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Wage inequality, labour market flexibility and duality in Eastern and Western Europe

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In the last two decades a broad process of labour market reforms towards more flexible and liberal models has been taking place in Europe. For Central and Eastern European countries this evolution was an important dimension of the wider process of institutional change which accompanied their transition to market economies. This article presents the complex picture of EU countries at the outset of the recent crisis (2007) in terms of the components of earnings differentials, with particular emphasis on the dimensions of labour market flexibility identifiable with contractual arrangements (temporary versus permanent employment) and self-employment. Our main focus is on Central and Eastern European countries but we keep old EU members as benchmarks. Results highlight that different factors lie behind permanent/temporary and permanent/self-employed earnings gaps in the two regions. The dualism between regular and flexible jobs in the CEE labour market is mainly based on workers' attributes; in the Western EU the dualism is instead mainly driven by discrimination associated with labour positions.

The debate about earnings dispersion has revived in the last two decades after the contribution by Krueger and Summers (1988), who showed for the US the existence of wage disparities between agents employed in different sectors but with identical personal and working conditions. This evidence clearly contrasted with the mainstream approach and initiated a new wave of research about sector-specific patterns of wage dynamics and structure. At the same time, in response to a widely perceived need, a massive evolution of labour market regulations and functioning, especially at the European level (Checchi and Lucifora 2002) was taking place. The 1990s in particular were years of deep labour market reforms in several countries, with the introduction (or strengthening) of various flexibility dimensions and, more generally, evolution of labour market institutions towards a more liberal model (Gulev 2007).

In the same years the bloc of countries beyond the iron curtain started their turbulent conversion into market economies; transition implied comprehensive institutional reforms and economic and structural change, which led to initial dramatic output plunge and favoured, on the distribution side, the extension of income and wealth inequalities largely evidenced by the existing literature (e.g. Milanovic 1998, 1999).

After two decades the European picture is complex: most of the former socialist countries are EU (and some of them EMU) members, even though their economic

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convergence process is far from being completed and the transition is still under way; the old EU members are still adjusting their institutional evolution in response to national and international social and economic pressures. In general, all EU countries are now facing the threats and consequences of the global crisis of 2008, which has re-opened the debate about what economic and governance model can ensure sustainability of development dynamics. One of the most interesting dimensions of the discussion relates the deep roots of the financial and economic crisis to the changes in labour market conditions which occurred in the 1990s, since flexibilisation of working positions and low wages may have contributed to shaping new inequalities and the growing recourse to indebtedness, which helped to spark the financial crisis, accelerated its transmission to the real sector and weakened the potential forces for recovery (Stiglitz 2009, Atkinson *et al.* 2009, Saez 2010).

In this article we aim to present the complex picture of EU countries at the outset of the crisis (2007) in terms of the components of labour earnings inequality. We focus on the role of individual, job position and employer characteristics in shaping inequality, with particular emphasis on the impact of the dimensions of flexibility identifiable with contractual arrangements (temporary versus permanent employment) and self-employment. We maintain that these dimensions of flexibility shape new types of labour market duality. A first contribution of the article consists in showing that different forms of labour market duality may exist in Eastern countries, compared with Western Europe. Our empirical approach makes use of standard decomposition techniques and is basically descriptive in nature; it provides new insights into the factors behind wage differentials between labour market segments with different degrees of flexibility in a comparative perspective. Beyond some technical aspects related to the implementation of a standard decomposition applied to labour positions (permanent, temporary and self-employment), a second main innovative contribution of the study lies in the fact that similar approaches are usually confined to one or a few countries. We instead provide here a comprehensive picture in a comparative framework which includes Central and Eastern European countries (henceforth CEECs) *vis-à-vis* Western EU economies. This in particular allows us to discuss and shed light on the radically different duality emerging across the two regions, with important consequent policy insights.

The article is organised as follows. First we provide a survey of the existing empirical and theoretical literature in which our work is placed and propose an interpretative framework of labour market duality in CEECs. We then describe our empirical approach, which basically relies on a Blinder–Oaxaca decomposition technique applied to different labour positions (permanent, temporary and self-employment). In the following two sections we present the dataset and basic descriptive statistics, and the outcomes of the decomposition. The concluding paragraph provides some final remarks.

Inequality in transition, labour market flexibility and dual labour markets

Structural factors and inequality in transition

An extensive literature has been developing on the drivers of inequality in recent years, both on the theoretical and the empirical side. The first comprehensive works (Milanovic 1998, 1999, Flemming and Micklewright 2000), among many insights, highlighted that (a) inequality increased remarkably during transition but with significantly different patterns across countries; (b) increasing wage inequality was everywhere the main driver of income inequality; (c) private income sources other than wages contributed little to inequality with the exception of a few countries; and (d) social transfers and taxation

played a countervailing role, but with pensions that were paradoxically pro-inequality in some countries of Central Europe and especially in Russia. The major role played by labour earnings has of course attracted many research efforts, being strictly related to the effects of the downsizing of the state sector on the opening of productivity differentials, on industry mix adjustments (Görzig *et al.* 2005)¹ and on labour market imbalances with the consequent public policies (Mitra and Yemtsov 2006). All these interacting aspects were considered in the initial Optimal Speed of Transition (OST) model (Aghion and Blanchard 1994) and its ensuing evolution (Blanchard and Kremer 1997, Boeri 2000). Clearly, as technological and organisational change were major features of transition, relative demand and supply for types of labour assumed a crucial role (Aghion and Commander 1999). As is described in a number of studies (EBRD 1999, Keane and Prasad 2002), during transition old labour skills were devalued and the stock of human capital underwent a similar experience as the stock of physical capital. At the same time, new and foreign firms introduced new freedom in wage setting in their sector, which in respect of human capital means that the potential expected returns to education have increased. These developments specific to transition countries were placed in the more general 'Transatlantic Consensus' view (Milanovic 1999), which associates increased wage dispersion with the shift of labour demand from unskilled to skilled workers typical of developed market economies (driven by skill-biased technological change or by an increase in international trade, depending on the aspects relatively more emphasised). Parallel to the demand-shift story of Western industrialised countries, in the transition countries a shift from the state sector to the private sector of the labour market explains rising inequality in earnings and finally rising general inequality (see Hölscher 2006).

As regards income sources other than labour earnings, the existing empirical literature (e.g. Mitra and Yemtsov 2006, Hölscher 2006) is generally consistent with Milanovic's point (i.e. relatively little contribution to inequality) but sheds light on the evolution of the social structure in formerly planned economies, mainly driven by the growth of assets and real property, and professional position. In particular, Mikhalev (2003) emphasises the emergence of the new elites, a middle class composed of commercial, managerial and professional positions, a large low-income class consisting of blue-collar workers, farmers and state sector employees, and the lowest social position, occupied by deprived and marginalised people. This new stratification is one of the drivers of the increasing polarisation of incomes observed in transition.

A number of studies also directly relate inequality to policy measures implemented during and after transition. Giammatteo (2006) and Gerry and Mickiewicz (2008) show that state taxes and transfers played a vigorous role in containing inequality, especially during the most turbulent years; nonetheless, some specific components of state transfers (i.e. retirement benefits, child and family allowances) proved to be inequality-enhancing. Ivanova (2007) explains that at the outset of transition the allocation of available resources was strongly biased towards policies promoting growth, which failed to attain the expected results in the short run. As a result, in the absence of even a minimal safety net, the economic conditions of large sections of the population quickly deteriorated. Milanovic and Ersado (2010) directly measure the effects on decile income shares of progress in reforms towards full market economies, revealing that economic reforms in general were strongly pro-rich and anti-poor. However, if the transition trajectories are considered separately, a significant pro-inequality role is played only by large-scale privatisation and infrastructure reforms, whereas small-scale privatisation seems beneficial for the income share of the bottom deciles (see also Ivaschenko 2002, Mitra and Yemtsov 2006). Aristei and Perugini (2011) consider the effects of reforms' speed and sequencing on transition,

concluding that a more coordinated implementation allowed containment of adverse distributive outcomes. Lastly, Gerry and Mickiewicz (2008) focus on the inequality/democracy link in transition and find evidence that in the short term political reforms increase income inequality but work in the opposite direction in the longer run, suggesting that stable democracies probably benefit from a more embedded and active civil society.

Before entering into details of labour market developments and their consequences for inequality, we briefly mention that a few studies also considered the distributive patterns in Eastern Europe in terms of well-being. Grün and Klasen (2001) found that, compared with the approaches relying solely on income measures, well-being levels in the countries studied fell sharply during transition since generalised output decline was accompanied by increasing income inequality. Aristei and Perugini (2010) consider well-being rankings in European transition countries *vis-à-vis* the old EU members, but using a multidimensional approach and country-specific estimates of inequality aversion parameters to correct for distributive patterns.²

Flexibility and wage inequality in CEECs

The process of structural and economic transformation associated with transition has severely affected labour markets, resulting in their well-known underperformance which unexpectedly persisted for many years in terms of open unemployment (especially long-term and youth), underemployment (low-productivity employment and hidden unemployment) and low labour participation (Rutkowski *et al.* 2005). At the same time, the surge in wage disparities naturally associated with the unfolding of market wage setting, productivity differentials and returns to education was magnified by market distortions which affected the most vulnerable segments (unskilled and older workers) and pushed them to the bottom of the income ladder. These slack labour markets and the associated rising social costs rendered job creation and the facilitation of job and worker reallocation a crucial policy priority. While the first dimension (job creation) basically relied upon the provision of a favourable investment climate, the second (reallocation) was mainly interpreted as evolution of labour markets towards more flexible models (Rutkowski 2006), though not always accompanied by proper formal safety nets owing to hard public budget constraints. As a result, the share of regular formal-sector jobs has declined while the incidence of temporary, informal work and self-employment has increased. These factors, along with the drivers of wage dispersion typical of full market economies (personal characteristics—age, education, experience, gender—and job position features—firms' sector, size and location)³ led Eastern wage differentials to exceed the EU and OECD averages, notwithstanding some decline in recent years (World Bank 2005).

As already mentioned, the study of wage inequality during transition has attracted many economists' attention in the last two decades. Early contributions and predictions of an inequality surge mostly based on the OST models were followed by a massive amount of theoretical and empirical studies (extensively reviewed in Aristei and Perugini 2011). There is a general consensus in this literature that wage inequality rose in the early stage of transition (Milanovic 1998, Newell and Reilly 1999, Newell 2001). In later stages of transition empirical evidence is more mixed, showing further monotonic increase (Keane and Prasad 2006), alternate trends (Newell and Socha 2005), stabilisation (Orazem and Vodopivec 1995, Vodopivec 2006) and even decline (Kecmanovic 2011). The variability of this evidence is explained in terms of structural and institutional differences among the countries under scrutiny.⁴ The evolution towards greater labour market and wage flexibility indeed took different forms across CEE countries; nevertheless there are some

common patterns of which we now provide an overview, emphasising the dimensions considered later in the empirical analysis: temporary and self-employment.⁵

A common strategy to promote flexibility in CEE countries has been, on the model of Western EU countries (Esping-Andersen and Regini 2000), the liberalisation of temporary contracts (so-called flexibility at the margin). Proponents of flexibilisation maintain that temporary contracts provide a stepping stone to employment for jobseekers otherwise at risk of exclusion—e.g. youth (Kahn 2005), while providing benefits for firms as a screening device (Riley 2001) and reducing firing costs (Blanchard and Landier 2002). A rival perspective is that fixed-term employment is associated with low-wage and low-productivity positions, poor working conditions and insecure job traps (Booth *et al.* 2002). Fixed-term contracts were introduced during transition also with the particular aim of easing labour reallocation in a period of intense job creation and destruction. On the firms' side, the opportunity of activating temporary contracts helped them cope with uncertainty related to newly initiated activities and the general transition environment, especially in the countries where employment protection legislation was stricter and/or more strongly enforced.⁶ Temporary employment was also extensively implemented in slack labour market (agricultural or intensively restructuring) contexts as a buffer to unemployment, while often maintaining strict regulations for permanent contracts. In such contexts temporary jobs are mainly involuntary and associated with low occupational status and pay (Baranowska and Gebel 2008).

Self-employment can be seen as a second main dimension of flexibility and its surge was a major trajectory of change during transition; with a few exceptions in Hungary and Poland (Kornai 1992) self-employment was indeed by definition severely discouraged under socialist regimes. In general, the expansion of self-employment significantly contributes to inequality and may be driven by push and/or pull factors (Meager 1996, Falter 2007). It may indeed simply indicate a forced recourse to a residual sector with work positions which differ little from unemployment, or an excess of high-skilled workers who are forced to undertake a professional career with low returns. The push forces were also typically nourished by employers in order to reduce labour costs or circumvent employed labour regulations where they appeared too stringent. During transition this was clearly the case for lower-income countries or regions highly specialised in agriculture or declining sectors, where self-employment typically took the form of own-account and casual jobs in subsistence farming or retail trade and consumer services (Earle *et al.* 1994) and predominantly involved male workers; however, no clear-cut and general age, skills and experience average profile emerges for the self-employed (Earle and Sakova 2000). This suggests that the variety of economic and structural conditions in CEE countries may induce country specificities revealing the true prevailing nature of self-employed workers (Dutz *et al.* 2001).⁷

As for pull factors, self-employment may be related to an environment encouraging risk undertaking, job creation and structural change biased towards activities which demand professional services. Under such circumstances self-employment is a voluntary welfare-maximising choice made predominantly by skilled individuals attracted by higher earnings prospects. This is often as an intermediate step to successful and durable entrepreneurship in dynamic sectors of growing economies (see Millàn *et al.* (2010) and the many references cited therein). In CEE countries these attractive drivers are confined to advanced stages of transition and more dynamic regional and sectoral contexts, and involve high-skilled individuals (European Commission 2010). Both pull and push forces tend in general to widen earnings inequality, exacerbating heterogeneity of self-employed workers and the variability of earnings (Albarràn *et al.* 2007), but their relative momentum

determines which tail of the distribution contributes more to the overall effect. The existing literature emphasises that the push factors, associated with the lower tail of the earnings distribution, played the principal role during transition (Earle and Sakova 2000).

