earnings and consequently increasing household resources) (Lohmann, 2009). The

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[2]   In this article, the regimes typology is only discussed in function of working poverty in Europe. A general overview can be found in Arts and Gelissen (2002).

combination of these factors leads to different outcomes in terms of the working poor.

It should be noted that the inclusion of post-communist countries in our sample complicates the matter because we are playing on uncharted territory. It is rather unclear whether these countries should be classified in a separate regime or fitted into existing regimes. Furthermore, Deacon (1993) has shown that large variation exists between the post-socialist member states. However, because our sole purpose is to observe whether different policy configurations in terms of decommodification and defamilization lead to different outcomes, we can overcome this discussion by applying the regimes approach merely as a heuristic tool and not as an explanatory mechanism. Based on recent insights (Fenger, 2007) we therefore extend the traditional four-cluster typology (Ferrera, 1996) with two additional clusters, making a distinction between the Baltic and the Central and Eastern European (CEE) countries. Consequently, we distinguish the Mediterranean (Italy, Portugal, Spain and Greece), CEE (Hungary, Bulgaria, Poland, Czech Republic, Slovak Republic and Slovenia), Continental (Belgium, Austria, The Netherlands, Germany and France), Northern (Sweden, Norway and Finland), Anglo-Saxon (United Kingdom and Ireland) and Baltic (Latvia, Lithuania and Estonia) clusters.

What can be expected from the interconnectedness between welfare regimes and working poverty in the case of temporary employment can be illustrated by briefly summarizing findings from previous research. First of all, the segmented labour market of the Mediterranean regime, where standard workers are strongly protected at the expense of non-core workers (such as the temporarily employed), makes it difficult for young adults to make a decent living from employment (Esping-Andersen, 1999). They are likely to fall back on within-family solidarity for social protection (e.g. they stay longer at home) which leads to a shift of the poverty risk from young adults to older working family members (Lohmann and Marx, 2008). Second, the Northern welfare cluster is in many respects the opposite of the Mediterranean regime. It is characterized by strong degrees of decommodification and defamilization, externalized by *inter alia* extensive dual earner policies leading to high female employment rates (Ghysels and Van Lancker, 2010). The detrimental effect of having children on living in poverty should thus be whittled down. Furthermore, young adults are expected to become self-reliant at early age. Because families are thus not additionally burdened, the risk is not shifted to the older workers and young adults are expected to have the highest poverty risk (Lohmann and Marx, 2008). Third, the continental welfare states are more ambiguous in their policies. Similar to the Mediterranean regime, continental labour markets are strongly segmented and young workers, as newcomers and thus outsiders, find themselves in a weaker position when trying to secure permanent employment (Baranowska and Gebel, 2010). Because continental welfare states realize considerable degrees of decommodification (e.g. via minimum income protection schemes), young adults don't fall back on

family solidarity to the same extent as in the Mediterranean countries. Social security rights are mainly earnings/contributions related and, hence, disadvantageous for young workers in the periphery of the labour market, expected to lead to a higher poverty risk. Finally, the Anglo-Saxon cluster is characterized by deregulation of the labour market and a meagre role of the state in protecting citizens against social risks. Since there is no strong regulation, it can be expected that non-core workers such as the temporarily employed will have more employment opportunities, especially if they are low skilled, which in turn increases the chances of multi-earnership for this vulnerable group. This should mitigate the detrimental effect of low skill.

In sum, individual and household characteristics determining the risk of being at work yet living in poverty are influenced by the institutional configuration of the welfare state, and the theoretical overview above offered a concise illustration of the expected variation across welfare regimes. Drawing on our third hypothesis that temporarily employment does not lead to a distinct variety of in-work poverty, we broadly expect to find the same variation in the structure of in-work poverty among the temporarily employed across welfare regimes in Europe (*Hypothesis 4*). It remains to be seen whether the CEE and Baltic countries fit into these broad patterns, turn out to be a very heterogeneous group or have to be regarded as genuine distinct policy constellations leading to different outcomes for the temporarily employed.

4. The role of regulations

Looking at broad patterns of variation across welfare regimes does however not suffice to disentangle the effect of specific policy measures. One of the aims of this paper is to obtain a better idea which policies are effective in reducing the poverty risk among the temporarily employed. Because policies addressing the working poor cannot be seen apart from more general policies combating poverty nor from general labour market policies and regulations, we identify several policy initiatives supposedly associated with a reduction of in-work poverty based on previous research. The ultimate goal is to test whether our theoretical expectations still hold ground after empirical testing.

One of the domains where labour market institutions are supposed to play an important role is the distribution of wages and the extent of income inequality. In most of the European countries, minimum wages are statutory set by the government, mostly in dialogue with the social partners. The impact of minimum wages on poverty reduction is not clear-cut. On the one hand, it is argued that minimum wages increase the unemployment risk (and thus the poverty risk) of low skilled workers, while on the other it is stated that they improve the living conditions of workers (Eurofound, 2010). The effect seems to depend on the coverage and the level of minimum wages: if they are low enough the impact on

unemployment will be modest, but in that case the same will hold for the poverty reducing effect. And indeed, the level of minimum wages (measured as a proportion of average monthly earnings in services and industry) in European countries with statutory wage setting tends to be set below the poverty line (Eurofound, 2010: 16). Furthermore, as we have shown earlier, in-work poverty does not necessarily overlap with low wages (e.g. Nolan and Marx, 2000). This implies that statutory minimum wages are merely expected to have a minimal impact on the reduction of poverty among the temporarily employed. However, other elements of the system of wage-setting play a more decisive role. For instance, it has been shown empirically that centralized bargaining encourages wage equality (Golden and Londregan, 2006; Kahn, 2007). The more centralized and coordinated the wage bargaining system, the more compressed the wage distribution becomes. This should disproportionally affect the lower part of the wage distribution, thus including the lower paid temporary workers. As a consequence, not minimum wages *per se*, but the system of wage-setting should influence the extent of in-work poverty (*Hypothesis 5*).

More general anti-poverty institutions are the availability and level of social benefits and transfers (Lohmann, 2009). These institutions supposedly influence the level of in-work poverty in several ways. First, the level of unemployment benefits has an impact on the wage levels employees are rationally willing to accept. Second, other members of the household can be eligible for benefits which will increase the household income and as a consequence reduces the risk of living in poverty (Gardiner and Millar, 2006). Third, in some countries low-waged workers are eligible for in-work benefits. All together, we can assume that the level of benefits in a given country will influence the odds for temporary workers to live with a poverty risk (*Hypothesis 6*).

