

AN AD HOC STATISTICAL ANALYSIS ON SHORT TERM MOBILITY – ECONOMIC VALUE OF POSTING OF WORKERS

*The impact of intra-EU cross-border services, with
special attention to the construction sector*

Frederic De Wispelaere and Jozef Pacolet

Published by
KU Leuven
HIVA RESEARCH INSTITUTE FOR WORK AND SOCIETY
Parkstraat 47 box 5300, 3000 LEUVEN, Belgium
hiva@kuleuven.be
www.hiva.be

© 2016 HIVA KU Leuven

Contents

List of tables	5
List of figures	7
1 Introduction	9
2 Methodology	9
3 Overall economic value and impact of posting	9
3.1 A tool to stimulate intra-EU labour mobility	9
3.2 A tool to stimulate intra-EU competition	11
3.3 A tool to increase the household income of the posted workers	13
3.4 A tool to support adjustment to asymmetric shocks	15
3.5 A tool to create 'social convergence'	16
4 Economic value and impact of posting in the construction sector	16
4.1 Value of cross-border services in the construction sector	17
4.2 Displacement effects despite the natural boundaries of the volume of posting	17
4.3 Impact on personnel cost, turnover and value added	21
4.4 Impact on the amount of social security contributions collected	24
5 Conclusion	24

List of tables

Table 1	Average direct remuneration, bonuses and allowances, per month, per employee in FTE, construction, 10 employees or more, Poland, 2012	14
Table 2	Risk of displacement effects	18

List of figures

Figure 1	Share of A1 forms in national employment, main sending and receiving Member States, 2014	11
Figure 2	Schematic overview of the impact of the current rules on the financial profits or losses of posted workers and foreign service providers	12
Figure 3	Social security contributions paid by employers, EU-28, 2014	12
Figure 4	Share of outgoing posted workers in total employment of the sending Member State and differentials in social security contributions among the sending and receiving Member State, 2014	13
Figure 5	Social security contributions paid by employees and personal income tax rates,* EU-28, 2014	15
Figure 6	Share of export of services in total turnover, construction sector, 2014	17
Figure 7	Displacement effects in the construction sector, 2012 and 2013	20
Figure 8	Belgium, trends in employment, self-employment and posted workers, all economy and construction sector, 2010-2014	21
Figure 9	Purchase of services from abroad compared to total personnel cost (native + posted), 2013	22
Figure 10	Percentage change of value added, construction, Bismarck oriented - central region Member States and some new Member States, 2009-2013, 2009=100%	23
Figure 11	Investment in construction, Bismarck oriented - central region Member States and some new Member States, 2009-2013	
Figure 12	Percentage change of the social security costs, construction, Bismarck oriented - central region Member States and some new Member States, 2009-2013, 2009=100%	24

1 | Introduction

While the number of posted workers¹ has continued to increase over the past years, there is remarkably little evidence about the economic value and impact of services provided through posting workers. With the continuing economic upturn in the EU (EC, 2015), posting of workers can even be expected to continue growing at a steady pace based on the evidence that the growth of posting is strongly correlated to the growth of GDP (ISMERI, 2012). This analysis aims at partially filling this gap, with a focus on the construction sector. Moreover, the negative connotation of posting of workers, as it would put a downward pressure on wages and labour tax revenues, undermine jobs for native employees (“job displacement effects”) and the competitiveness of native employers, could be confronted with the economic value of it for both sending and receiving Member States². This report has been prepared for the European Commission within the context of the Impact Assessment concerning the revision of the Posting of Workers Directive 96/71/EC.^{3,4}

2 | Methodology

The Portable Document (PD) A1 is a formal statement on the applicable social security legislation. It proves that a posted worker or a person employed in more than one Member State pays social contributions in another Member State. As a result, figures collected by the PD A1 Questionnaire launched within the Administrative Commission for the Coordination of Social Security Systems give an indication of the flows of posted workers among sending and receiving Member States towards a specific sector of activity (Pacolet and De Wispelaere, 2015). Nonetheless, there is uncertainty to what extent the number of PDs A1 issued are a precise measure of the actual number of postings or other situations of mobility of workers taking place. In order to assess this, the number of PDs A1 will be complemented with figures collected by existing national registration tools (for instance, by LIMOSA for Belgium)⁵. This kind of figures will be confronted with data retrieved from Eurostat on international trade in services, detailed enterprise statistics for construction and labour cost data. It allows us, *inter alia*, to estimate the effect of posting (export/import of services) on the turnover, value added and productivity of native employers; the effect on collected labour tax revenues; the effect on the income of posted workers and finally the effect on native employment.