Dual labour markets and interpretive framework

Both temporary jobs and self-employment can in general be regarded as specific segments of dual labour markets. An accurate review of the vast literature on dual labour markets (Saint-Paul 1996) is beyond the aims of this article and we will focus here on some basic references in order to spell out our interpretive framework. The concept of duality in the labour market may be represented in our view as evolving along an ideal line starting from the seminal paper by Doeringer and Piore (1971), proceeding with later works by Osterman (1982) and Piore (1983), and approaching in more recent times the new formulations provided by Boeri and Garibaldi (2007) and Belot *et al.* (2007). According to the institutionalist perspective adopted by the first three papers, dual labour markets can be seen as segments in which the behaviour of agents (employers and employees) is strongly influenced by the distinctive characteristics of the employees. The primary sector is mainly and usually composed of male, more educated and experienced workers, employed in high-productivity sectors; they earn relatively high wages and have stable employment and desirable working conditions. In the secondary sector the opposite employee, job and remuneration attributes are found. Additionally, there are barriers to mobility between the two segments, leading some workers to be trapped in the undesirable secondary sector. This kind of segmentation has also been seen as occurring within large firms and as a result of vertical disintegration and downsizing processes. For example, Osterman (1982) highlights that large firms can offer stable jobs, career prospects and clear promotion rules to some workers while, at the same time, they can hire a large number of (typically young and female) workers who are poorly paid, hold high-turnover clerical positions and have virtually no prospects of upward mobility. This conceptual framework can be fruitfully used to explain how dual labour markets may have emerged in transition economies: within the large state-owned enterprises (SOEs) operating under central planning, the two segments mentioned probably coexisted but did not emerge as dual owing to the egalitarian framework in which these companies operated. The massive privatisation and liberalisation processes, as well as the downsizing of firms that occurred during transition, have probably caused the *push forces* to drive the weakest segment of the labour force out of employment or into the newly emerged secondary sector. Thus the introduction of temporary jobs and the growth of self-employment, basically implemented in the 1990s, can also be viewed as mechanisms providing an alternative to unemployment.

Conversely, in Boeri and Garibaldi (2007) and Belot *et al.* (2007) the focus is on the incomplete labour market reforms implemented in almost all Western European countries in the last two decades. The remarkable asymmetry between highly protected regular jobs and highly deregulated temporary jobs is basically thought to have induced two-tier reforms, in which the duality is identified in the employment status rather than in difference in personal and social characteristics or in structural factors. According to Boeri and Garibaldi (2007), the attempt to reduce unemployment by liberalising temporary contracts only generates a 'honeymoon effect', i.e. a short-term increase in average employment during the transition from the previous rigid regime to the new one, characterised by the two-tier reforms. However, it also negatively affects the average productivity of labour, given a context of low investment and decreasing marginal

returns. This lower productivity means lower wages, irrespective of differences in productive attributes of workers, as confirmed by the empirical evidence that shows how temporary contracts negatively affect productivity (Boeri and Garibaldi 2007). An additional explanation concerning this labour market discrimination (based on employment status) is provided by Belot *et al.* (2007). According to these authors, the low-productivity/low-wage trap of temporary workers is caused by their difficulty in accumulating firm-specific competences within the firm, while high education and non-specific experience (for example the number of years spent in paid work) are not sufficient to boost productivity.

Although the two streams of literature operate from different theoretical perspectives, i.e. institutionalist versus revised neo-classical context (Pompei and Pieroni 2008), a link between these two interpretations can exist which allows us to formulate a tentative working hypothesis. Our empirical analysis is indeed not only aimed at exploring whether dual labour markets exist or not but also attempts to highlight possible distinctive features in dual labour markets of Central and Eastern EU countries compared with their Western counterparts. By means of the basically descriptive tools presented in the next section, we will then address the following questions:

- (a) Is the segmentation of labour markets in CEECs and Western countries on a similar scale, in terms of wage differentials?
- (b) Is the juxtaposition of the two labour market duality hypotheses (institutionalist versus neo-classical) somehow helpful in interpreting East/West differences?
- (c) Which individual characteristics, if any, play a role in explaining wage differentials and in characterising the nature of labour market duality?

Methodology

Our objective is to shed light on the role played by contractual arrangements in shaping wage inequality in the CEE countries, compared with Western EU members. To this end, we divide the pool of those who earn a labour income into sub-groups (permanent workers, temporary workers and self-employed) and decompose pair-wise mean differences in (log) earnings based on regression models in a counterfactual perspective. This approach is standard in the literature and referred to as the Blinder–Oaxaca (henceforth B–O) decomposition (Blinder 1973, Oaxaca 1973). The method allows decomposition of the difference in earnings averages between groups into a component related to workers' characteristics (or endowments) and a residual (unexplained) part, to be interpreted either as discrimination or as the effects of unobserved characteristics.

We use here the two-fold variant of the B–O method briefly described below. A general and exhaustive description of the methods, along with the procedure for their implementation in STATA, can be found in Jann (2008).

Our groups of interest are permanent employees (P), temporary employees (T) and self-employed (S). We use permanent positions as a benchmark and study the components of the differences in their mean earnings from those of temporary workers and self-employed, separately. The description below refers to the comparison P – T, but the P – S analysis is of course analogous.

Our objective is to understand how much of the mean (log) hourly wage (Y) difference

$$D = E(Y_P) - E(Y_T) \quad (1)$$

is accounted for by differences in the characteristics of the workers in the two groups.

For each group separately a linear Mincer-type model of wage determination can be estimated in the form:

$$Y_P = X_P' \beta_P + \varepsilon_P \quad (2)$$

$$Y_T = X_T' \beta_T + \varepsilon_T \quad (3)$$

where X_P and X_T are vectors containing the workers characteristics and a constant; the β contain the respective slope parameters and the intercept, and ε is the error term. With the usual assumptions $E(\beta_P) = \beta_P$ and $E(\varepsilon_P) = 0$ (and obviously the same for the T model), Equation (1) can be rewritten as:

$$D = E(Y_P) - E(Y_T) = R = E(X_P)' \beta_P - E(X_T)' \beta_T \quad (4)$$

In order to identify the contribution of workers' characteristics to the overall wage differences, Equation (4) can be rearranged, introducing a non-discriminatory coefficient vector (β^*), into two addends:

$$D = [E(X_P) - E(X_T)]' \beta^* + [E(X_P)'(\beta_P - \beta^*) + E(X_T)'(\beta^* - \beta_T)] \quad (5)$$

where the first addend is the wage differential explained by group differences in the characteristics (C) and the second addend measures the unexplained difference which is due, predictors being equal, to returns differences (R) and is usually attributed to discrimination (between groups) or to unobservable characteristics.

The empirical estimation of Equation (5) is straightforward, since least square estimates of Equations (2) and (3) provide $\hat{\beta}_P$ and $\hat{\beta}_T$, respectively, whereas group means \bar{X}_P and \bar{X}_T can be used as estimates for $E(X_P)$ and $E(X_T)$. For the estimation of ($\hat{\beta}^*$) different options exist, depending on the assumptions made about which group is discriminated against and on the interpretation of results more functional to the analysis. In our case we use $\hat{\beta}^* = \hat{\beta}_T$ so that we can more directly interpret the explained difference component (see Oaxaca (1973), Reimers (1983) Neumark (1988) and Cotton (1988) for alternative approaches). Equation (5) now reads:

$$\hat{D} = (\bar{X}_P - \bar{X}_T)' \hat{\beta}_T + \bar{X}_P' (\hat{\beta}_P - \hat{\beta}_T) \quad (6)$$

This two-fold decomposition isolates the contribution to average (fitted) wage disparity attributable to:

- (i) group differences in the workers' characteristics (first addend— \hat{C}); i.e. the expected change in group T's mean wage if group T had group P's characteristics;
- (ii) group differences in the returns / coefficients (second addend— \hat{R}): i.e. the expected change in group P's mean wage if group P had group T's returns / coefficients.

The interesting opportunity offered by this version of the B–O decomposition is that the specific contribution of each characteristic (or group of contributors) to the macro-component can be detailed. In particular, for the explained component (\hat{C}), this allows identification of the specific role of predictors (e.g. education, age, experience) in shaping wage differentials; as for the returns component (\hat{R}), the approach allows us to isolate how much the unexplained gap depends on differing returns (discrimination) observed at the same level of education or experience, for example. The identification of the contributions of the individual characteristics to the explained and unexplained parts of the gap is quite simple since each macro-component is the sum of the individual contributions

(see Jann 2008, p. 461). Therefore, the detailed decompositions of (\hat{C}) and (\hat{R}) read:

$$\hat{C} = (\bar{X}_P - \bar{X}_T)' \hat{\beta}_T = (\bar{X}_{1P} - \bar{X}_{1T})' \hat{\beta}_{1T} + (\bar{X}_{2P} - \bar{X}_{2T})' \hat{\beta}_{2T} + \dots \quad (7)$$

and

$$\hat{R} = \bar{X}'_P (\hat{\beta}_P - \hat{\beta}_T) = \bar{X}'_{1P} (\hat{\beta}_{1P} - \hat{\beta}_{1T}) + \bar{X}'_{2P} (\hat{\beta}_{2P} - \hat{\beta}_{2T}) + \dots \quad (8)$$

Data and first descriptive evidence

The dataset used for the empirical analysis is EU SILC (European Union Statistics on Income and Living Conditions), which provides comparable, cross-sectional and longitudinal multidimensional data on personal income from different sources and individual characteristics (Table 1). In this study we consider the cross-sectional sample for 2007. This was the most recent year available at the beginning of the study and is particularly meaningful since it exactly precedes the explosion of the global crisis. Our analysis primarily concerns the 10 CEE countries (Poland, Hungary, the Czech Republic, the Slovak Republic, Slovenia, Romania, Bulgaria, Estonia, Lithuania and Latvia) and uses the Western EU member countries as benchmarks (with the notable exceptions of UK, France and Denmark since data of interest are not available for them). In the tables and diagrams we show results for all the CEE countries and, for the sake of brevity, only

Table 1. List of variables used in the Mincerian Equation (abbreviations and EU-SILC codes).

Name	Variable description	EU-SILC code
Age	Worker's age	PB140
Sex	Worker's gender	PB150
Education	Worker's education (highest ISCED level attained), re-grouped into: <ul style="list-style-type: none"> – Primary education (Prim. educ.) – Secondary education (Sec. educ.) – Tertiary education (Ter. educ.) 	PE040
Occupation	Occupation (ISCO-88 (COM)), re-grouped into: <ul style="list-style-type: none"> – Managers & Senior Officials (M & SO) – Professionals & Technicians (P & T) – Clerks (Clerks) – Skilled Agricultural & Craft Workers (SA & CW) – Machine Operators (MO) – Elementary Occupations (EO) 	PL050
Exp	Number of years spent in paid work	PL200
Second Job	Workers' second job (0 = no second job, 1 otherwise)	PL100
Sector	Sector of employment, re-grouped into: <ul style="list-style-type: none"> – Agriculture – Industry – Construction – Hotels & Restaurants (Hotels & Rest.) – Trade (Trade) – Real Estate & Finance (RE & Finance) – Transport (Transport) – Personal, Comm. Services & Public Admin. (Pers. & PA) 	PL110
Size	Size of the firm in which the worker is employed (0 if < 10, 1 otherwise)	PL130

for four meaningful sample Western EU countries, representative of different capitalist models: Italy, Germany, Ireland and Sweden. However, since the empirical analysis was carried out on all EU countries, we also provide mean values for the two sets of East and West economies. Data on the remaining Western countries are available upon request.

Since our focus is on labour earnings, we included in the sample only individuals over 16 years of age, employed and with positive labour incomes. As usual in the literature, we excluded the top and bottom 1% of observations in the labour income distribution. The final sample size is of 70,562 individuals for CEE countries and 83,456 individuals for Western EU members (country details in Table 2). As for labour earnings sources, considering the information available in the EUSILC database, we were able to distinguish three major categories, corresponding to the categories of interest here (permanent, temporary and self-employment).⁸

Employee income derives from variable PY010G (*Employee cash or near cash income*) and is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done in the reference period. This is mainly composed of wages and salaries paid in cash, holiday payments, thirteenth month payment, overtime payment, profit sharing, bonuses and productivity premia, allowances paid for transport or for working in remote locations.⁹ As regards earnings from self-employment, they were derived as the sum of variables coded PY050G (Cash benefits and losses from self-employment) and PY070G (Value of goods produced for own consumption). Self-employment income is defined as the income received in the reference period as a result of current or former involvement in self-employment. Self-employment jobs are those jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced.¹⁰ Self-employment data are very incomplete for Sweden and Estonia, so wage disparities for these two countries are confined to permanent / temporary differentials.