Another important aspect of labour market policies are policies designed to support dual earnership and to alleviate the 'costs' (e.g. reducing working time or temporary leaving the labour market) of raising children, such as family services (e.g. childcare provisions) and family benefits (e.g. child benefits). The former is explicitly designed to allow (in most cases) women to remain attached to the labour market and to add an extra income to the household income. As described above, the household structure is of uttermost importance in explaining the incidence of the working poor. The latter reduces the financial impact of having children by providing benefits topping up the household income. The larger the household, the larger the (financial) needs of household and the greater their poverty risk. Although they are not targeted at the working poor, it is to be expected that poor households will benefit greatly from both institutions (*Hypothesis 7*).

Finally, it was shown in previous research that the incidence of temporary employment is strongly influenced by the stringency of employment protection legislation (EPL) for permanent employment (OECD, 2004;

Chung, 2005). Countries with the strictest regulations of permanent employment are also among the segmented labour markets (Debels, 2008) with more precariousness for the outsiders as a consequence. As such, it can be assumed that strict EPL can influence the extent of in-work poverty among the temporarily employed (*Hypothesis 8*).

To analyse the effect (or better: the association) of regulations and policies on poverty among the temporarily employed, one has to overcome two problems. First of all, policies may interact with each other and come as one 'policy package' which makes it difficult to disentangle the influence of one single policy measure. Second, policies and regulations are sometimes aimed at specific groups of employees. Family benefits, for instance, are aimed at reducing the cost of having children, while family services such as childcare should allow both partners to engage in paid labour by externalizing parental care. The same reasoning holds for the level of benefits. In most welfare states only employees who have contributed long enough to the social security system are eligible for (full) unemployment benefits. As a consequence, it can easily be assumed that the poverty reducing effects of such benefits should be higher for older workers (Lohmann, 2009). By taking into account the differentiated impact of policies on different groups and by following a step-by-step approach, the aim is to disentangle the effect of single policy measures from the whole policy package.

5. Research design

5.1. Data

We draw data from the 2008 wave of the Survey on Living and Income Conditions (EU-SILC). The SILC was officially established in 2004 as a replacement of the EHCP (European Community Household Panel) and is conducted annually on a representative panel of households in each member state of the EU (supplemented by Norway and Iceland). The dataset provides unique and comparable data on income and living conditions of European households. We selected 24 countries: Austria, Belgium, Bulgaria, Czech Republic, Estonia, Germany, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Lithuania, Latvia, The Netherlands, Norway, Poland, Portugal, Sweden, Slovenia, Slovak Republic and United Kingdom[3]. It has to be noted that we draw data from the 2007 wave for United Kingdom and France due to restrictions in the 2008 questionnaire. The sample is constrained to contractual workers (permanent or temporary) in private households at active age (16-64) which leaves us with 119.895 observations.

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[3]   There is no data available on the type of contract for Denmark. We also exclude Luxemburg, Cyprus and Iceland due to lack of cases.

5.2. Micro-level variables

The dependent variable is a binary indicator, coded 1 for workers living in poverty and 0 for not having a poverty risk[4]. People are considered to be poor if they live in a household with an equivalent household income below 60% of the median equivalent household income in the country of residence. The variable is constructed by dividing the disposable household income by the modified OECD equivalence scale (assigning a value of 1 to the household head, of 0.5 to each additional adult member and of 0.3 to each child) to adjust for household composition.

The set of explanatory variables reflect individual, household and job characteristics. Type of contract (1 = temporary employment, 0 = permanent employment) and gender (1 = female, 0 = male) are dummy-coded. Age is grouped in three intervals reflecting young, prime age and older workers (16-29, 30-49, 50-64) while also three educational levels are distinguished (low, medium and high based on the ISCED-97 classification). For household characteristics, we include the number of children (coded with three dummies and no children as reference), living with a partner (1 = yes) including marriage and cohabitation and living in a dual (=1) or single earner household (=0). We also include the gross monthly pay. To make wages comparable between countries and account for differences in affluence and purchasing power, the variable is z-standardized. Finally, welfare regimes are coded as dummy variables.

Besides these variables, we also control for other individual and workplace characteristics to exclude as much as possible competing explanations for our results. Ethnicity is coded with two dummies reflecting the country of origin (EU or non-EU migrants with natives as reference group). It can be expected that migrants will have a greater poverty risk because of their more precarious position in the labour market. Furthermore, we control for the gendered composition of the economic sector (measured according to 8 aggregated NACE classifications). Finally, we control for working time with a dummy (1 = working part-time) and we account for work experience by including a linear variable (number of years) and its quadratic form.

5.3. Macro-level variables

To test the effect of institutions and regulations, we include several variables on the country level, composed from different sources. It has to be noted that we don't have macro-level information for all of the countries included in the sample: data for the Baltics, Romania, Bulgaria

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[4] Pudney (1999) pointed out several statistical problems with Logit and Probit models relating poverty rates to personal characteristics and proposes a parametric modelling of poverty based on the income distribution. However, common practice (e.g. Lohmann, 2009; Brady *et al.,* 2009) shows that Logit models are suitable to expose associations which is sufficient for our purpose.

and Slovenia is missing. Hence, we end up with 10.655 temporary workers from 18 countries.

First, we include the OECD EPL indicator. The OECD provides a summary index of the strictness of employment regulations and is composed of three components (protection for regular worker, requirements for collective dismissal and regulation of temporary and fixed-term employment). We are only concerned with the indicator reflecting the protection for regular workers. The higher the index, the more strict the EPL. Second, as a representation of the wage-setting system, we use an index of wage bargaining centralization. This index is constructed by using the 'summary measure of centralization and coordination of union wage bargaining' from the ICTWWS (Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts) database. The higher the index, the more centralized and coordinated the wage bargaining system. Third, concerning the level of benefits and transfers, we use the average net unemployment benefit replacement rate (calculated as a % of the average wage of a production worker over a 5-year period following unemployment) derived from the OECD indicators on benefits and wages. Fourth, as for the dual earner and family policies, we include the level of public expenditure (as a percentage of GDP) for family services (in kind, such as childcare provisions) and family benefits (cash transfers, such as child benefits) respectively. To exclude the influence of exogenous factors such as economic fluctuations we control for the state of the labour market and the affluence of countries by including the unemployment rate and the GDP per capita for the year 2007, derived from the EUROSTAT database. Descriptives for the macro indicators are to be found in annex (table A1).

5.4. Method

Because we are dealing with hierarchical data (individuals are nested in countries) and our dependent variable is a binary indicator, we apply a multilevel logistic regression models with country as the higher level variable. A multilevel design takes the hierarchical structure of our data explicitly into account and yields less biased standard errors than a regular logistic regression model (Hox, 2002). We estimate several models with stepwise inclusion of explanatory variables to test our hypotheses. We use the Maximum Likelihood procedure as our estimation method, and the deviance (-2*LogLikelihood) to estimate the fit of the models.