3 | Overall economic value and impact of posting

3.1 A tool to stimulate intra-EU labour mobility

Intra-EU labour mobility can take several forms: migration to another Member State, daily or weekly cross-border commuting or short-term stay through posting of workers (Fries-Tersch and Mabilia, 2015). The size of it is considered as (very) low, especially compared to the US. Nonetheless, it has experienced an upward evolution during the last decade, mainly influenced by the EU enlargements of 2004 and 2007 and even despite the transitional arrangements to restrict

1 A posted worker is an employee who is sent by his employer to carry out a service in another EU Member State on a temporary basis.

2 Member State: 28 EU Member States and EFTA countries. EU-15 Member States: Belgium, Greece, Luxembourg, Denmark, Spain, Netherlands, Germany, France, Portugal, Ireland, Italy, United Kingdom, Austria, Finland and Sweden. EU-13 Member States: Croatia, Romania, Bulgaria, Poland, Czech Republic, Latvia, Lithuania, Slovenia, Estonia, Slovakia, Hungary, Cyprus and Malta.

3 Call for tender NO VT/2015/096 - EURES: An ad hoc statistical analysis on short term mobility – economic value of posting of workers.

4 Directive 96/71/EC of the European Parliament and of the Council of 16 December 1996 concerning the posting of workers in the framework of the provision of services.

5 Belgium has introduced in 2007 a mandatory declaration tool by LIMOSA for posted workers. Figures on the yearly number of declarations registered by LIMOSA differ to a high extent from the number of PDs A1 received by Belgium.

the inflow of workers from new Member States during several years (OECD, 2012; Jauer et al., 2014). These transitional arrangements have probably even resulted in a substantial rise of the number of posted workers and (bogus) self-employed persons (Kahanec, 2012; Pacolet and De Wispelaere, 2014). This phenomenon could be conceptualised as the ‘front door/back door principle’ (Van Overmeiren, 2008).

In 2014, a total of 1.45 million PDs A1 were issued for the posting of workers according to Article 12 of Regulation (EC) No. 883/2004 (Pacolet and De Wispelaere, 2015).⁶ Compared to last year, the overall number of postings increased by 8.5%. Between 2010 and 2014 an annual growth of 8.3% has been realised. During this observation period, the number of PDs A1 issued to posted workers increased strongly in Slovenia, Poland, Greece and Bulgaria. Also, during the same period, the number of PDs A1 received for posted workers increased strongly in Germany, Belgium, Estonia and Slovenia.

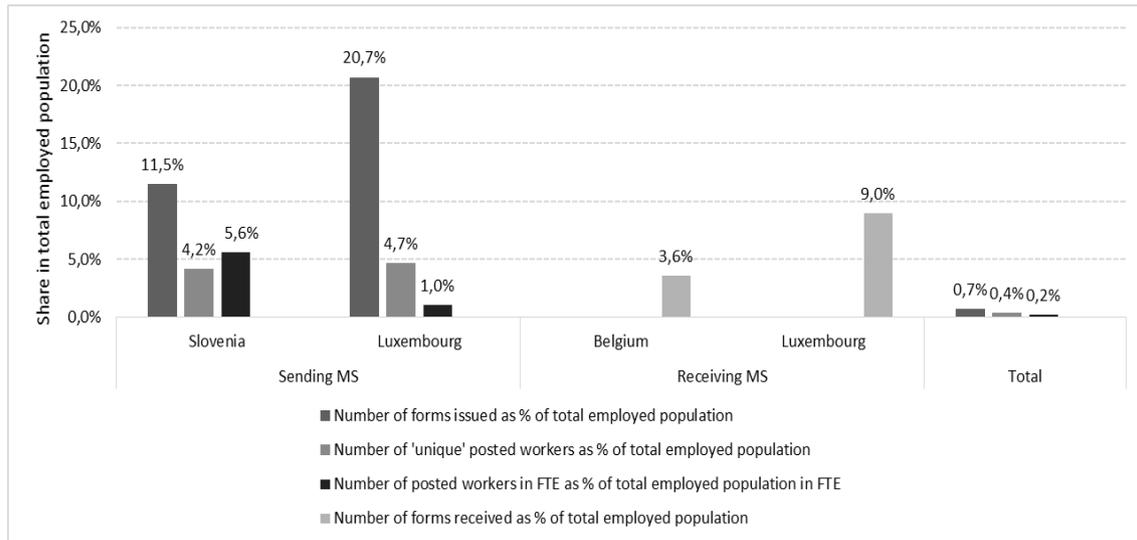
Roughly 86% of the PDs A1 for posted workers were issued to provide activities in an EU-15 Member State. In addition, 44% of the PDs A1 were issued by EU-13 Member States (Pacolet and De Wispelaere, 2015). This implies not only a flow from EU-13 to EU-15 Member States but also across EU-15 Member States. Moreover, 70.2% of the workers posted from a EU-13 Member State work in the industry sector while ‘only’ 53.4% of the workers posted from a EU-15 Member State are employed in this sector. It results in two types of posting: low to medium-skilled workers posted from low labour cost to high labour cost Member States, mainly in labour-intensive sectors, on the one hand, and medium to high-skilled workers posted in qualified occupations, on the other hand (ISMERI, 2012).