In order to avoid dis-homogeneities in cross-individual earnings comparisons due to different hours of work, all the earnings measures are computed on an hourly basis. This was rendered possible by the information included in variables PL060 (Number of hours usually worked per week in the main job) and PL070 and PL072 (Number of months spent at full-time and part-time work, respectively). All monetary variables are expressed in Euro PPPs. As for the variables used as predictors of (log) wage, we employ a standard Mincer (1974) equation which includes as explanatory variables education (PE040), experience (PL200) and its square, and various controls for other individual characteristics such as age (PB140) and gender (PB150), for the type of occupation (PL050), for presence of a second job (PL100) and for firm sector (PL110) and size (PL130). Table 1 provides the variables list, definition and codes.

First descriptive evidence of variability of hourly earnings across and within countries by status in employment is provided in Tables 2 and 3. It is no surprise that, even taking into account purchasing power parities, the differences between CEECs and the old EU members remain notable. In particular both West European permanent workers and self-employed earn on average about three times more than the corresponding categories in the East (EUR 15.34 versus 6.03 for permanent and 14.70 versus 4.83 for self-employed workers). This distance shrinks to twice for temporary workers (EUR 10.96 versus 5.27). Thus at first glance, if we adopt a comparative advantage perspective, an Eastern temporary worker seems to be in a better relative position than his/her Western counterpart: the gap between hourly wage of permanent and temporary workers in CEECs is indeed small (EUR 6.03 versus 5.27) and the latter exceeds self-employment hourly earnings. Conversely, in Western Europe, the permanent/temporary gap is larger (EUR

Table 2. Descriptive statistics for hourly earnings by employment status (EU eastern and western countries).

	Average West EU Countries										Average West EU Countries					
	Bulgaria	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia		Czechia	Germany	Ireland	Italy	Sweden
Permanent workers' hourly wages in 2007																
Obs	3.171	7.944	5.609	6.764	4.794	5.355	9.209	5.252	3.642	6.807	58,547	9.190	2.950	12.326	3.106	61,108
mean	4.15	6.82	7.03	5.98	6.03	6.22	7.80	3.51	12.40	5.10	6.03	15.70	18.73	14.80	17.06	15.34
cv	0.49	0.39	0.53	0.54	0.57	0.61	0.55	0.49	0.43	0.37	0.61	0.47	0.58	0.44	0.40	0.52
min	1.20	2.25	1.99	1.55	1.47	1.04	1.49	1.18	2.67	1.49	1.04	1.86	4.13	1.86	1.35	34.01
max	14.03	19.10	21.61	21.17	25.06	25.36	27.59	11.78	34.01	12.79	34.01	42.44	83.12	39.86	49.56	92.96
Temporary workers' hourly wages in 2007																
Obs	194	1.038	30	698	134	143	2,401	114	354	660	5,766	577	193	2,095	634	10,117
mean	3.92	6.09	6.91	8.15	5.56	5.24	5.08	2.73	8.41	4.25	5.27	10.32	13.84	10.01	14.87	10.96
cv	0.60	0.47	0.49	0.84	0.53	0.67	0.60	0.48	0.51	0.45	0.67	0.57	0.71	0.44	0.51	0.69
min	1.20	2.35	2.25	1.67	1.67	1.02	1.49	1.18	3.10	1.57	1.02	2.04	4.35	1.89	1.42	0.86
max	14.04	19.13	16.36	19.74	18.11	19.27	27.29	6.72	31.48	12.67	31.48	42.29	82.67	38.61	43.78	91.78
Self-employed hourly earnings in 2007																
Obs	375	851	-	553	315	276	1,859	794	660	566	6,249	562	628	3,740	-	12,231
mean	5.71	6.82	-	4.66	5.33	3.88	5.43	2.40	4.62	4.77	4.83	17.44	12.60	13.93	-	14.70
cv	0.95	0.74	-	0.58	0.71	0.81	0.89	0.67	0.82	0.63	0.90	0.88	1.09	0.77	-	0.91
min	0.05	0.07	-	0.26	0.11	0.04	0.09	0.18	0.01	0.07	0.01	0.02	0.45	0.01	-	0.00
max	30.93	27.91	-	17.78	25.26	14.24	28.20	8.70	16.99	17.21	30.93	90.90	110.33	61.06	-	131.08

Table 3. Hourly earnings inequality in CEECs and Western countries EU.

	Gini Index										Average West EU Countries					
	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Average CEECs	Germany	Ireland	Italy	Sweden	Average	West EU Countries
Permanent	0.26	0.21	0.28	0.28	0.29	0.32	0.30	0.26	0.24	0.20	0.26	0.30	0.24	0.21	0.26	0.26
	0.31	0.24	0.26	0.43	0.29	0.35	0.29	0.25	0.25	0.23	0.29	0.30	0.22	0.27	0.27	0.27
	0.47	0.37	—	0.30	0.36	0.43	0.44	0.35	0.43	0.33	0.39	0.44	0.39	—	0.44	0.44
Temporary	3.34	2.69	3.82	3.53	3.90	5.29	4.07	3.30	2.86	2.73	3.55	4.13	2.96	2.52	3.37	3.34
	4.00	3.03	3.59	7.80	3.62	5.50	3.57	3.19	2.73	2.88	3.99	4.60	2.61	3.77	3.34	3.34
	10.56	5.74	—	3.51	5.67	12.17	9.54	5.08	8.67	4.55	7.28	9.60	7.22	—	11.25	11.25
Permanent	1.72	1.55	1.86	1.99	1.88	1.96	1.99	1.95	1.57	1.70	1.82	1.85	1.82	1.58	1.94	1.94
	2.15	1.96	1.79	4.26	1.72	2.19	2.11	1.97	1.91	1.83	2.19	1.91	1.41	1.04	1.79	1.79
	2.83	2.39	—	1.93	2.52	2.42	2.67	2.40	3.08	2.02	2.47	3.13	2.54	—	2.83	2.83
Permanent	1.95	1.73	2.06	1.77	2.07	2.70	2.05	1.69	1.81	1.60	1.94	2.23	1.62	1.60	1.74	1.74
	1.87	1.54	2.00	1.83	2.10	2.51	1.69	1.62	1.43	1.57	1.82	2.40	1.86	3.61	2.01	2.01
	3.73	2.40	—	1.82	2.25	5.05	3.58	2.12	2.82	2.25	2.89	3.06	2.82	—	3.90	3.90

15.34 versus 10.96) and temporary workers find themselves at the bottom of the ranking. These considerations particularly hold for Slovenia, Hungary, Estonia and the Czech Republic, in which temporary workers' wages are higher than the CEECs average and not too far from the corresponding average value for their Western counterparts. However, the picture of within-country differences (absolute advantages) remains variegated: in Slovenia, for example, the permanent/temporary wage gap is large and similar to that recorded in important old EU members (such as Germany, Italy and Ireland); in Hungary, conversely, temporary workers earn on average more than regular (permanent) ones. As far as self-employed earnings are concerned, the gap with permanent wages is negative for all CEECs except Bulgaria; however, for various Eastern countries self-employment earnings are also lower than temporary wages (namely in Hungary, Lithuania, Latvia, Romania and Slovenia).

In the previous section we mentioned that both temporary jobs and self-employment can be analysed as two labour market segments connected to the flexibilisation processes which have been taking place in transition economies in the last 20 years. However, country-specific studies for transition countries reported in the literature (Cazes 2002, Rutkowski *et al.* 2005, Baranowska and Gebel 2008, European Commission 2010) do not clearly reveal the real nature of these groups of workers. More precisely, we do not know whether increased flexibility is a voluntary choice of the jobseekers, who see in labour market deregulation an opportunity to gain higher returns from their human capital investment, or whether it is rather the outcome of *push drivers* that force workers driven out of sectors and firms under restructuring to join low-wages, low-education, low-productivity labour pools. For this reason the discussion of the raw differentials in average hourly earnings presented in Table 2 needs to be complemented with analysis of the earnings distributions presented in Table 3.

The differences that earnings distributions for temporary workers and the self-employed exhibit in the case of CEECs are noteworthy. First of all, overall wage inequality among temporary workers in CEECs is generally larger than in EU Western countries (the Gini index is on average 0.29 versus 0.27; the p90/p10 ratio is 3.99 versus 3.34). With the exception of the Baltic countries, in the rest of the CEECs this overall inequality is the result of a larger wage dispersion at the top of the distribution (p90/p50 ratio) rather than the bottom (p50/p10 ratio), whereas the opposite holds in Western Europe. This would suggest that the conditions of temporary workers in Eastern countries are relatively less associated with low pay and disadvantaged personal and working conditions. This first hint is corroborated by the average characteristics of this category of workers (see Table A.1 in the Appendix), who show: (i) longer experience (13 years in CEECs compared to 11 in Western countries), (ii) greater importance of occupation in industry (31% versus 14%), as managers (2% versus 1%) or craft workers (25% versus 17%), and (iii) higher educational attainment (87% hold secondary or tertiary education in CEECs, compared to 69% in Western EU).

Among the self-employed we find much higher earnings inequality compared with temporary earnings, both in Eastern and Western countries. However, earnings in this category of workers show higher dispersion at the top rather than the bottom of the distribution for Hungary, the Czech Republic, Lithuania and Slovenia, suggesting a prevalence of pull forces. This is supported by the fact that self-employment is particularly high in Industry, but also in Real Estate and Finance and among Professionals and Technicians (Table A.3), sectors and positions typically associated with autonomous high-pay jobs. On the contrary, for other countries (such as Poland, Bulgaria, Latvia and Slovakia) the p50/p10 ratio exceeds the p90/p50 ratio, suggesting that for these large

(and therefore regionally diversified) countries push forces are more strongly at work. In these countries self-employment is indeed especially widespread in agriculture and trade, typically representing a residual choice in the forms of subsistence farming or commercial activity.

To sum up the evidence so far presented, we can say that the overall positive wage gap in the mean levels between permanent workers and other categories, both in Eastern and in Western EU countries, outlines the existence of dual labour markets that might be different in their nature. The different relative gaps and shapes of distributions suggest that distinct drivers may lie behind the permanent / flexible divide in West and Central and Eastern EU countries. The results of the Blinder–Oaxaca decomposition presented in the next section, which isolates the contribution of personal and job characteristics from the contribution of returns, shed further light on this possible dichotomy.

The components of earnings inequality: results

In order to study the determinants of pair-wise hourly earnings differentials between the three categories of workers (P, T, S) we rely, as explained in the methodology, on the preliminary estimation of standard Mincer (1974) equations. As usual in this stream of literature we use, as predictors of (log) earnings: education, experience and its square, and a set of control variables for individual characteristics (age and gender) and for the type of occupation, presence of a second job, firm sector and firm size. Tables A.1–A.3 in the Appendix display the descriptive statistics for these variables; Tables A.4–A.6 present the estimates for the Mincerian equations. It is noteworthy, especially in the case of permanent workers (Table A.5), that nearly all determinants are significant with the expected sign. In particular the wage level in regular employment is largely and positively influenced by gender (male workers earn more everywhere), tertiary education (which generally matters more than experience), managerial and professional occupations, firm size, and sectors such as industry (the omitted sector dummy), finance and transport. For temporary workers (Table A.6) gender and tertiary education also play an important role, along with firm size and the occupations with higher profiles. To some extent surprisingly, employment in certain sectors (especially the low-tech ones) does not play any significant role.

The Blinder–Oaxaca (B–O) decomposition of permanent versus temporary hourly earnings (Table 4) shows that when the determinants listed above are at work the estimated wage gaps are positive and significant for almost all countries.¹¹ Notable exceptions are Estonia and Lithuania, where this difference is not significantly different from zero, and Hungary, in which the gap is in favour of temporary workers. In Poland, Romania and Slovenia we found the highest wage gaps: 0.42 (this means that temporary workers earn 28% less than regular workers), 0.24 (–26%) and 0.39 (–19%), respectively. In the rest of the CEECs, as discussed in the descriptive analysis of the previous section, wage differentials are lower than those in Western Europe. The B–O method allows us to distinguish the role played by characteristics and returns to these characteristics (or other unexplained factors) in shaping the wage differential. It must be noted that the returns are a measure of pay difference all measured characteristics being equal; i.e. they are a proxy for discrimination against workers due to their belonging to one group or the other. In other terms, the output of the B–O decomposition can be interpreted as responding somehow to the questions formulated at the end of the second section of this article. Indeed, when characteristics are more important than returns in explaining wage differentials, dual labour markets can be considered consistent with the earlier institutionalist view (Doering and Piore 1971, Osterman 1982, Piore 1983); should the opposite hold (returns more

Table 4. Blinder–Oaxaca decomposition of the hourly wage gaps (permanent vs temporary workers).