6. Results

6.1. Descriptive results

The incidence of temporary employment in Europe differs greatly *between* and *within* welfare regimes. Figure 1 shows the share and the composition of the temporary workforce for all of the countries in our sample. The lowest temporary employment rates are found in the Baltic countries, Romania and United Kingdom with figures ranging from only 1% to 4% of the workforce. In the Mediterranean countries and Poland, temporary employees make up around a quarter of the workforce. Most countries, however, represent rates between 8% and 14%. These figures are more or less in line with previous findings about the incidence of temporary employment in Europe[5].

Figure 1. Share of temporary employment in the workforce of 24 European countries, 16-64yrs, %.
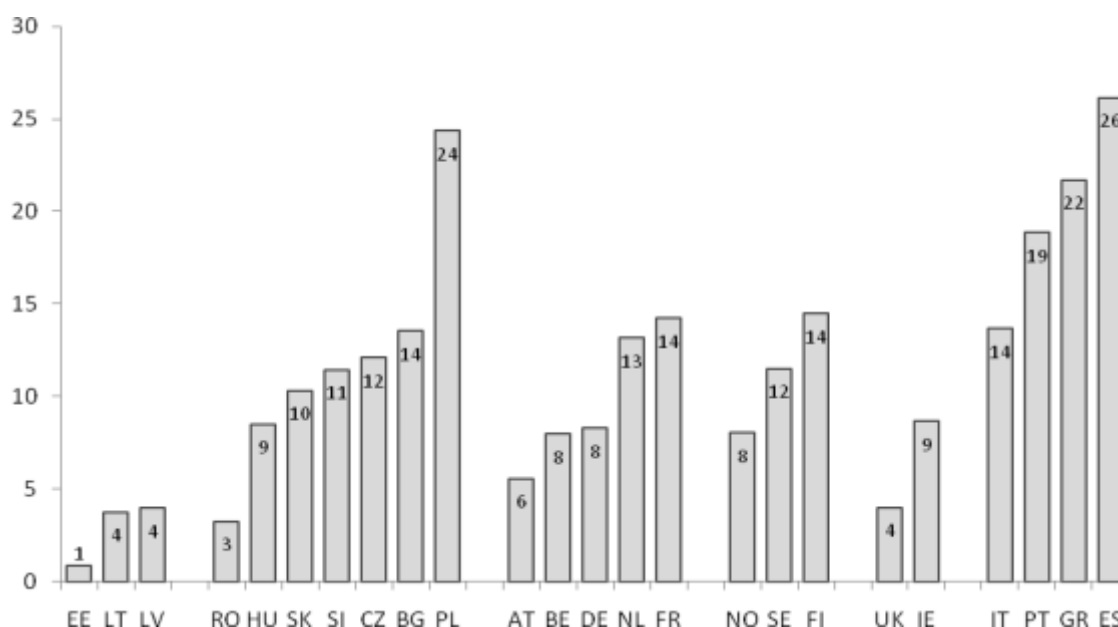
Source: EU-SILC 2007/2008. Weighted figures.

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[5] It was shown that the incidence of temporary employment is correlated with the stringency of employment protection legislation for standard working contracts, next to other factors. Anglo-Saxon countries indeed display comparatively low overall EPL whereas the Mediterranean (especially Portugal and Spain) have the highest overall EPL scores (OECD, 2004).

Table 1.   Total share and composition of the temporary workforce across welfare regimes by sex, age and education.

	Total	Sex		Age categories			Educational Level		
		Men	Women	16-29	30-49	50-64	Low	Medium	High
Baltic	3.2	4.0	2.4	4.2	3.0	2.9	5.9	3.2	2.5
Anglo-Saxon	4.3	4.1	4.5	8.8	3.0	3.2	3.5	4.2	4.8
Continental	10.3	8.9	11.9	22.9	8.6	5.6	15.3	10.0	8.9
Northern	11.3	9.1	13.7	24.6	9.4	6.0	12.5	11.3	10.8
CEE	14.4	14.5	14.3	24.7	11.5	11.9	22.3	14.8	10.1
Mediterranean	19.9	18.7	21.3	38.6	18.4	9.8	23.8	16.8	17.9

Source: EU-SILC 2007/2008. Weighted figures.

Turning to the gender distribution of the temporarily employed (table 1), we notice that differences between men and women are not really pronounced: the shares of temporarily working men and women are in the same order of magnitude across regimes. While in most of the cases slightly more women than men are temporarily employed, this pattern is reversed in the Baltic and CEE countries. Despite the fact that is often reported that women are *overrepresented* in temporary employment (Petrongolo, 2004), the differences turn out to be rather modest. It is however important to note that temporary arrangements tend to be concentrated in certain sectors, such as the distribution sector, hotels and restaurants and public administration (Conley, 2003). At this sectorial level, the distribution is much more gendered. For instance, we find in our dataset that about 43% of the temporarily employed women are working in the public sector against only 17% of the men. We will control for these sectorial differences when we engage in multivariate analyses.

In all regimes, the highest proportion of temporary workers is found among the youngest cohort with especially large differences with other cohorts in the Mediterranean, Northern, continental and CEE countries while the differences are less pronounced in the liberal and Baltic regimes. It is noteworthy that, as an exception, a large share (12%) of the workers between 50-64 are working on temporarily basis in the CEE countries. We also observe that, looking at educational level, the low skilled have more chance to work on a temporary basis, although the extent differs between welfare states. In the Mediterranean and CEE countries almost a quarter of the less educated are temporarily employed, while the Baltics and the liberal regimes resemble each other again with a proportion of only 5%. It is interesting to notice that the risk to become temporary employed is much more equally distributed among age categories and educational levels in countries with low overall shares of *tempwork*.

Table 2. Total poverty rates for permanent and rates for temporary workers by sex, age and education.

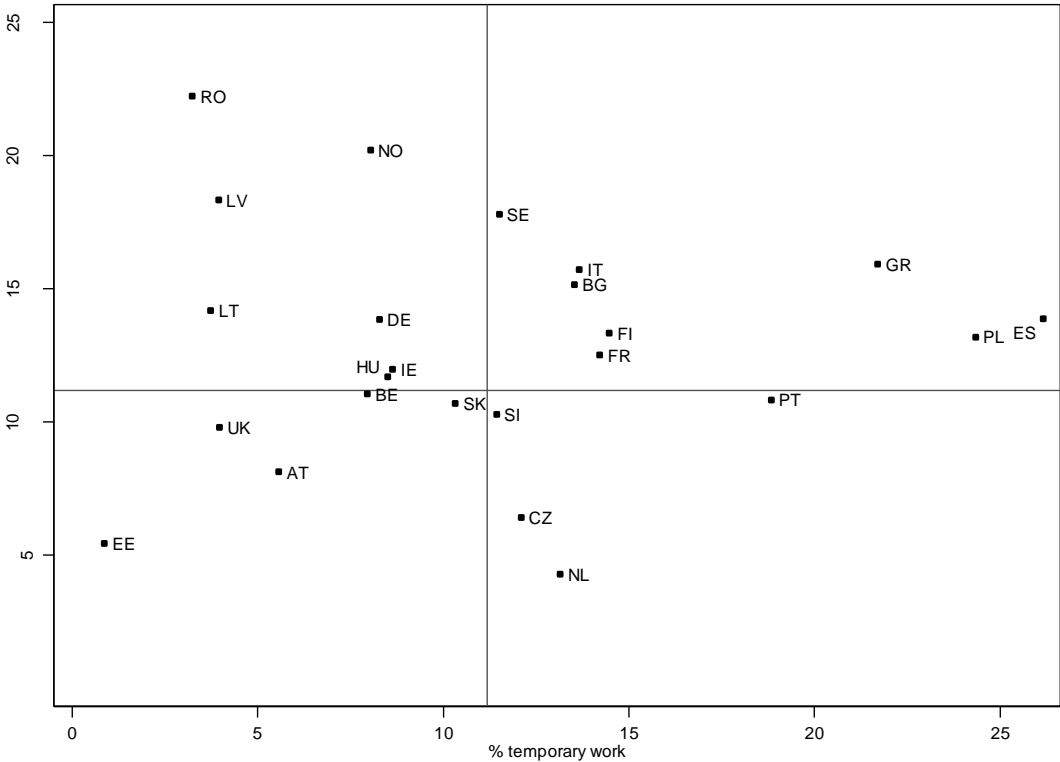|	Permanent	Temporary employment								
	Total	Total	Sex		Age categories			Educational level		
			Men	Women	16-29	30-49	50-64	Low	Medium	High
Baltic	6.7	13.7	13.0	14.8	10.5	14.9	13.6	34.6	14.3	2.6
Anglo-Saxon	4.3	10.1	10.4	9.7	16.7	7.2	7.8	13.6	15.0	2.6
Continental	4.1	11.5	11.3	11.6	12.8	10.5	12.2	16.7	13.5	7.0
Northern	3.3	14.1	16.0	13.1	24.7	8.2	6.6	22.1	19.0	6.4
CEE	4.3	11.0	13.1	8.5	7.9	12.4	11.6	27.0	11.2	1.2
Mediterranean	4.9	12.3	15.4	8.5	9.2	12.8	16.3	18.9	10.9	4.8

Source: EU-SILC 2007/2008. Weighted figures.

Now that we have examined the incidence and variation of temporary work in Europe, we link these findings to the poverty figures. Table 2 reports total poverty rates for permanent and temporary employees (first and second column) and differentiated by gender, age and education for the latter. First of all, we clearly observe that temporary employment is associated with a higher poverty risk across all regimes. Surprisingly, the poverty rates for the temporarily employed are highest for the Northern countries and lowest for the Anglo-Saxon ones while the working poor rate for the permanent employed is also lower for the Anglo-Saxon than for the Baltic and Mediterranean cluster. The perception of in-work poverty as an exclusive Anglo-Saxon phenomenon is thus clearly misleading.

Second, low education is associated with a higher poverty risk than medium and high educational levels, except for the Anglo-Saxon countries. Third, we find strong variation by welfare regimes for the age cohorts most at risk. The youngest cohorts face the highest risk in the Northern and Anglo-Saxon countries while the oldest workers face the highest poverty risk in the Mediterranean cluster. The other regimes, however, show a mixed pattern. Finally, we observe that poverty rates for temporary employed women are lower than for men, except in the Baltic and Continental clusters. All in all, this shows that the patterns of in-work poverty across welfare regimes vary as predicted in the theoretical section above: low skilled temporary workers face a lesser risk in the Anglo-Saxon countries, the young have a higher risk in the Northern and the oldest cohort has the highest poverty risk in the Mediterranean countries.

Figure 2. Share of temporary work and incidence of poverty risk among temporary workers, 16-64yrs, European countries.

Source: EU-SILC 2007/2008. Weighted figures.

To shed light on the relation between temporary employment and the incidence of in-work poverty at the macro level, we plotted the share of temporary workers against the share of temporary workers living in poverty in Europe as a final descriptive step in figure 2. This way, we obtain a better view of the cross-country differences in the association between poverty and the temporarily employed. Prima facie, there is no clear link between the number of temporary workers and the poverty risk associated with such contract (r = 0.2, p > 0.05).

To facilitate the interpretation of the scatter plot, we roughly divide the countries in four groups using the average numbers as intersections. First, we notice a group of countries with a low share of temporary workers and a modest poverty risk: United Kingdom, Estonia and Austria (with Belgium, Slovak Republic and Slovenia as borderline cases). Second, a group of countries with a lower than average share of tempworkers facing a higher than average poverty risk can be distinguished: Romania, Latvia, Lithuania, Germany and – perhaps more surprising – Norway with Ireland and Hungary as more ambiguous cases. Third, a group of countries combine a large number of temporarily employees with a higher than average poverty risk: the Mediterranean countries (with Portugal as borderline case), Bulgaria, Poland, France and the Nordic countries Finland and Sweden. Finally, only two countries succeed in accommodating a larger than average temporary workforce with a low poverty risk: Czech Republic and notably the Netherlands. In sum, the European labour

It's all about the money? Temporary employment, gender, poverty and the role of regulations from a broad European perspective

17

market is characterized by great diversity, not only in the incidence of temporary employment but also in the poverty risk associated with those arrangements. As a consequence, the assumed link between the two is rather ambiguous.

6.2. Multivariate results

6.2.1. Permanent v Temporary employment

We begin our analysis with the estimation of an empty model (baseline model, not shown) to analyse the between-country variance without considering any control or explanatory variables on the individual level. We calculate the intra class correlation coefficient (ICC) as 0.06, indicating that only 6% of the residual variation in poverty risk among temporary and permanent workers can be explained by country-level differences. This is an interesting observation, because it means that almost all variation in the odds of living in poverty in our sample is attributable to differences between individuals. This does not mean, however, that the country-level is negligible, only that we cannot explain much by looking at pure country-differences and that individual (and household characteristics) are of major importance to explain in-work poverty. To explore whether a multilevel approach is appropriate given the small ICC, we compared the empty model with a standard logistic regression model using a likelihood-ratio test. This showed that we can reject the null hypothesis that the variance at the country-level is equal to zero ($p < 0.001$), pointing to the relevance of using a multilevel approach. All the models are presented in Table 3 and 4.