	Bulgaria	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden
Pred.InW (perm)	1.32***	1.85***	1.82***	1.66***	1.65***	1.91***	1.57***	2.63***	2.80***	2.60***	2.75***			
Pred. InW (temp)	1.22***	1.72***	1.82***	1.59***	1.46***	1.49***	1.36***	2.19***	2.52***	2.22***	2.52***			
Difference	0.10**	0.13***	0.01	-0.11***	0.19***	0.42***	0.21***	0.44***	0.27***	0.38***	0.23***			
Charact.	0.21***	0.11***	0.04	0.21***	0.16*	0.38***	0.18***	0.25***	0.19***	0.33***	0.13*			
Sex (male)	-0.01	0.01**	0.00	-0.02	-0.12**	-0.02***	0.00	0.00	0.00	0.03***	0.00			
Experience	0.06*	0.03**	0.01	0.04	0.06	0.07***	0.01	0.12***	0.08*	0.08***	-			
Prim. Educ.	0.08***	0.01***	0.00	0.00*	0.05**	0.01***	0.03	0.01***	0.02	0.02***	-0.06***			
Sec. Educ.	0.00	0.00**	0.00	0.00	0.00	0.01***	0.00	0.02**	0.00	0.00	0.02**			
Ter.Educ.	0.05***	0.02***	0.00	-0.01*	0.05*	0.06***	0.01	0.11***	0.02*	0.02***	-0.05**			
Agriculture	-0.01	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Industry	0.00	0.00	-0.01	0.01**	0.02	-0.01***	0.01	0.00	0.02	0.00	0.05**			
Construction	0.00	0.00	0.01	0.01*	0.02*	-0.03	0.01	-0.02	0.00	0.00	0.01			
Hotels & Rest.	0.01	0.00	-0.01	0.00	0.01	0.02	0.00	0.00	0.01	0.01**	0.00			
Trade	-0.03	0.00	0.00	0.00	-0.01	0.02***	0.00	0.00	0.00	0.01*	0.00			
RE & Finance	0.00	0.00	0.00	0.01	0.00	0.00	-0.02	0.00	0.02	0.00	0.01***			
Transport	0.00	0.00	-0.02	0.01**	-0.01	0.00	0.00	0.00	-0.01	0.00	0.01***			
Pers. S. & PA	0.02*	0.00	-0.04	0.00	-0.03*	0.03**	-0.04**	0.00	-0.03	0.01	-0.01**			
Others	0.04	0.04***	0.11	0.08***	0.17**	0.19***	0.22***	0.19***	0.07**	0.13***	0.14***			
Returns	-0.11	0.02	-0.03	-0.22***	-0.14**	0.04*	0.03	-0.02	0.09	0.19***	0.06**			
Sex (Male)	0.07	-0.01	-0.09	-0.16***	0.16	0.03*	-0.14*	0.00	-0.04	0.04**	0.00			
Experience	0.21	0.11	0.62	-	0.02	0.04*	0.06	0.04	0.02	0.15**	-0.03*			
Prim. Educ.	-0.11**	0.00	0.03	0.01	-0.05	0.00	-0.01	-0.04**	-0.03	0.01	-0.03**			
Sec. Educ.	0.02	-0.01	0.00	0.04**	0.02	0.00	0.07*	-0.05	0.01	0.01	-0.01			
Ter.Educ.	-0.01	0.00	-0.19	-0.06**	0.00	0.00	0.02	-0.01	0.00	0.01	0.00			
Agriculture	0.03	0.00	0.04	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.00			
Industry	-0.03	0.02**	-0.01	0.01*	-0.02	0.04***	0.01	0.02	0.01	0.01	0.00			
Construction	0.00	0.00	-0.08	-0.02*	0.00	-0.01	0.04	0.00	0.02**	0.00	0.00			
Hotels & Rest.	-0.03	0.00	0.00	-0.01**	-0.02	0.00	-0.01	-0.02**	-0.01	-0.02**	0.00			

Table 4 – continued

	Czech Republic												
	Bulgaria	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden
Trade	0.00	0.03	0.00	0.01	0.00	-0.03***	-0.01	0.00	0.01	-0.04**	0.01	-0.00*	0.00
RE & Finance	-0.01	-0.01	0.02**	0.00	0.00	0.00	0.01	0.03	0.01	0.01	0.05	0.00*	0.00
Transport	-0.01	0.06	0.00	0.01	-0.01	0.00	-0.02	0.00	0.01	0.00	0.04*	0.00	0.00
Pers. S. & PA	0.02	-0.03	-0.03	-0.02	-0.01	0.00	0.01	0.00	0.00	0.00	0.08**	-0.05**	-0.14
Others	-0.41	1.48	-0.39***	0.47	0.25	0.30***	0.05	0.41**	0.18	0.23	0.43*	0.23***	0.27
Const	0.13	-0.63	0.37***	-0.64**	-0.35	-0.31***	-0.07	-0.44**	-0.22**	-0.16	-0.52	-0.05	-0.04

Note: *, **, ***: significant at 10, 5 and 1% respectively.

important than characteristics), a duality consistent with wage discrimination due to employment status and two-tier reforms emerges (Boeri and Garibaldi 2007; Belot *et al.* 2007).

Table 4 shows that the contribution of characteristics is 0.38 out of 0.42 in Poland. This means that 90% of the wage gap between permanent and temporary workers is explained by strong asymmetries in the distribution of characteristics: had temporary workers the same characteristics as the regular ones, their wage gap would be reduced by 90%. The remaining distance (0.04 or 10%) should instead be attributed to differences in returns (discrimination): had permanent workers the same returns as the temporary ones (characteristics being equal) they would earn 10% less.

Bearing in mind this interpretation, on the whole the results of Table 4 show that while both in CEECs and in old EU members asymmetries in characteristics play an important role in explaining wage differentials, the importance of returns is remarkably different in the two regions. Discrimination in returns is indeed much higher in Western than in Eastern countries (see also Figures 1 and A.1). Table 4 also provides details of individual attributes that mostly contribute to explaining the wage differentials. As far as the explained part (asymmetries in characteristics) is concerned we can say that beside the important and positive contribution provided by the set of variables termed Others, experience, education and gender play a major role in CEECs. For example, in Poland and Slovenia, had temporary workers a proportion of workers with tertiary education and experience equal to regular workers, their wage gap would be reduced by 0.06 (tertiary education), 0.07 (experience) in Poland, and 0.11 (tertiary education), 0.09 (experience) in Slovenia; in other words the wage gap would be a third lower in Poland and 50% lower in Slovenia. Also for the rest of the CEECs, asymmetries in education are important: in some cases, differences in the proportion of workers with tertiary education are still discriminating (Czech Republic and Slovakia); in others (Bulgaria and Latvia) it is the high proportion of workers with primary education that plays a crucial role (see also Tables A.1 and A.2). Lastly, some variables make non-negligible contributions to returns differentials in Western countries (discrimination-driven gap). For example, in Germany,

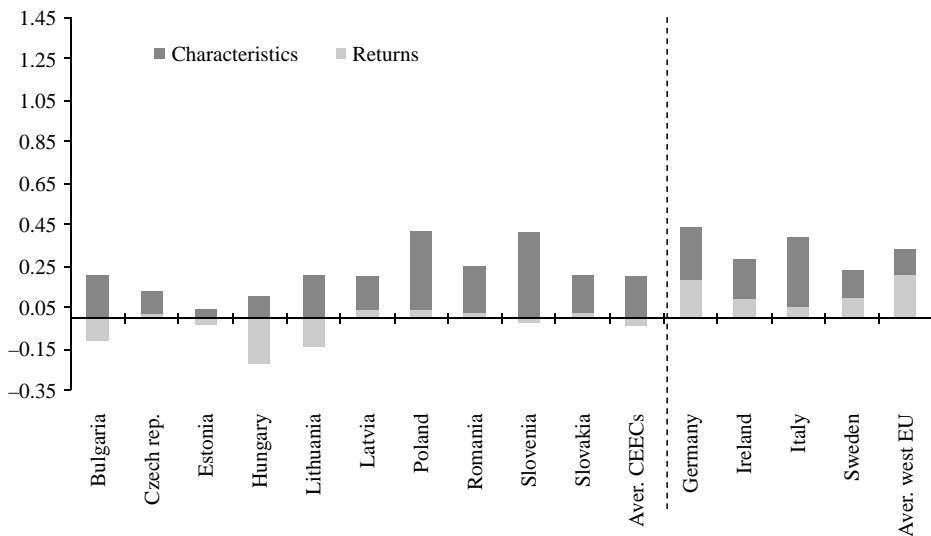


Figure 1. Decomposition of hourly earnings gaps (permanent *versus* temporary).

experience being equal, there is notable discrimination against temporary workers (the coefficient is 0.15), whereas in Italy, the set of Others variable being equal (the coefficient for age, occupation and firm size is 0.23), a similar discrimination holds. As for CEECs, discrimination plays a significant role only in Poland (0.04) and Lithuania and Hungary: in these two cases, however, the discrimination is negative, i.e. in favour of temporary workers.

This evidence somewhat corroborates the conjecture, proposed in the previous sections, about the existence of two types of dual labour markets. Among CEECs it seems that a remarkable asymmetry in the characteristics of workers causes the wage differentials in question, which is consistent with the early institutionalist view. Overall, temporary contracts seem to be a viable alternative to unemployment for women, low-educated and less experienced workers, especially after the reforms that, in many transition economies, reduced the generous unemployment benefits that had been supporting spells of unemployment (Boeri and Terrel 2002, Rutkowski *et al.* 2005). This holds particularly for Poland and Slovenia, for which, according to the Eurostat statistics (see Eurostat on line database), the share of temporary workers in total employment in 2007 exceeded that of Western EU countries, with the exceptions of Spain and Portugal. However, as revealed by the Mincerian equations and the descriptive statistics, temporary jobs are not only a buffer to unemployment but also a segment of the labour market able to recognise and remunerate certain productive attributes of workers (in particular education). In other terms, the existing dualism in CEECs between temporary and permanent jobs largely depends on the fact that workers are endowed with different productive attributes (Figure 1).

Conversely, the segmentation of labour markets in old EU member countries is heavily due to discrimination between permanent and temporary job positions: characteristics being equal, a temporary employee working in Italy, Germany or other EU Western countries earns significantly less than his counterpart with a regular contract. Hence dual labour markets mainly shaped by status in employment and two-tier reforms (Boeri and Garibaldi 2007, Belot *et al.* 2007) seem to emerge.

The East/West difference in labour market duality seems to be even more remarkable in the case of the permanent/self-employment wage gap (Table 5). Figures 2 and A.2 clearly show that, on the whole, the contribution to the differentials due to returns clearly outweighs the effect of workers' and firms' characteristics in Western EU countries. The opposite holds for the Eastern economies: different incidence of males, educated workers and sectors such as agriculture and trade are the main drivers of the self-employed earnings gap compared with permanent workers. Had autonomous workers the same gender and education levels and the same agriculture and trade shares as permanent workers, their wage deficit would be much lower. Thus, in the case of self-employment too, asymmetry in the quality of the labour force and in the intrinsic sector attributes markedly affects the earnings gap in Eastern Europe. This corroborates the idea, mentioned before, of a segment of marginal jobseekers who see in low-pay self-employment (in subsistence farming or small-scale trade) an alternative to unemployment or inactivity. However, as also revealed by the Mincerian estimates (see Table A.6), the highly educated self-employed, those working in Real Estate and Finance or in managerial and professional positions, earn as much as (and even more than) permanent workers: for this segment, self-employment represents an opportunity to attain high returns from their productive attributes by means of autonomous positions in dynamic contexts (European Commission 2010). Again, on the whole, little room exists for pure job position discrimination, as is largely the case in Western EU countries. Of course there are

Table 5. Blinder–Oaxaca decomposition of the hourly earnings gaps (permanent vs self-employed).

	Bulgaria	Czech Republic	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy
Pred.InW (perm)	1.32***	1.85***	1.66***	1.66***	1.65***	1.91***	1.15***	2.42***	1.57***	2.63***	2.80***	2.60***
Pred. lnW (temp)	1.33***	1.69***	1.39***	1.44***	0.92***	1.34***	0.66***	1.14***	1.37***	2.50***	2.09***	2.33***
Difference	-0.01	0.16***	0.27***	0.21***	0.73***	0.57***	0.49***	1.28***	0.19***	0.13***	0.70***	0.27***
Charact.	0.24	0.65***	0.11	0.49***	0.64***	0.09	0.55***	1.42***	0.01	0.15	-0.52***	0.48***
Sex (male)	-0.05**	-0.05**	-0.05***	-0.03**	-0.03	-0.06***	-0.12***	0.07	-0.08***	0.01	-0.03	-0.01
Experience	0.00	-0.04*	-	0.05*	-0.03	0.00	-0.07**	0.00	0.01	-0.04**	-0.06	-0.01
Prim. Educ.	0.02	-0.00*	-0.01**	0.01	0.00	0.01**	0.09***	0.01	0.00**	-0.02***	0.05**	0.02***
Sec. Educ.	-0.01	0.00	0.02**	0.02*	0.04***	0.02***	-0.01	0.04	-0.02	0.00	-0.01	-0.00
Ter.Educ.	0.02*	0.02***	0.05***	0.06***	0.10***	0.07***	0.07***	0.14*	0.07***	-0.07***	0.06***	0.01***
Agriculture	0.08*	0.01**	0.06***	0.16***	0.10	-0.22***	0.02	-0.01	0.00	0.01*	-0.06	0.01
Industry	0.00	0.00	0.01	0.01	-0.02	0.04***	0.04	-0.01	0.00	0.02	0.01	-0.01**
Construction	0.00	0.04***	0.01	-0.01	0.00	0.00*	-0.01	0.03	-0.02	0.00	-0.02	0.01***
Hotels & Rest.	-0.01	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.01	0.00	0.01**
Trade	0.03	0.01*	0.00	0.00	0.00	0.01***	0.00	-0.03	0.01	0.00	-0.03**	0.02**
RE & Finance	0.00	0.00	-0.02*	0.01	0.00	0.00	0.01	0.01	-0.01	0.01	-0.01	0.00
Transport	0.00	0.00	0.00	0.03**	0.00	0.00	0.04**	0.00	0.00	0.00	0.00	0.00*
Pers. S. & PA	0.00	0.20***	-0.03	-0.13	0.73***	-0.02	-0.07	0.06	-0.05	0.05	0.08	0.17***
Others	0.17	0.45***	0.08	0.35*	-0.25	0.23***	0.55***	1.11***	0.09	0.18	-0.50***	0.27***
Returns	-0.25	-0.49***	0.16*	-0.28	0.09	0.48***	-0.05	-0.13	0.18*	-0.02	1.23***	-0.21***
Sex (male)	0.03	-0.08	0.12**	0.10	-0.05	0.15***	0.15**	-0.34*	0.02	-0.20**	0.00	-0.06**
Experience	-0.21	0.21	-	0.24	-0.16	-0.06	0.35***	0.03	0.06	0.07	0.01	-0.08
Prim. Educ.	-0.01	0.00	-0.01	-0.01	-0.03	0.00	-0.10*	0.02	0.00	0.00	-0.03	0.00
Sec. Educ.	-0.02	0.01	-0.02	-0.11	-0.20**	-0.06**	-0.03	-0.07	0.10	0.00	-0.03*	-0.01
Ter.Educ.	0.01	0.01	0.03**	0.01	0.05*	0.00	-0.04*	-0.04	-0.01	0.10**	0.01	0.00
Agriculture	-0.12	-0.02	-0.09***	-0.25**	-0.08	0.47***	0.10	0.00	-0.01	-0.01	0.28**	0.02*
Industry	0.00	0.00	0.00	0.00	0.01	-0.02*	-0.03	0.00	0.03*	0.00	0.00	-0.01***
Construction	0.01	-0.10***	-0.01	0.01	-0.02	-0.02**	-0.01	-0.07	0.05	-0.02	0.00	-0.04***

Table 5 – continued

	Bulgaria	Czech Republic	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy
Hotels & Rest.	0.03*	-0.01	0.01	0.00	-0.05	0.00	0.00	0.01	0.00	0.00	0.00	-0.01
Trade	-0.06	-0.03	0.01	0.03	0.01	-0.02	-0.04**	0.12**	-0.02	0.03	-0.01	-0.03
RE & Finance	-0.01	-0.04	0.02	0.00	-0.04	0.01	0.00	-0.05	-0.01	-0.10*	-0.03*	-0.03***
Transport	0.00	0.00	0.02**	-0.02**	-0.01	-0.02**	-0.01	-0.01	0.00	0.03	0.00	0.00
Pers. S. & PA	-0.01	-0.19***	0.04	0.11	-0.67***	0.06	0.06	-0.04	0.06	-0.02	-0.03	-0.12**
Others	0.35	-0.48	0.70***	0.09	1.57**	-0.62	-0.34*	0.46	-0.06	1.16*	1.46**	0.13
Const	-0.24	0.23	-0.66***	-0.50	-0.24	0.62	-0.13	-0.12	-0.03	-1.05*	-0.40	0.02

Note: *, **, ***: significant at 10, 5 and 1% respectively. Robust standard errors.

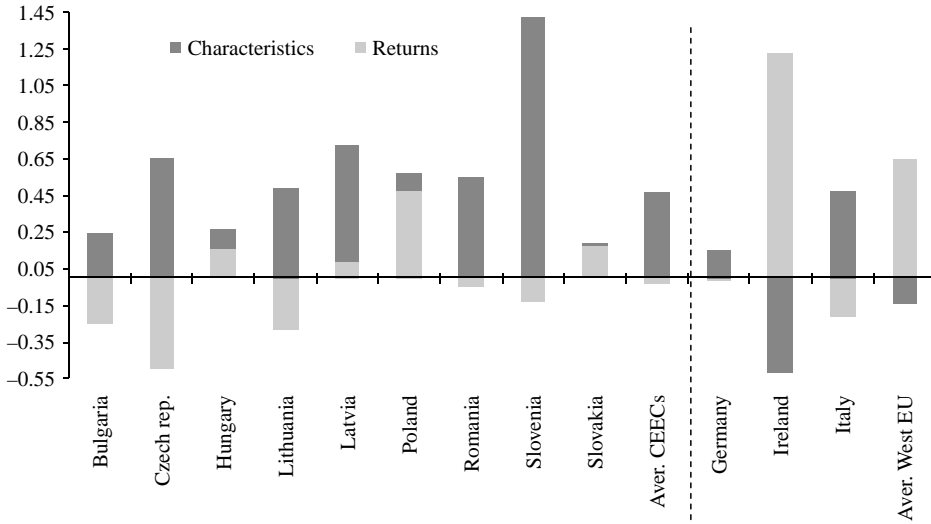


Figure 2. Decomposition of hourly earnings gaps (permanent *versus* self-employment).

important exceptions: for Poland and Slovakia, two countries in which the self-employment proportions are more important (see again Eurostat data in the on line database), discrimination predominates over characteristics. In particular, one notable exception is Poland, which indeed confirms the overall interpretation: 98% of the earnings gap due to discrimination is related to employment in the agricultural sector. This means that, other characteristics being equal and for workers employed in the agricultural sector, the earnings gap between permanent and self-employed is totally explained by discrimination in favour of permanent workers: this clearly confirms that subsistence farming is a buffer to unemployment, especially in disadvantaged and rural areas (in our sample the agricultural sector accounts for 45% of self-employment in Poland).

Considering the literature and theoretical background cited in this article, we wonder at this point what could have been the role of institutions in shaping these results. An extensive literature has emerged in recent years supporting the idea that institutions played a major role in labour market performance and wage inequality in CEECs too (e.g. Feldman 2005, Fialova and Schneider 2008). In particular, Lehmann and Muravyev (2009) report the most recent data on labour market institutions according to the OECD methodology. From these it can be deduced that, at least in 2007, not very large differences in the overall levels of employment protection legislation (EPL) and in the tax wedge on labour between old EU members and CEECs existed. In addition, if we consider regulations on temporary and permanent jobs separately, no notable East/West diversities in the asymmetries between these two areas emerge. Rather, some specific results for CEECs seem puzzling. For example, in Poland and Slovenia, for which we found the largest permanent / temporary wage differential, the difference in EPL in the two segments is much lower than in other CEECs with smaller wage gaps (see OECD, Indicators of Employment Protection).

Therefore, there are probably other labour market institutions that explain wage differentials in the Eastern countries. Again Lehmann and Muravyev (2009) show that remarkable gaps exist between Western countries and CEECs regarding union density, expenditure on active labour market policies and average level and duration of

unemployment benefits. All these features are much more pronounced in the old EU countries. As regards other institutional aspects which more directly impact on earnings dispersion, wage determination processes in CEE countries have rapidly converged, with some notable exceptions such as Slovenia, towards the liberalised models of mature market economies, with little room for centralised bargaining. In these countries, where the private sector has quickly reached a large share and unions' presence is weak, wages are mostly decided at the firm level and linked to productivity (Rutkowski *et al.* 2005). As a result, little institutionally induced wage rigidity exists in CEECs other than minimum wage regulation, which is however set at generally low levels (about 40% of average pay) (Rutkowski *et al.* 2005).

This institutional framework of CEECs, which guarantees lower wage floors than in Western EU countries, probably contributes to enlarging the wage gap between permanent and temporary workers, by lowering the reserve wage and hindering a good employer–employee match in the flows into and out of unemployment. At the same time, the scarcity of resources devoted to active labour market policies, for example programmes to promote start-ups, probably explains the larger gap between permanent workers and self-employed in the CEECs than in Western countries. This statement seems to be corroborated by the recent evidence provided by Millàn *et al.* (2010), who show how in Europe entering self-employment from unemployment negatively affects the probability of surviving as self-employed. However, this negative effect is largely mitigated by expenditure on start-up subsidies, which greatly decrease the risk of succumbing especially when the new self-employed come from unemployment.

Final remarks

The B–O decomposition technique basically confirmed the existence of duality of labour markets in both Central–Eastern and Western Europe, with a wage gap generally in favour of permanent workers. However, although country specificities in the two regions also emerge, the factors behind the two dualisms in the labour markets are quite different, and this represents a sort of East/West dichotomy.

In the CEECs earnings differentials are largely driven by differences in workers' and employment sectors characteristics; in other terms, the fact that temporary workers and self-employed earn on average less than permanent workers mainly depends on their lower average education and experience level and on the fact that they are more intensively employed in certain sectors (in particular agriculture and trade). This means that the dualism is underpinned by productive attributes of the workers and intrinsic sectoral features, which mainly comprise a relatively low-productivity environment reflected in lower average earnings for temporary and self-employed. This also means that different personal, social and structural factors drive the behaviour of employer and employees, which induces a segmentation of labour markets consistent with the earlier institutionalist view formulated by Doeringer, Piore and Osterman in the 1970s and 1980s. On the basis of the results of the B–O decomposition, we conjectured that some labour market institutions seem to reinforce the asymmetries in the distribution of characteristics which explain the wage gaps. In particular we refer to the low expenditure on active labour market policies, the low levels of average unemployment benefits, their shorter duration, the weak collective bargaining and low minimum wage provisions.

This broad picture should also be placed in the more complex framework of still ongoing important structural evolution in the CEECs, on both the labour demand and supply sides. The current economic crisis will influence the timing of the adjustment but some

general evolution can be expected in the future. On the labour demand side, the industry structure adjustment still under completion will sooner or later evolve towards a more high-skill intensity model, at least as a physiological consequence of CEECs' overall income convergence patterns. These will bring about a restriction of the still oversized agricultural sector and growth of more dynamic sectors (or dynamic segments of traditional sectors, such as high-tech manufacturing), also fed by the increase in internal demand due to higher incomes. This will also gradually lead to a (at least partial) re-absorption of labour market imbalances and a draining of unemployment pools from which low-pay insecure job positions are largely drawn. At the same time, on the labour supply side, the adjustment towards higher education levels will move forward. These developments would clearly impact on the CEECs' duality described above, since they will alter its main drivers (education levels and sectoral structure). In which direction the duality will evolve would depend on the relative strength of the changes (especially on the race between high-skilled labour demand and supply) and on the labour market policies and institutions which will accompany them. Lessons from Western countries may be instructive.

In Western EU countries the duality between permanent and low-pay insecure jobs is to a remarkable extent related to discrimination: personal and production conditions being equal, temporary and self-employed workers earn less than permanent workers because they are temporary and self-employed. As regards temporary workers, both Boeri and Garibaldi (2007) and Belot *et al.* (2007) provide convincing explanations based on the low productivity–low wage trap, induced by the status of temporary employees and related to the two-tier reforms of the labour market. To briefly sum up, in a context of low investment and decreasing marginal returns, the deregulation of temporary contracts boosts employment in the short term and lowers average labour productivity, depressing wages. At the same time, the low productivity–low wage trap may be caused by the impossibility for temporary workers to build firm-specific competences which improve their productivity. These considerations suggest that asymmetries in the EPL (temporary versus permanent) may play a crucial role in explaining the wage gaps based on discrimination. However, the Western context which is at the heart of this duality is notably different from Eastern EU countries: structural adjustments on the labour demand side are slow; various countries (in particular some Mediterranean economies) seem unable to reduce their intensity of low-tech sectors or low-tech industry segments; various countries are characterised by an excess of highly educated workers, others (e.g. Italy) by a mismatch between the type of high education demanded and supplied. These features, probably exacerbated by the crisis, are the structural drivers of the duality evidenced, which is much worse than that in the CEECs based on productive characteristics, since a dualism based largely on discrimination entails both inefficiency (productive forces are underemployed, such as educated workers in certain sectors or occupations) and inequity (difference in wage levels not justified by productive attributes). Careful consideration should be given by CEEC policy makers, accompanying the completion of their structural evolution, to the variety of experience and the consequences of institutional implementation in the West in order to reduce the probability of reinforcing marginalised insecure labour pools and the consequent permanent efficiency and equity deficits.

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Notes

1. Owing to intrinsic characteristics of macro sectors in terms of internal differentiation and institutional settings (e.g. the presence of unions and the coverage of collective bargaining) a decline in industry is expected to foster inequality (Gustafsson and Johanson 1999); a similar effect is produced by a growing service sector (Ferreira 1999). A decline in agriculture should instead produce a reduction of inequality via the between-sector component.
2. Another stream of the literature focuses on the perceived impact of transition (see Hölscher 2009), which is related to income and wealth distribution. A survey carried out by the EBRD and the World Bank in 2006 (EBRD 2007) shows that in all transition countries a majority of respondents considered that their relative position compared with 1989 had deteriorated, in spite of the growth rates experienced in most of the countries. Levels of unhappiness in Eastern Europe are in general greater than in Western Europe and North America, and particularly high in South-Eastern Europe and parts of the Commonwealth of Independent States (CIS).
3. A review of the extensive literature on these aspects is clearly beyond the scope of this article. Useful references can be found in Paci (2002) for gender wage inequality, Orłowski and Riphahn (2009) for age wage structure, Munich *et al.* (2005) for education wage premia and Du Caju *et al.* (2010) for sector and firm characteristics.
4. Examples of country-specific studies on wage inequality in transition are Keane and Prasad (2006) for Poland; Večerník (2001) for the Czech Republic; Giddings (2002) for Bulgaria; Smith (2001) for Estonia; Kohn and Antonczyk (2011) for East Germany; and Krstić and Reilly (2007) for Serbia.
5. A related third crucial dimension of flexibility is of course the expansion of the informal sector, which typically attracts low-skilled and low-experienced workers. In CEE countries the rise in informal activity is associated with high taxes and strict regulations in product and labour markets. In low-income transition countries the informal economy has also been widely associated with an extensive rural sector. For a focus on these aspects see Bernabè (2002, 2008) and the literature cited therein.
6. Rutkowski *et al.* (2005) report that CEE employment protection legislation is stricter than the OECD average, especially due to stronger effective enforcement; in former Soviet Union and Balkan countries the EPL is formally more rigid but poorly enforced owing to the relatively weaker role of unions and to the incentive and ability of firms to circumvent overly strict *de jure* regulations.
7. Country-specific studies on self-employment have been published in the 2010 European Employment Observatory Review 2010 and can be accessed at: <http://www.eu-employment-observatory.net/en/documents/EEORreviews.aspx>.
8. The distinction between self-employed and employees is provided in variable PL040 (*Status in employment*); variable PL140 (*Type of contract*) specifies whether the employed worker has a permanent or a temporary position.
9. A more detailed description of this variable is in European Commission, 2010, EU-SILC Guidelines 2008 (Version January 2010). Monetary values are reported by respondents and it is therefore not possible to know whether they included 'envelope wages', which can be important in Eastern countries (Williams 2008). As a gross measure, income includes the social contributions and income taxes payable by employees. The use of gross wages is common in the literature considering wage and earnings inequality within countries (e.g. Salverda and Mayhew 2009, Antonczyk *et al.* 2010). In our case its use is also motivated by the fact that data on net incomes are not available for Hungary and the Slovak Republic nor for Germany, the Netherlands and Finland. Brandolini *et al.* (2011) explain fully why the use of gross wages is, in fact, the only alternative when EU-SILC data are concerned.
10. This variable does not include any forms of capital income. The difficulties in defining self-employment are well known. The guidelines accompanying the EU-SILC dataset provide all necessary details of the data used here.
11. The BO decomposition does not provide identical results (Jann 2008, Elder *et al.* 2010) if we choose temporary workers as the benchmark and reverse Equation (6). In our case, the differences are not remarkable and outcomes (available upon request) confirm the evidence presented here.