In the first model, permanent and temporary employed are compared including control variables but excluding explanatory variables[6]. The second model includes all individual and household characteristics whereby the third model adds wages. Compared with permanent workers, the odds for the temporarily employed to live in poverty are increased with a factor 2.31 (95% CI: 2.15-2.49). This result remains robust when controlling for compositional effects in the second model. Although we find significant effects of age (the youngest cohort), education (the low skilled) and composition of the household (having children and living in a single earner household) to become working poor, the difference in poverty risk between permanent and temporary employment is reduced with only 3% (OR: 2.22; 95% CI: 2.05-2.40). In other words, individual and household characteristics only explain the poverty gap between temporary and permanent employment to a very small extent. They do explain a reasonable amount of the poverty risk among working people in general: the deviance falls to 37.429 which is a drop of 16%.

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[6] Estimates of the control variables are not shown in the models. They are available upon request.

Table 3. Multilevel logistic regressions predicting the risk of living in poverty (odds ratios).

	All workers			Permanent	Temporary		
	M1	M2	M3	M4	M5	M6	M7
Type of contract							
Permanent	Ref.	Ref.	Ref.				
Temporary	2.31 ***	2.22 ***	1.31 ***				
Age cohorts							
16-29		1.41 ***	1.32 ***	1.28 ***	1.34 **	1.34 **	1.35 **
30-49		Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
50-64		1.02	1.07	1.09	1.03	1.03	1.03
Gender (male = ref.)		1.06	0.53 ***	0.53 ***	0.56 ***	0.56 ***	0.56 ***
Household composition							
0 children		Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
1 child		2.02 ***	2.56 ***	2.71 ***	2.08 ***	2.07 ***	2.07 ***
2 children		3.53 ***	5.08 ***	5.38 ***	4.18 ***	4.17 ***	4.15 ***
3+ children		6.85 ***	10.45 ***	11.10 ***	8.65 ***	8.61 ***	8.59 ***
Partner (0 = no)		1.14 ***	1.26 ***	1.29 ***	1.17	1.17	1.18
Dual Earner (0 = no)		0.13 ***	0.09 ***	0.08 ***	0.11 ***	0.11 ***	0.11 ***
Education (med. = ref.)							
Low		1.82 ***	1.32 ***	1.32 ***	1.25 *	1.26 *	1.26 **
High		0.37 ***	0.71 ***	0.75 ***	0.57 ***	0.57 ***	0.58 ***
Monthly gross wages			0.08 ***	0.07 ***	0.10 ***	0.10 ***	0.10 ***
Baltic							2.29 *
Anglo-Saxon							0.96
Continental							0.55 *
Northern							0.71
CEE							0.96
Mediterranean							Ref.
Random part							
$\sigma^2_{COUNTRY}$	0.174	0.293	0.280	0.295	0.235	0.274	0.109
σ^2_{GENDER}						0.005	
Cov (gender, country)						-0.038	
Deviance	*44.384*	*37.429*	*29.891*	*24.442*	*5.421*	*5.421*	*5.408*
Observations	*119.895*	*119.895*	*119.895*	*108.455*	*11.405*	*11.405*	*11.405*

Source: EU-SILC 2007/2008. All models are controlled for sector, job experience, working time and ethnicity. Significance: * p<0.05, ** p<0.01, *** p<0.001.

The poverty difference between permanent and temporary employment is significantly reduced with 43% (OR: 1.31; 95% CI: 1.20-1.43), however, when we control for wage differentials (Model 3). It thus seems that, if we assume equal pay for temporary and permanent employment, the poverty differences between the two types of contract are whittled down. Interestingly, including wages also leads to a change in the effect of gender. Model 2 showed no significant difference between men and women, while it turns out that the latter have a lower poverty risk taking wages into account (OR: 0.55; 95% CI: 0.51-0.60), net of the type of contract. This result can be explained if we assert that the wage variable

It's all about the money? Temporary employment, gender, poverty and the role of regulations from a broad European perspective

19

captures the gender wage gap. The deviance drops with an additional 17% which means a significantly better fit.

Our hypothesis predicting a higher poverty risk associated with temporary employment *vis-à-vis* permanent employment is confirmed. The model shows that the major driver of the poverty differences is connected to the lower remuneration of temporary work. We also find that age, education and the composition of the household are determinants of becoming poor for workers, net of the type of contract. We predicted (*Hypothesis 3*) that the same determinants would be at play in the specific case of temporary employment. We investigate this more in-depth in the next section.

6.2.2. Risk profiles of the temporarily employed

To investigate whether the 'risk profiles' of the temporarily employed are similar to the working poor in general, we estimate separate models for subsamples of permanent (108.455 observations) and temporary workers (11.405 observations) respectively (Table 3). Looking at models 4 and 5, we observe that age, education, gender and the composition of the household are determinants of becoming working poor for temporary and permanent workers alike, controlled for ethnicity, working time, job experience and sector. Model 5 shows that young temporary workers have a higher risk of living at-risk-of-poverty than the reference group (OR: 1.34; 95% CI: 1.09-1.64) while the older cohort does not exhibit an increased risk. Being high skilled reduces the poverty risk (OR: 0.57; 95% CI: 0.45-0.72) while the poverty risk soars with low skill (OR: 1.25; 95% CI: 1.05-1.49). Furthermore, living in a dual earner household protects a *tempworker* against poverty (OR: 0.11; 95% CI: 0.10-0.13) compared with a single earner household, and the more children in the household, the higher the poverty risk. Quite straightforward, the higher one's wage, the lower the risk of being poor (OR: 0.10; 95% CI: 0.08-0.11). As being said, the same holds for the permanent workers in model 4. The only notable difference is found in the effect of the partner variable reflecting the effect of having a non-working spouse (because we control for dual earnership): the poverty risk increases for permanent workers, while the effect is not significant (although pointing in the same direction) for temporary workers. In other words, what is relevant to stay out of poverty is living in a multi-earner household, not having a partner as such. Finally, we observe that temporary working men are confronted with a higher poverty risk than women (OR: 0.56; 95% CI: 0.47-0.66). A preliminary refutation of hypothesis 2 we will discuss further below.

To summarize, the temporarily working poor are by no means a distinct category of the working poor because the same risk factors are determinative: being young, having low skills or living in a single earner household and/or in a household with greater needs (dependent children, non-working spouse). Coming back to our leitmotiv, our results suggest

that poverty among temporary workers does not justify a distinct policy treatment.