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Appendix

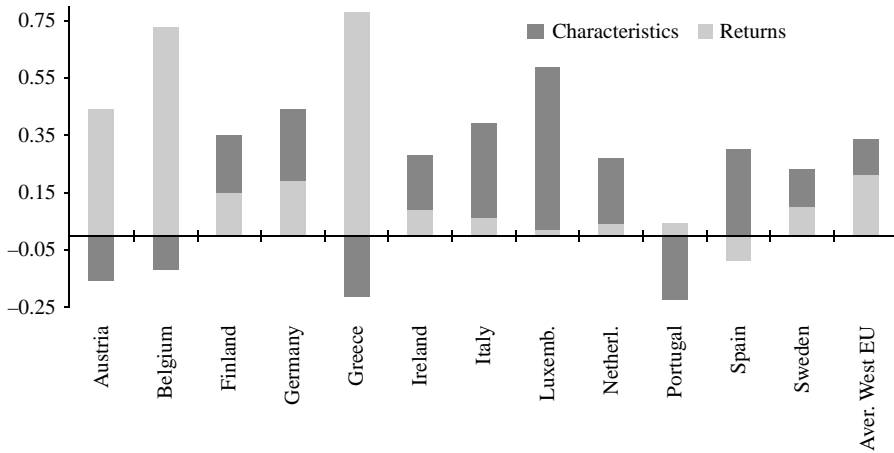


Figure A.1. Decomposition of hourly earnings gaps (permanent *versus* temporary), Western EU countries.

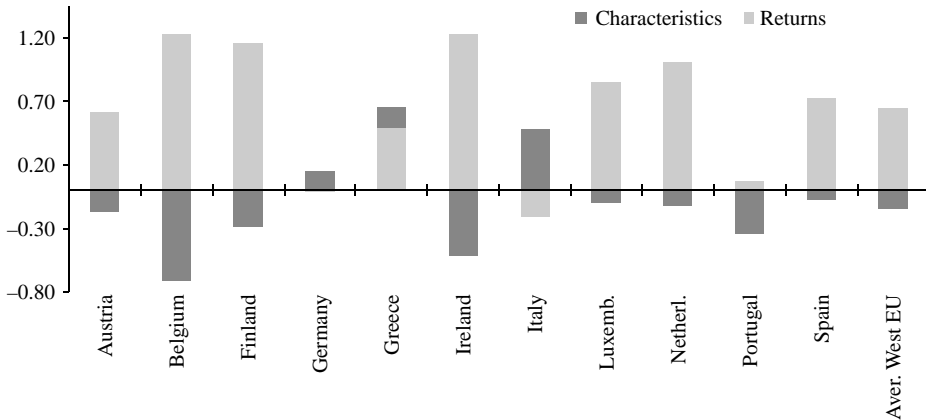


Figure A.2. Decomposition of hourly earnings gaps (permanent *versus* self-employment), Western EU countries.

Table A.1. Characteristics of permanent workers (means) in the sample.

	Czech										Average CEECs					Average West EU Countries		
	Bulgaria	Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden				
Sex (male)	0.51	0.48	0.45	0.52	0.49	0.48	0.50	0.49	0.43	0.53	0.50	0.57	0.59	0.65			0.58	
Age	39.78	41.52	40.82	40.09	41.76	41.66	39.80	37.33	40.08	42.41	39.85	40.54	42.03	40.59			40.92	
Experience	17.65	20.51	19.21	-	20.40	20.74	17.68	15.51	18.97	21.54	18.10	21.73	19.17	18.82			20.40	
Second job	0.10	0.19	0.42	0.10	0.05	0.14	0.06	0.35	0.54	0.13	0.16	0.13	0.02	0.23			0.12	
Firm size (>10 employees)	0.87	0.85	0.84	0.76	0.89	0.80	0.64	0.91	0.82	0.67	0.77	0.85	0.75	0.70			0.79	
Sectors																		
Agriculture	0.04	0.04	0.02	0.03	0.04	0.04	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.02			0.01	
Industry	0.39	0.30	0.19	0.25	0.25	0.17	0.27	0.28	0.26	0.23	0.27	0.24	0.13	0.28			0.23	
Construction	0.02	0.07	0.09	0.06	0.08	0.10	0.07	0.08	0.06	0.06	0.07	0.06	0.10	0.07			0.07	
Hotels & Rest.	0.05	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.03	0.02	0.07	0.03			0.03	
Trade	0.15	0.11	0.11	0.12	0.15	0.16	0.11	0.16	0.12	0.10	0.13	0.17	0.17	0.11			0.15	
R. Estate & Finance	0.07	0.07	0.09	0.08	0.08	0.09	0.08	0.07	0.11	0.06	0.08	0.14	0.20	0.10			0.13	
Transport	0.08	0.08	0.07	0.08	0.08	0.09	0.07	0.11	0.06	0.06	0.08	0.07	0.06	0.06			0.07	
Pers. Serv. & PA	0.20	0.31	0.40	0.35	0.30	0.31	0.37	0.26	0.36	0.44	0.33	0.28	0.26	0.33			0.30	
Occupation																		
Managers & Senior Officials	0.04	0.04	0.15	0.10	0.08	0.06	0.08	0.02	0.03	0.04	0.06	0.04	0.15	0.02			0.04	
Professionals & Technicians	0.26	0.39	0.37	0.32	0.35	0.40	0.40	0.39	0.50	0.49	0.38	0.36	0.29	0.40			0.36	
Clerks	0.22	0.18	0.16	0.20	0.14	0.16	0.16	0.18	0.18	0.16	0.18	0.30	0.31	0.24			0.28	
Skilled Agricultural & Craft Workers	0.19	0.19	0.14	0.18	0.19	0.17	0.17	0.21	0.11	0.13	0.18	0.17	0.11	0.17			0.16	
Machine Operators	0.17	0.11	0.12	0.12	0.12	0.10	0.11	0.13	0.12	0.10	0.12	0.07	0.05	0.11			0.08	
Elementary Occupations	0.12	0.08	0.06	0.09	0.12	0.11	0.08	0.07	0.06	0.08	0.08	0.06	0.09	0.06			0.08	

Table A.1 – *continued*

	Czech		Average CEECs										Average West EU Countries			
	Bulgaria	Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden		
Education																
Primary Education	0.11	0.04	0.07	0.10	0.04	0.12	0.04	0.09	0.11	0.02	0.06	0.09	0.25	0.32	0.09	0.22
Secondary Education	0.62	0.74	0.43	0.60	0.60	0.52	0.56	0.66	0.50	0.59	0.61	0.73	0.37	0.50	0.54	0.53
Tertiary Education	0.27	0.22	0.50	0.31	0.36	0.36	0.40	0.25	0.39	0.39	0.33	0.18	0.39	0.18	0.37	0.25

Note: Except for age and experience, mean values for categorical variables correspond to the proportion of workers with the specific characteristic.

Table A.2. Characteristics of temporary workers (means) in the sample.

	Czech										Average CEECs					Average West EU Countries	
	Bulgaria	Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden			
Sex (male)	0.52	0.45	0.52	0.64	0.55	0.77	0.60	0.62	0.47	0.51	0.58	0.47	0.37	0.19	0.47	0.47	
Age	39.83	40.95	37.71	41.09	37.04	36.95	34.60	34.92	33.74	36.11	36.03	37.24	33.23	37.48	47.07	35.55	
Experience	15.92	20.33	15.96	-	15.87	16.70	12.26	11.74	11.51	15.76	13.49	13.58	14.57	10.49	-	11.80	
Second job	0.19	0.13	0.43	0.04	0.07	0.07	0.05	0.29	0.49	0.10	0.08	0.09	0.03	0.18	0.02	0.08	
Firm size (> 10 employees)	0.84	0.82	0.75	0.75	0.78	0.73	0.58	0.83	0.78	0.61	0.64	0.73	0.64	0.52	0.26	0.62	
Sectors																	
Agriculture	0.10	0.02	0.06	0.03	0.08	0.09	0.03	0.04	0.00	0.04	0.03	0.02	0.00	0.11	0.00	0.05	
Industry	0.37	0.27	0.14	0.19	0.36	0.06	0.33	0.21	0.31	0.31	0.31	0.19	0.07	0.15	0.06	0.14	
Construction	0.01	0.08	0.25	0.09	0.06	0.31	0.17	0.19	0.05	0.10	0.15	0.06	0.10	0.07	0.02	0.11	
Hotels & Rest.	0.14	0.05	0.01	0.05	0.07	0.06	0.03	0.03	0.06	0.06	0.04	0.06	0.09	0.04	0.03	0.06	
Trade	0.08	0.13	0.10	0.10	0.10	0.10	0.18	0.24	0.16	0.15	0.16	0.19	0.21	0.08	0.06	0.11	
R. Estate & Finance	0.11	0.08	0.06	0.07	0.03	0.12	0.10	0.06	0.22	0.08	0.09	0.13	0.16	0.07	0.10	0.09	
Transport	0.06	0.05	0.14	0.05	0.10	0.17	0.06	0.12	0.05	0.07	0.06	0.06	0.08	0.04	0.03	0.05	
Pers. Serv. & PA	0.13	0.31	0.26	0.42	0.20	0.09	0.10	0.11	0.15	0.20	0.15	0.30	0.29	0.44	0.69	0.39	
Occupation																	
Managers & Senior Officials	0.02	0.02	0.11	0.03	0.03	0.02	0.02	0.01	0.02	0.04	0.02	0.02	0.06	0.01	0.00	0.01	
Professionals & Technicians	0.12	0.20	0.41	0.37	0.22	0.19	0.17	0.14	0.23	0.21	0.19	0.42	0.28	0.38	0.31	0.38	
Clerks	0.30	0.38	0.05	0.20	0.18	0.15	0.26	0.20	0.30	0.28	0.26	0.26	0.37	0.18	0.56	0.23	
Skilled Agricultural & Craft Workers	0.27	0.18	0.31	0.17	0.23	0.30	0.27	0.31	0.12	0.19	0.25	0.14	0.15	0.14	0.05	0.17	
Machine Operators	0.08	0.11	0.06	0.13	0.17	0.10	0.15	0.06	0.15	0.15	0.14	0.05	0.06	0.06	0.04	0.05	
Elementary Occupations	0.22	0.11	0.06	0.11	0.16	0.25	0.13	0.29	0.19	0.12	0.14	0.11	0.08	0.23	0.04	0.15	

Table A.2 – *continued*

	Czech Republic		Average CEECs								Average West EU Countries			
	Bulgaria	0.07	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden
Education														
Primary Education	0.36	0.07	0.10	0.14	0.06	0.29	0.11	0.32	0.20	0.05	0.12	0.29	0.40	0.21
Secondary Education	0.54	0.80	0.43	0.50	0.66	0.54	0.74	0.63	0.62	0.78	0.71	0.42	0.51	0.65
Tertiary Education	0.10	0.13	0.47	0.35	0.28	0.17	0.15	0.04	0.19	0.16	0.16	0.30	0.09	0.13

Note: Except for age and experience, mean values for categorical variables correspond to the proportion of workers with the specific characteristic.

Table A.3. Characteristics of self-employed (means) in the sample.