6.2.3. Variation across welfare regimes

Table 2 demonstrated that not the Anglo-Saxon but the Northern welfare states show the highest poverty rates for temporary workers, closely followed by the Baltic and Mediterranean regimes while the CEE and continental regimes occupy an intermediate position. Controlled for individual, household and work-related characteristics however, the pattern changes (Model 7). While the effects of the explanatory covariates remain stable, pure regime effects can be read from the regime dummies included in the model. Compared with the Mediterranean cluster (reference category), the Baltic countries are identified as underachievers (OR: 2.29; 95% CI: 1.12-4.56) while the continental cluster does significantly better. The figures for the Northern, CEE and Anglo-Saxon clusters do not show such significant difference. In other words, the initial poor performance of the Northern cluster does not stem from the institutional configuration of the Scandinavian welfare states but from the composition of the temporary workforce.

Table 4.   Estimates of risk factors to become working poor by welfare regimes (odds ratios).

	Education		Age cohorts		Number of children			Partner	Dual earner	N
	Low	High	16-29	50-64	1	2	3+			
Baltic	1.74	0.89	1.15	0.45	0.45	6.13	4.49	1.50	**0.03** ***	254
Anglo-Saxon	**0.26** *	**0.24** *	**4.44** *	2.79	3.21	1.38	3.34	1.34	**0.13** ***	368
Continental	0.96	**0.52** ***	**1.86** **	0.88	1.62	**4.19** ***	**7.90** ***	0.81	**0.08** ***	2.107
Northern	0.78	0.68	1.96	0.76	1.76	2.32	1.98	**0.37** *	**0.11** ***	767
CEE	**1.63** **	**0.30** ***	0.90	0.93	**3.53** ***	**5.72** ***	**13.93** ***	0.95	**0.15** ***	3.826
Mediterranean	1.19	0.76	1.23	1.33	**1.75** ***	**3.92** ***	**7.81** ***	**1.80** ***	**0.10** ***	4.083

Notes: estimates of individual and household variables (columns) by welfare regimes (rows) are shown as odds ratios. All models are controlled for class, industry, experience, working time and ethnicity and the same variables included in model 7.

Source: EU-SILC 2007/2008. Significance: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

We hypothesized that the effect of (some of) the risk factors identified in the previous models would vary across regimes (Hypothesis 4). To test this in a straightforward way, we estimate separate models for each welfare regime. This way we are able to analyse whether the behaviour of the poverty determinants in a specific welfare regime differs from the

general pattern observed in models 5 to 7. A drawback of this approach is that we are not able to compare the magnitude of the effects between clusters. Because we are only interested in the broad patterns per regime, however, we can simply ignore this problem. The estimates of age, education and household composition of the six separate models are reported in Table 4.

Looking at the figures from a birds-eye view, we generally observe the predicted variation across regimes. First of all, low skilled temporary workers have a higher poverty risk due to their disadvantaged position on the labour market and the phenomenon of educational homogamy. Theory predicts, however, that they will have more employment opportunities in the strongly deregulated Anglo-Saxon labour markets which should lead to a lower poverty risk (because income from work can be pooled more often in multi-earner households). Indeed, the negative effect of low skill is reversed in the Anglo-Saxon cluster. We also find that being low skilled is especially problematic in the CEE countries. Second, it was expected that young workers have a higher risk in the Northern and continental welfare states (albeit for different reasons) while older workers should be in particular at risk in the Mediterranean countries. We indeed find that young temporary workers are significantly more at risk in the continental welfare states. Although the estimates have the expected sign, the effect of age is not significant in the Northern and Mediterranean countries. Third, having children increases the needs of households which in turn leads to a higher poverty risk. Due to extensive dual earner policies such as public childcare provisions, this child effect is whittled down in the Northern cluster. Surprisingly, the same phenomenon can be observed for the Anglo-Saxon and Baltic countries. Because the Anglo-Saxon countries are characterized by the lack of public childcare provisions, it must be the case that the necessity for both parents to work forces them to find a care solution on the private market or via informal channels (Sigle-Rushton and Waldfogel, 2007). The high female employment figures for the UK are also an indication of this interpretation (Van Lancker and Ghysels, 2010). The observation that in the continental cluster the effect of having 1 child is not significantly different from having no children for temporary workers while having more children clearly leads to a higher poverty risk, illustrates its policy ambiguity. Fourth, having a non-working spouse lowers the poverty risk of *tempworkers* in the Northern countries. The level of benefits for the unemployed or inactive is high enough to lift households above the poverty threshold. In the same line of reasoning, the opposite results we observe in the Southern cluster can be traced back to the lack of decommodifying measures in these countries, additionally burdening single earners. Finally, and importantly, we find that living in a dual earner household protects the temporarily employed against the risk of living in poverty across *all* European welfare regimes.

As for the former socialist economies, we are indeed to a certain extent playing on uncharted territory. The lack of significant results for the Baltics raises questions about the feasibility of allocating them to a distinct

welfare regime, while further research is needed to explain the divergent results (e.g. no age effect) of the CEE countries.

6.2.4. In search of a gender dimension

We assumed (Hypothesis 2) that temporary working women will be more at risk of poverty than their male counterparts. Model 5 showed, however, that the opposite seems to be the case. Women have a lower poverty risk than men, all else being equal (OR: 0.56; 95% CI: 0.47-0.66). One of the explanations has to be sought, ironically, in the still prevailing social reality of the male breadwinner model. Although the decline of the male breadwinner model has been observed throughout the European Union, women are still in majority secondary earners responsible for the bulk of parental care (Lewis, 2001). In the case of temporary employment, however, this second income is sufficient to lift the household above the poverty threshold. Because temporary working men are more often primary earners in a single earner household, their income is more often not sufficient to achieve income security. Indeed, in the whole sample of temporary workers, 68% of women live in dual earner households while only 56% of the men do. Differences between welfare regimes range from 77% of women and 56% of men living in dual earner households in the Mediterranean countries to only 48% and 31% in the Northern regime[7]. Further analysis confirms this interpretation[8]. The consequence is that once women face detrimental events such as partnership dissolution, their poverty risk soars, especially with children present in the household (Dewilde, 2002; Misra *et al.,* 2007).

The final question is whether this phenomenon differs between countries. It could be that the circumstances shaped by country policies shape different gender outcomes. Therefore we extend the model to allow both the intercept and the slope to test whether the effect of gender varies not only *within* but also *between* countries. Model 6 gives the results, and we observe that the variance of the gender variable at the country level is 0.005. The covariance estimate of -0.038 means that in countries with a higher than average intercept (meaning that temporary workers living in those countries have higher odds to live in poverty, taking all other variables into account), the effect of gender seems to be less marked. However, to test whether this result is significant we have to perform a likelihood ratio test (comparing this model with the previous model with only a fixed gender effect). The result is 0.448 on 2 degrees of freedom [-2*(-2710,695 - -2710,471)=0.448]. The 5% of a chi-squared distribution on 2 degrees of freedom is 5.99. *Ergo*, we have to conclude that the effect

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[7] The high incidence of women and men living in single earner households could also be part of the explanation of the *prima facie* high poverty rates among the temporarily employed in the Northern countries.