	Czech										Average CEECs					Average West EU Countries		
	Bulgaria	Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden				
Sex (male)	0.67	0.79	0.78	0.70	0.58	0.69	0.70	0.85	0.78	0.79	0.74	0.88	0.76	0.81			0.69	
Age	42.93	42.69	43.88	44.05	43.55	42.90	43.20	46.67	43.21	40.83	44.00	48.74	43.82	43.59			45.70	
Experience	18.15	22.39	22.87	-	19.00	21.83	21.19	22.82	21.22	20.77	21.49	30.14	19.78	-			22.69	
Second job	0.26	0.02	0.43	0.05	0.07	0.29	0.04	0.05	0.11	0.03	0.06	0.03	0.07	0.20			0.04	
Firm size (> 10 employees)	0.21	0.08	0.19	0.06	0.09	0.24	0.05	0.15	0.04	0.17	0.10	0.05	0.13	0.24			0.14	
Sectors																		
Agriculture	0.23	0.07	0.14	0.15	0.35	0.28	0.45	0.59	0.21	0.04	0.39	0.35	0.09	0.06			0.12	
Industry	0.23	0.16	0.14	0.11	0.14	0.10	0.08	0.04	0.18	0.21	0.10	0.07	0.17	0.15			0.11	
Construction	0.03	0.25	0.17	0.17	0.14	0.17	0.10	0.15	0.16	0.29	0.14	0.21	0.13	0.11			0.14	
Hotels & Rest.	0.07	0.06	0.03	0.04	0.03	0.03	0.02	0.01	0.05	0.03	0.03	0.03	0.06	0.05			0.06	
Trade	0.28	0.18	0.17	0.23	0.29	0.20	0.17	0.15	0.16	0.18	0.18	0.10	0.28	0.16			0.21	
R. Estate & Finance	0.07	0.22	0.18	0.19	0.04	0.12	0.11	0.01	0.16	0.17	0.10	0.14	0.19	0.32			0.19	
Transport	0.05	0.05	0.17	0.09	0.02	0.08	0.07	0.05	0.08	0.06	0.06	0.06	0.05	0.08			0.06	
Pers. Serv. & PA	0.03	0.02	0.01	0.02	0.00	0.02	0.01	0.00	0.01	0.02	0.01	0.05	0.02	0.07			0.11	
Occupation																		
Managers & Senior Officials	0.28	0.08	0.39	0.12	0.23	0.40	0.16	0.06	0.12	0.10	0.13	0.52	0.27	0.17			0.22	
Professionals & Technicians	0.08	0.28	0.12	0.20	0.06	0.16	0.13	0.02	0.19	0.25	0.12	0.14	0.25	0.36			0.32	
Clerks	0.12	0.16	0.10	0.23	0.14	0.04	0.09	0.05	0.12	0.12	0.10	0.04	0.08	0.10			0.08	
Skilled Agricultural & Craft Workers	0.31	0.43	0.28	0.36	0.55	0.24	0.55	0.68	0.41	0.45	0.53	0.20	0.30	0.25			0.29	
Machine Operators	0.08	0.04	0.10	0.08	0.01	0.02	0.06	0.02	0.13	0.06	0.05	0.07	0.04	0.11			0.05	
Elementary Occupations	0.12	0.01	0.01	0.01	0.01	0.15	0.01	0.16	0.02	0.03	0.06	0.03	0.06	0.00			0.04	

Table A.3 – continued

	Czech		Average CEECs										Average West EU Countries		
	Bulgaria	Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden	
Education															
Primary Education	0.24	0.03	0.05	0.06	0.10	0.10	0.11	0.46	0.18	0.01	0.20	0.03	0.44	0.43	0.16
Secondary Education	0.56	0.82	0.55	0.71	0.68	0.63	0.72	0.50	0.70	0.84	0.66	0.64	0.31	0.42	0.59
Tertiary Education	0.20	0.16	0.40	0.23	0.22	0.27	0.17	0.03	0.12	0.16	0.14	0.32	0.24	0.15	0.25
															0.27

Note: Except for age and experience, mean values for categorical variables correspond to the proportion of workers with the specific characteristic.

Table A.4. Wage equations results for permanent workers (dependent variable: log hourly wage).

	Bulgaria	Czech.R.	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden
Obs	3154	7944	5537	6762	4758	5324	8974	5252	3619	6728	9033	2788	12326	2887
Sex (Male)	0.24*** (0.02)	0.23*** (0.01)	0.35*** (0.02)	0.13*** (0.01)	0.23*** (0.02)	0.25*** (0.02)	0.17*** (0.01)	0.20*** (0.01)	0.10*** (0.02)	0.26*** (0.01)	0.14*** (0.01)	0.10*** (0.03)	0.10*** (0.01)	0.06** (0.02)
Exp	0.02*** (0.00)	0.02*** (0.00)	0.03*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.03*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.01** (0.00)	0.04*** (0.00)	0.03*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
Exp-square	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Sec. Educ.	0.07** (0.03)	0.08*** (0.02)	-0.01 (0.03)	0.11*** (0.02)	0.01 (0.04)	0.10*** (0.03)	0.08*** (0.03)	0.11*** (0.02)	0.17*** (0.02)	0.10*** (0.03)	0.27*** (0.02)	0.16*** (0.03)	0.12*** (0.01)	0.06* (0.03)
Ter. Educ.	0.31*** (0.04)	0.36*** (0.02)	0.31*** (0.04)	0.51*** (0.03)	0.31*** (0.05)	0.44*** (0.04)	0.40*** (0.04)	0.26*** (0.03)	0.52*** (0.03)	0.27*** (0.03)	0.57*** (0.03)	0.39*** (0.04)	0.31*** (0.01)	0.13*** (0.04)
Agriculture	-0.17*** (0.04)	-0.13*** (0.02)	-0.03 (0.04)	-0.17*** (0.03)	-0.15** (0.06)	-0.20*** (0.05)	-0.10** (0.05)	-0.18*** (0.05)	0.10* (0.06)	-0.13*** (0.03)	-0.36*** (0.05)	-0.28** (0.13)	-0.26*** (0.04)	0.06 (0.06)
Construction	0.05 (0.06)	-0.04** (0.02)	0.16*** (0.03)	-0.10*** (0.03)	0.20*** (0.04)	0.09** (0.04)	-0.10*** (0.03)	0.04 (0.03)	-0.02 (0.03)	-0.04* (0.02)	-0.10*** (0.02)	0.05 (0.04)	-0.03** (0.03)	-0.03 (0.04)
Hotels & Rest.	-0.06 (0.05)	-0.12*** (0.03)	-0.01 (0.05)	-0.08** (0.03)	-0.16** (0.07)	-0.16*** (0.05)	-0.15*** (0.05)	-0.21*** (0.05)	-0.07* (0.04)	-0.16*** (0.03)	-0.46*** (0.05)	-0.24*** (0.04)	-0.17*** (0.03)	-0.41*** (0.10)
Trade	-0.14*** (0.03)	-0.09*** (0.02)	-0.03 (0.03)	-0.11*** (0.02)	-0.08* (0.04)	-0.09*** (0.03)	-0.21*** (0.02)	-0.04 (0.02)	-0.03 (0.03)	-0.07*** (0.02)	-0.22*** (0.02)	-0.15*** (0.04)	-0.07*** (0.01)	-0.08** (0.04)
RE & Finance	-0.02 (0.05)	0.07*** (0.02)	0.11*** (0.03)	0.04 (0.03)	0.05 (0.04)	0.04 (0.04)	-0.08*** (0.03)	0.06** (0.03)	0.07** (0.03)	0.04* (0.02)	-0.01 (0.02)	0.04 (0.04)	0.05*** (0.02)	-0.07* (0.04)
Transport	-0.08** (0.04)	0.04** (0.02)	0.14*** (0.03)	0.05** (0.02)	0.02 (0.04)	0.10*** (0.04)	-0.03 (0.02)	0.06** (0.02)	0.05 (0.03)	0.04* (0.02)	-0.15*** (0.02)	-0.11** (0.05)	0.06*** (0.02)	-0.06 (0.04)
Pers.S. & PA	-0.13*** (0.03)	-0.06*** (0.01)	0.09*** (0.02)	-0.01 (0.02)	-0.06** (0.03)	0.06** (0.03)	0.05** (0.02)	-0.06*** (0.02)	0.05** (0.02)	-0.03** (0.01)	-0.04*** (0.01)	0.14*** (0.03)	0.10*** (0.01)	-0.06* (0.03)
Others														
Age	-0.01** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	0.01*** (0.00)	-0.01* (0.00)	-0.02*** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.01*** (0.00)	0.00 (0.00)	0.01*** (0.00)	0.01*** (0.00)
Second job	-0.09*** (0.03)	0.03*** (0.01)	-0.06*** (0.01)	0.12*** (0.01)	-0.16*** (0.05)	-0.02 (0.02)	-0.02 (0.02)	0.05*** (0.02)	0.00 (0.01)	-0.03*** (0.01)	-0.07*** (0.01)	-0.09 (0.07)	-0.02* (0.01)	-0.04 (0.03)
Firm size	0.17*** (0.03)	0.11*** (0.01)	0.00 (0.02)	0.17*** (0.01)	0.28*** (0.04)	0.16*** (0.02)	0.05*** (0.01)	0.15*** (0.02)	0.17*** (0.02)	0.05*** (0.01)	0.21*** (0.02)	0.14*** (0.03)	0.15*** (0.01)	0.07** (0.03)
M & SO	0.40*** (0.06)	0.53*** (0.03)	0.60*** (0.03)	0.69*** (0.02)	0.75*** (0.05)	0.64*** (0.05)	0.42*** (0.04)	0.71*** (0.06)	0.48*** (0.06)	0.54*** (0.03)	0.40*** (0.04)	0.34*** (0.05)	0.35*** (0.04)	0.63*** (0.08)
P & T	0.30*** (0.04)	0.48*** (0.01)	0.39*** (0.03)	0.38*** (0.02)	0.62*** (0.03)	0.54*** (0.03)	0.64*** (0.02)	0.54*** (0.03)	0.42*** (0.03)	0.43*** (0.02)	0.39*** (0.03)	0.33*** (0.04)	0.38*** (0.02)	0.29*** (0.07)

Table A.4 – continued

	Bulgaria	Czech.R.	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden
Clerks	0.18*** (0.03)	0.35*** (0.02)	0.30*** (0.03)	0.25*** (0.02)	0.32*** (0.04)	0.24*** (0.03)	0.27*** (0.02)	0.23*** (0.03)	0.22*** (0.03)	0.29*** (0.02)	0.26*** (0.03)	0.09** (0.04)	0.26*** (0.02)	0.23*** (0.07)
SA & CW	0.19*** (0.03)	0.26*** (0.02)	0.29*** (0.04)	0.19*** (0.02)	0.39*** (0.04)	0.25*** (0.04)	0.25*** (0.02)	0.13*** (0.03)	0.16*** (0.03)	0.25*** (0.02)	0.14*** (0.03)	0.12*** (0.04)	0.14*** (0.02)	0.09 (0.08)
MO	0.13*** (0.03)	0.22*** (0.02)	0.25*** (0.03)	0.18*** (0.02)	0.38*** (0.04)	0.23*** (0.04)	0.28*** (0.03)	0.14*** (0.03)	0.08** (0.03)	0.25*** (0.02)	0.11*** (0.03)	0.09* (0.05)	0.18*** (0.02)	0.07 (0.07)
Const	0.83*** (0.08)	1.17*** (0.04)	1.14*** (0.07)	0.72*** (0.03)	0.75*** (0.10)	1.17*** (0.07)	0.91*** (0.05)	0.24*** (0.05)	1.43*** (0.08)	0.76*** (0.05)	1.20*** (0.05)	1.82*** (0.08)	1.58*** (0.03)	1.84*** (0.09)
Adj. R-square	0.23	0.44	0.41	0.51	0.38	0.38	0.42	0.35	0.54	0.41	0.43	0.48	0.47	0.21

Note: Robust standard errors in parentheses.

Table A.5. Wage equations results for temporary workers (dependent variable: log hourly wage).

	Bulgaria	Czech.R.	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden	
<i>Obs</i>	194	1038	29	698	132	135	2375	114	352	613	540	150	2095	622	
<i>Sex (male)</i>	0.12 (0.09)	0.26*** (0.03)	0.53* (0.28)	0.31*** (0.04)	0.13 (0.12)	0.10 (0.15)	0.13*** (0.03)	0.39*** (0.10)	0.05* (0.05)	0.18*** (0.03)	0.14** (0.06)	0.22* (0.11)	0.07** (0.03)	0.07** (0.10)	0.12 (0.10)
<i>Exp</i>	0.01 (0.02)	0.02*** (0.01)	0.03 (0.06)	- (0.06)	0.01 (0.02)	0.03 (0.02)	0.01*** (0.00)	0.00 (0.02)	0.01 (0.01)	0.00 (0.01)	0.02 (0.01)	0.02* (0.01)	0.03*** (0.00)	0.03*** (0.00)	- (0.00)
<i>Exp-square</i>	0.00 (0.00)	-0.00*** (0.00)	0.00 (0.00)	- (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00* (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00*** (0.00)	- (0.00)	- (0.00)
<i>Sec. Educ.</i>	-0.15 (0.10)	0.08* (0.05)	0.42 (0.56)	0.08 (0.06)	0.07 (0.14)	-0.12 (0.12)	0.06* (0.03)	-0.01 (0.10)	0.07 (0.06)	0.15** (0.07)	0.28*** (0.07)	0.01 (0.13)	0.08** (0.03)	- (0.14)	0.86*** (0.14)
<i>Ter. Educ.</i>	0.02 (0.16)	0.32*** (0.08)	1.15 (0.78)	0.69*** (0.12)	0.52*** (0.17)	0.31 (0.20)	0.34*** (0.05)	0.35* (0.19)	0.14 (0.13)	0.39*** (0.09)	0.54*** (0.09)	0.31* (0.16)	0.19*** (0.06)	0.19*** (0.14)	0.96*** (0.14)
<i>Agriculture</i>	-0.43*** (0.13)	-0.03 (0.07)	-0.54 (0.50)	0.03 (0.08)	-0.22 (0.15)	-0.27 (0.23)	-0.05 (0.06)	-0.24 (0.16)	0.26 (0.42)	-0.1 (0.09)	-0.32*** (0.16)	1.25*** (0.36)	-0.19*** (0.06)	0.48*** (0.18)	0.00 (0.18)
<i>Construction</i>	-0.24 (0.17)	0.07 (0.05)	0.25 (0.39)	0.12 (0.08)	-0.15 (0.16)	0.22 (0.20)	0.03 (0.03)	-0.03 (0.14)	-0.03 (0.09)	0.04 (0.06)	-0.33*** (0.11)	0.09 (0.18)	-0.10** (0.05)	0.00 (0.35)	0.00 (0.28)
<i>Hotels & Rest.</i>	-0.01 (0.17)	-0.04 (0.08)	-0.04 (0.33)	0.22** (0.10)	-0.01 (0.33)	0.49* (0.28)	-0.09 (0.06)	-0.07 (0.16)	0.10 (0.09)	0.06 (0.07)	-0.27* (0.14)	0.10 (0.23)	-0.15** (0.06)	0.21 (0.15)	-0.10 (0.15)
<i>Trade</i>	0.08 (0.25)	-0.05 (0.05)	-0.39 (0.64)	0.04 (0.07)	-0.22 (0.22)	0.15 (0.30)	0.02 (0.04)	0.06 (0.20)	0.02 (0.09)	0.02 (0.06)	-0.04 (0.08)	0.01 (0.18)	-0.01 (0.05)	-0.10 (0.15)	-0.04 (0.15)
<i>RE & Finance</i>	-0.04 (0.15)	0.06 (0.07)	0.28 (0.48)	-0.24** (0.11)	0.07 (0.22)	0.22 (0.35)	0.03 (0.05)	-0.06 (0.18)	0.04 (0.09)	0.02 (0.07)	-0.02 (0.09)	-0.15 (0.18)	-0.10 (0.06)	-0.04 (0.15)	-0.04 (0.15)
<i>Transport</i>	0.02 (0.17)	0.13** (0.06)	-0.34 (0.50)	0.04 (0.07)	-0.09 (0.17)	0.31 (0.28)	0.03 (0.05)	0.23 (0.18)	0.10 (0.11)	-0.01 (0.07)	-0.17* (0.11)	-0.11 (0.15)	-0.09 (0.06)	0.15 (0.21)	0.15 (0.15)
<i>Pers.S. & PA</i>	-0.49*** (0.13)	0.11*** (0.04)	0.26 (0.63)	0.13* (0.08)	0.15 (0.18)	0.19 (0.25)	0.14*** (0.05)	0.26 (0.18)	0.17** (0.08)	0.02 (0.05)	0.05 (0.08)	0.17 (0.17)	0.16*** (0.05)	0.27* (0.15)	0.27* (0.15)
<i>Others</i>															
<i>Age</i>	0.00 (0.01)	0.00 (0.00)	-0.06 (0.06)	0.01*** (0.00)	-0.01 (0.01)	-0.02 (0.01)	-0.00* (0.00)	0.00 (0.01)	-0.01** (0.01)	0.00 (0.00)	0.01 (0.01)	-0.01 (0.01)	0.00 (0.00)	0.00 (0.00)	0.01** (0.00)
<i>Second job</i>	0.14 (0.10)	-0.01 (0.04)	0.17 (0.44)	-0.15* (0.09)	-0.45*** (0.13)	-0.15 (0.31)	-0.07 (0.05)	-0.11 (0.12)	0.00 (0.05)	-0.09* (0.05)	-0.18** (0.07)	-0.06 (0.14)	-0.04 (0.03)	-0.05 (0.18)	-0.05 (0.18)
<i>Firm size</i>	0.15 (0.13)	0.17*** (0.04)	0.39 (0.24)	0.19*** (0.05)	-0.06 (0.12)	-0.04 (0.14)	0.03 (0.02)	0.22* (0.12)	0.06 (0.06)	0.11*** (0.03)	0.00 (0.07)	0.02 (0.09)	0.04 (0.03)	0.04 (0.12)	0.09 (0.12)
<i>M & SO</i>	0.72** (0.29)	0.66*** (0.13)	0.43 (0.44)	0.48*** (0.13)	0.43* (0.23)	1.01*** (0.30)	0.30*** (0.11)	-0.32 (0.25)	1.16*** (0.13)	0.72*** (0.09)	0.52*** (0.16)	0.20 (0.21)	0.37 (0.23)	0.02 (0.40)	0.02 (0.40)
<i>P & T</i>	0.50*** (0.13)	0.33*** (0.04)	0.65 (0.63)	0.59*** (0.08)	0.21 (0.18)	0.46* (0.25)	0.30*** (0.11)	0.30 (0.25)	0.30*** (0.13)	0.24*** (0.09)	0.25*** (0.16)	0.28 (0.21)	0.35*** (0.23)	-0.22 (0.40)	-0.22 (0.40)

Table A.5 – continued

	Bulgaria	Czech.R.	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy	Sweden
Clerks	(0.14) 0.09	(0.06) 0.22***	(0.51) 1.10*	(0.11) 0.36***	(0.18) 0.17	(0.25) 0.09	(0.05) 0.03	(0.18) 0.19	(0.08) 0.15**	(0.06) 0.14**	(0.09) 0.23***	(0.19) 0.01	(0.04) 0.16***	(0.23) 0.22
SA & CW	(0.14) 0.18	(0.05) 0.14***	(0.60) 0.25	(0.08) 0.16**	(0.19) 0.36**	(0.29) 0.20	(0.04) 0.15***	(0.16) 0.19	(0.06) 0.25***	(0.06) 0.15***	(0.09) 0.20**	(0.21) -0.08	(0.05) 0.06	(0.20) 0.00
MO	(0.12) 0.00	(0.05) 0.16***	(0.42) -1.11*	(0.07) 0.22***	(0.16) 0.11	(0.14) 0.38	(0.04) 0.12***	(0.13) 0.14	(0.08) 0.09	(0.05) 0.14**	(0.10) 0.14	(0.15) -0.41***	(0.05) 0.20***	(0.25) 0.24
Const	(0.16) 0.94***	(0.05) 1.06***	(0.51) 1.46	(0.08) 0.22**	(0.17) 1.34***	(0.28) 1.45***	(0.04) 1.16***	(0.17) 0.27	(0.07) 1.95***	(0.06) 0.88***	(0.13) 1.34***	(0.15) 2.17***	(0.06) 1.70***	(0.21) 1.14***
Adj. R- square	(0.27) 0.20	(0.10) 0.35	(0.85) 0.46	(0.10) 0.76	(0.30) 0.37	(0.45) 0.26	(0.08) 0.17	(0.32) 0.19	(0.16) 0.22	(0.12) 0.30	(0.18) 0.21	(0.33) 0.42	(0.09) 0.26	(0.33) 0.48

Note: Robust standard errors in parentheses.

Table A.6. Earnings equations results for Self-Employed (dependent variable: log hourly earnings).

	Bulgaria	Czech.R.	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy
Obs	372	851	553	314	273	1848	793	239	558	536	602	3740
Sex (male)	0.21** (0.11)	0.29*** (0.07)	-0.01 (0.06)	0.09 (0.14)	0.31** (0.16)	0.00 (0.05)	0.07 (0.05)	0.38** (0.17)	0.25*** (0.08)	0.37*** (0.11)	0.10 (0.16)	0.17*** (0.04)
Exp	0.05** (0.02)	0.02 (0.01)		0.01 (0.02)	0.02 (0.02)	0.03*** (0.01)	-0.01 (0.01)	0.00 (0.03)	0.01 (0.02)	0.03 (0.02)	0.02 (0.02)	0.03*** (0.01)
Exp-square	-0.00** (0.00)	-0.00** (0.00)		0.00 (0.00)	0.00 (0.00)	-0.00** (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00* (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00*** (0.00)
Sec. Educ.	0.09 (0.14)	-0.06 (0.11)	-0.08 (0.12)	0.12 (0.20)	0.10 (0.17)	0.15** (0.06)	0.06 (0.05)	0.15 (0.18)	-0.24 (0.18)	0.06 (0.20)	0.24* (0.13)	0.15*** (0.04)
Ter. Educ.	0.19 (0.20)	0.12 (0.14)	0.04 (0.13)	0.11 (0.23)	-0.31 (0.25)	0.32*** (0.10)	-0.05 (0.17)	0.28 (0.43)	-0.12 (0.22)	0.13 (0.21)	0.16 (0.14)	0.32*** (0.06)
Agriculture	0.00 (0.18)	-0.02 (0.11)	0.18 (0.13)	0.25 (0.17)	-0.34 (0.33)	-0.45*** (0.10)	-0.13 (0.15)	0.07 (0.21)	0.17 (0.17)	-0.24 (0.22)	-0.58** (0.24)	-0.55*** (0.07)
Construction	-0.23 (0.30)	0.17** (0.08)	-0.06 (0.11)	0.16 (0.20)	-0.07 (0.39)	0.25** (0.11)	0.22 (0.15)	0.22 (0.21)	0.02 (0.08)	-0.03 (0.19)	0.15 (0.21)	0.01 (0.06)
Hotels & Rest.	-0.47* (0.24)	-0.07 (0.16)	-0.23 (0.17)	-0.22 (0.23)	0.83 (0.58)	-0.12 (0.16)	0.27 (0.30)	-0.35 (0.36)	-0.07 (0.14)	-0.48* (0.27)	-0.21 (0.34)	-0.27*** (0.08)
Trade	-0.09 (0.22)	0.00 (0.11)	-0.14 (0.12)	-0.13 (0.19)	-0.38 (0.38)	0.04 (0.10)	0.35** (0.16)	-0.43* (0.24)	0.17 (0.11)	-0.40** (0.16)	0.28 (0.21)	-0.16*** (0.05)
RE & Finance	0.03 (0.27)	0.17 (0.10)	-0.01 (0.12)	-0.04 (0.20)	0.23 (0.40)	0.00 (0.14)	0.13 (0.40)	0.34 (0.30)	0.22* (0.12)	0.14 (0.15)	0.47* (0.24)	-0.02 (0.06)
Transport	-0.10 (0.24)	-0.02 (0.11)	-0.15 (0.11)	-0.34* (0.20)	0.13 (0.44)	0.42*** (0.14)	-0.32 (0.30)	0.10 (0.34)	0.09 (0.14)	-0.44 (0.30)	0.08 (0.42)	-0.18** (0.08)
Pers.S. & PA	-0.25 (0.64)	-0.75*** (0.18)	0.13 (0.17)	0.35 (0.52)	-2.49*** (0.49)	0.36** (0.16)	0.33 (0.32)	-0.11 (0.73)	0.26 (0.16)	-0.19 (0.20)	0.10 (0.43)	-0.47** (0.20)
Others												
Age	-0.01 (0.01)	0.00 (0.01)	0.00 (0.00)	0.01 (0.01)	-0.03** (0.01)	0.00 (0.00)	0.01** (0.00)	-0.02 (0.02)	0.01 (0.01)	0.00 (0.01)	-0.02 (0.01)	0.00 (0.00)
Second job	-0.77*** (0.13)	-1.07*** (0.33)	-0.68*** (0.18)	-0.26 (0.27)	-0.50*** (0.19)	-0.63*** (0.14)	-1.59*** (0.16)	-1.83*** (0.43)	-0.78** (0.33)	-0.64** (0.27)	-0.22 (0.37)	-0.98*** (0.11)
Firm size	-0.11 (0.22)	-0.11 (0.10)	0.20* (0.11)	-0.09 (0.17)	0.57** (0.27)	-0.06 (0.11)	0.25*** (0.08)	0.05 (0.54)	0.13 (0.08)	0.09 (0.12)	0.72*** (0.23)	0.11* (0.06)

Table A.6 – continued

	Bulgaria	Czech.R.	Hungary	Lithuania	Latvia	Poland	Romania	Slovenia	Slovakia	Germany	Ireland	Italy
M & SO	0.64** (0.28)	0.43** (0.20)	0.29 (0.19)	0.02 (0.35)	0.09 (0.30)	1.20** (0.49)	0.03 (0.17)	0.40 (0.79)	0.21 (0.19)	-0.46 (0.56)	0.13 (0.25)	0.17* (0.09)
P & T	0.59* (0.32)	0.49*** (0.17)	0.16 (0.18)	0.13 (0.36)	0.13 (0.29)	1.27** (0.50)	0.70*** (0.22)	-0.35 (0.69)	0.17 (0.17)	-0.68 (0.52)	0.19 (0.29)	0.28*** (0.10)
Clerks	0.20 (0.28)	0.39** (0.17)	0.06 (0.19)	-0.37 (0.35)	0.31 (0.34)	1.08** (0.49)	0.30** (0.14)	0.19 (0.70)	-0.01 (0.18)	-0.76 (0.54)	-0.28 (0.41)	-0.05 (0.11)
SA & CW	0.42 (0.28)	0.22 (0.17)	0.01 (0.19)	-0.23 (0.32)	0.07 (0.19)	0.89* (0.48)	0.06 (0.06)	-0.36 (0.70)	0.07 (0.16)	-0.83 (0.54)	0.10 (0.25)	0.06 (0.09)
MO	0.37 (0.36)	0.34 (0.26)	-0.02 (0.19)	0.32 (0.48)	-1.02* (0.55)	0.66 (0.51)	0.08 (0.36)	-0.56 (0.73)	0.06 (0.19)	-0.40 (0.60)	-0.06 (0.43)	0.18 (0.12)
Const	1.17** (0.45)	1.09*** (0.29)	1.59*** (0.26)	1.25*** (0.46)	1.90*** (0.65)	0.16 (0.51)	0.35* (0.19)	1.67* (0.99)	0.88*** (0.34)	2.51*** (0.64)	2.15*** (0.48)	1.71*** (0.13)
Adj. R-square	0.25	0.12	0.12	0.05	0.18	0.26	0.39	0.27	0.07	0.14	0.27	0.20

Note: Robust standard errors in parentheses.