[8] We modelled interaction effects between gender and living in a dual earner household. The results reveal that the protective shield of living in a dual earner household is indeed stronger for women.

of gender does not differ across countries and welfare regimes. The second hypothesis is thus not confirmed: temporary working women do not face higher poverty risks than temporary working men; the opposite is true.

6.2.5. Does regulation work?

In this part of the analysis, we assess whether regulations work in reducing the poverty risk among the temporarily employed. If so, we also want to know specifically which ones prove to be effective. Given the low variance of the variables and the difficulty to disentangle the effect of a single institution out of a country's policy package, we start by examining each single macro variable (Model 8a-e) and we expand these models step by step (Model 9-11, see Lohmann (2009), for a similar strategy). The correlation table of the macro variables is to be found in table 5, the results are shown in table 6.

Table 5.   Correlations table of the macro-level variables.

	1	*2*	*3*	*4*	*5*	*6*	*7*
1 EPL	1						
2 Replacement rate	0.41	1					
3 Bargaining centralization	0.47	0.16	1				
4 Family benefits	-0.15	0.44	0.03	1			
5 Family services	0.04	0.33	0.05	0.37	1		
6 Unemployment rate	-0.03	-0.10	-0.38	-0.14	-0.33	1	
7 GDP per capita	0.05	0.21	0.61	0.15	0.54	-0.65	1

Source: EU-SILC 2007/2008.

Table 6.   Coefficients (odds ratios) of random intercept models on the probability of living in poverty for temporary employees.

	Model 8a-e [1]	*Model 9*	*Model 10*	*Model 11 [2]*
EPL	0.89	0.98	1.06	1.02
Replacement rate	**0.99 ***	0.99	**0.99 ***	1.00
Bargaining centralization	0.38	0.55	0.27	0.68
Family benefits	0.87	0.99	1.01	0.93
Family services	0.87	0.98	0.83	**0.62 ** **
Unemployment rate			**1.17 *** **	**1.18 *** **
GDP per capita			**1.01 ** **	**1.01 ***
Deviance	-	7327	7314	5009
Observations	10.655	10.655	10.655	10.655

Significance: * p<0.05, ** p<0.01, *** p<0.001.

Notes:

[1] Coefficients of bivariate models

[2] Including all micro-level explanatory and control variables

Source: EU-SILC 2007/2008.

In a bivariate perspective (model 8), we only observe an effect of the unemployment benefit replacement rate. The higher the replacement rate, the greater the effect on poverty reduction. The effect remains significant controlling for exogenous factors (model 10) but disappears when all control and explanatory variables are included (model 11). However, we expected that this institution should be more effective among older employees. Cross-level interactions (model 14 in Table 7) show that this is not the case. The level of the unemployment benefits is not reducing the poverty risk among older temporary employees, while for the youngest cohort the effect is even adverse.

Table 7. Coefficients (odds ratios) of cross-level interactions of macro-level variables on the probability of living in poverty for temporary employees.

	Model 12	*Model 13*	*Model 14*
Macro			
A Family benefits	0.46		
B Family services		0.97	
C Replacement rate			0.99
Cross-level			
A x 1 child	0.92		
A x 2 children	**0.61 ****		
A x 3 children	**0.48 ****		
B x 1 child		0.74	
B x 2 children		**0.57 ***	
B x 3 children		**0.32 *****	
C x 16-29			**1.02** *
C x 50-64			1.00
Deviance	5061	5058	5068
Observations	10.655	10.655	10.655

Significance: * p<0.05, ** p<0.01, *** p<0.001.

Notes: The models include all explanatory and control variables

Source: EU-SILC 2007/2008.

We find a significant effect of family services (OR: 0.62; 95%CI: 0.47-0.83) in the full model (model 11). Apparently, policies supporting dual earnership are effectively associated with lower poverty rates, while no such effect can be observed for family benefits. We however formulated the expectation that both policy measures would be specifically effective for families with children. Cross-level interactions reveal that this true for both measures (model 12 & model 13). The larger the households, the more significant the observed estimates: family benefits and family services are reducing the poverty risk for households with two or more children.

The bargaining centralization index and EPL do not yield the expected results. No significant estimates can be observed and we cannot but conclude that more stringent EPL for permanent employment nor

centralized wage bargaining have a profound effect on the poverty incidence among temporary employees. Only hypothesis 7 is thus confirmed.

6.2.6. 'Good practices' and 'worst cases'

In the final part of our analysis, we look into cross-country differences in the poverty risk associated with temporary employment. An advantage of using a multilevel model is that it is possible to look at the residual country variation while controlling for individual variables. In other words, the residual country variation in the individual poverty risk among tempworkers is strictly due to elements (for instance, regulations, labour market institutions or the social security system) at the country-level. Figure 3 shows the cross-country variation. We observe that, *ceteris paribus* (controlling for individual, household and structural effects and thus assuming that all individuals living in the countries included in our sample have the same characteristics), The Netherlands and Czech Republic succeed in protecting their flexible workforce against poverty better than on average. The same holds, though to a lesser extent, for Belgium, France and Italy. On the other hand, in the upper right area of the graph (which represents the bottom of the "league table") we notice significant negative effects for Bulgaria, Latvia and Lithuania and to a lesser extent Spain and Poland. In these countries tempworkers face a higher poverty risk than on average, all else being equal. The log odds for individual temporary workers to end up in poverty in the other countries are not significantly different from the overall average.

Figure 3.   Empirical Bayes estimates of country-level random effects (model 6).
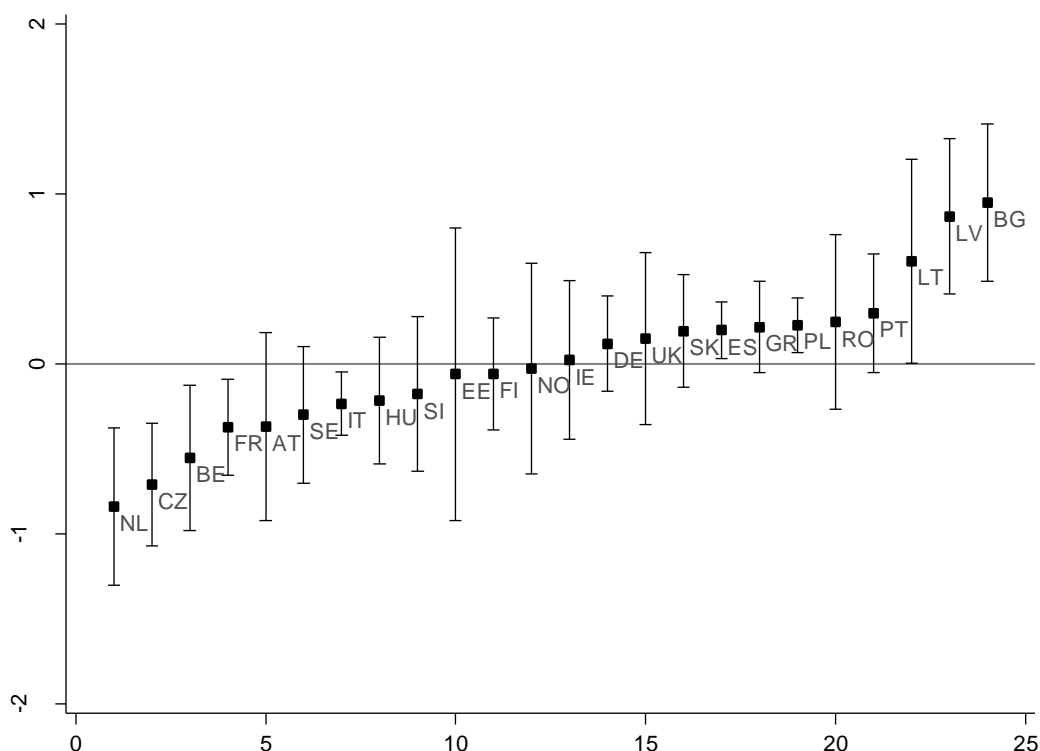
Note: the graph displays country-level residuals of intercepts with their 95% confidence intervals, estimated from model 6. In countries that show no overlap with the zero line, temporary workers are significantly more/less likely to live in poverty than on overall average ($p < 0.025$).

Source: EU-SILC 2007/2008.

7. Conclusion and discussion

In this article, we have demonstrated that temporary employment is *ceteris paribus* associated with a higher poverty risk than permanent employment. The major cause of this difference is the wage gap between both employment arrangements. If we assume that both temporary and permanent workers are equally paid, the poverty gap largely attenuates. Consequently, in this sense it is all about the money indeed. Policies enforcing equal pay for *tempworkers* should thus reduce the differences in poverty risk. However, low wages do not *cause* in-work poverty as such. We showed that individual and socio-economic household characteristics such as age, education and the composition of the household are the determinants of living at risk of poverty, net of the type of contract. This also means that it doesn't make sense to target policies to prevent in-work poverty specifically at the temporarily employed: they are no different from the working poor in general. Instead enhancing the employability of vulnerable workers, overrepresented in temporary employment arrangements, should reduce the poverty risk of *all* workers alike.

Although individual and household characteristics are the nuts and bolts of explaining the incidence and extent of in-work poverty among the temporarily employed, we showed that differences in the institutional configuration across welfare regimes influence the magnitude of the risk factors. To disentangle which *specific* part of the institutional framework is associated with a lower poverty risk, we tested several separate policy measures using macro level indicators. The results show that measures encouraging dual earnership are associated with a lower poverty risk. However, our results are not as revealing as expected. If the temporarily employed are no different from regular workers when it comes to poverty risk, policy measures counteracting poverty among workers (as identified in previous research) should then be as effective in the case of temporary employment. The poor results can at least partly be explained by the very nature of using macro-level aggregates as indicators for specific policy measures: the limited between-country variation leads to less significant results and, more profound, it is nearly impossible to find out whether these indicators catch what they are supposed to catch. Moreover, macro indicators do not grant insights into the how and what of the mechanisms of policies. Unfortunately, we have to conclude that the approach applied in this paper contributes little to our understanding of poverty-reducing policies and regulations. Further research should therefore concentrate its efforts on in-depth country studies. We identified the Netherlands and Czech Republic as good practices, i.e. countries succeeding to reduce the poverty risk among the temporarily employed particularly well. We showed descriptively that they record the lowest poverty figures for *tempworkers*, and even after controlling for compositional effects (thus excluding explanations due to the composition of the population) they continue to outperform all other European countries, including the Nordics. Identifying the institutional causes leading to this good result in these two countries would probably be far more revealing than engaging in multivariate analyses applying macro indicators.

Finally, we devoted special attention to the gender dimension of the linkage between temporary employment and poverty. Unexpectedly, we find that women working with a temporary contract have less chance to end up in poverty compared with their male counterparts. This is because temporary working women are more often than men secondary earners in dual earner households. Their extra income generally suffices to lift a household above the poverty threshold, while this isn't the case for temporarily employed men in their role as prime earners. Ironically, one could say that temporary working women are shielded from poverty because of the historical legacy of the male breadwinner model.

Acknowledgements

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29

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IT'S ALL ABOUT THE MONEY? TEMPORARY EMPLOYMENT, GENDER, POVERTY AND THE ROLE OF REGULATIONS FROM A BROAD EUROPEAN PERSPECTIVE

33

Annex

Table A1. Descriptives table of the macro-level variables (mean values).

Country	Replacement rate [A]	Family benefits [B]	Family services [B]	Bargaining centr. [C]	EPL [D]	Unemp. Rate [E]	GDP per capita [E]
AT	62	2.4	.5	.767	2.37	4.4	123
BE	63.6	1.7	.9	.485	1.73	7.5	116
CZ	58.1	1.2	.6	.377	3.05	5.3	80
DE	62.7	1.4	.7	.497	3	8.4	116
ES	49.6	.4	.7	.459	2.46	8.3	105
FI	70.6	1.6	1.4	.386	2.17	6.9	118
FR	60.2	1.4	1.6	.265	2.47	8.4	108
GR	22.5	.7	.4	.401	2.33	8.3	93
HU	51.9	1.9	1.2	.251	1.92	7.4	63
IE	75.7	2.2	.3	.447	1.6	4.6	148
IT	7.5	.6	.7	.389	1.77	6.1	103
NL	72.1	.6	1	.594	2.88	3.2	133
NO	78.6	1.6	1.3	.516	2.25	2.5	179
PL	50.4	.8	.3	.237	2.06	9.6	54
PT	60.9	.7	.5	.556	4.17	8.1	78
SE	68	1.5	1.7	.528	2.86	6.1	125
SK	39.1	1.7	.5	.508	2.31	11.1	68
UK	61	2.2	1	.31	1.12	5.3	117

Note: GDP per capita is expressed in purchasing power parities (EU27=100)

Source:

[A] OECD Indicators on benefits and wages (www.oecd.org/els/social/workincentives)

[B] OECD Social expenditures database (SOCX) (www.oecd.org/els/social/expenditure)

[C] ICWTSS database, version 2 – January 2009 (www.uva-aias.net/207)

[D] OECD Indicators on employment protection (www.oecd.org/employment/protection)

[E] EUROSTAT online database (epp.eurostat.ec.europa.eu/)