The available figures give the impression of a rather limited impact of posting on the national labour markets. The total number of PDs A1 issued stands for 0.7% of total employment. However, this is certainly not the best indicator to assess the impact on national labour markets.⁷ Better is to compare the total employment with the number of ‘unique’ posted persons. The number of unique posted workers stands for 0.4% of total EU employment (*Figure 1*). The share of posting in total EU employment in terms of full-time equivalents (FTE) is even equal to only 0.2%. However, some Member States, and within these Member States some specific sectors, are in relative terms confronted with a significantly high percentage of outgoing (especially Luxembourg and Slovenia) and incoming posted workers (especially Luxembourg and Belgium).

⁶ Article 12 (1) of Regulation (EC) No. 883/2004 defines a posted worker as “a person who pursues an activity as an employed person in a Member State on behalf of an employer which normally carries out its activities there and who is posted by that employer to another Member State to perform work on that employer’s behalf ..., provided that the anticipated duration of such work does not exceed twenty-four months and that he is not sent to replace another person.” Article 12 (2) of Regulation (EC) No. 883/2004 defines a posted self-employed person as “a person who normally pursues an activity as a self-employed person in a Member State who goes to pursue a similar activity in another Member State ..., provided that the anticipated duration of such activity does not exceed twenty-four months.” Nonetheless, also Article 13 (active in two or more Member States) and Article 16 of Regulation (EC) No. 883/2004 (common agreements) could contain cases of posting. Approximately 431,000 PDs A1 were applicable to persons active in 2 or more Member States and 36,000 PDs A1 to common agreements.

⁷ The number of PDs A1 issued is not necessarily equal to the number of persons involved. This might bias the results when trying to assess the importance of posting in the overall labour force. A worker could be posted multiple times during the same year. This implies that several PDs A1 could be issued to the same posted person during this period of one year. However, the period of posting could also be longer than one year.

Figure 1 Share of A1 forms in national employment, main sending and receiving Member States, 2014



Source Pacolet and De Wispelaere, 2015

3.2 A tool to stimulate intra-EU competition

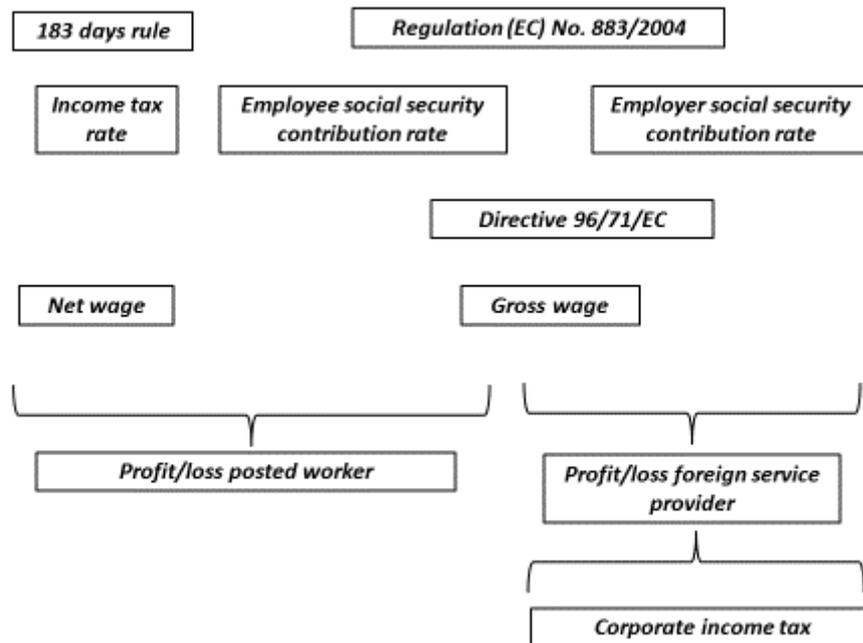
Directive 96/71/EC stipulates a nucleus of terms and conditions of employment of the receiving Member State which are mandatory to be applied by foreign service providers (article 3 (1) of the Directive) (Figure 2). These current rules establish a structural differentiation of wage rules applying to posted and local workers (FGB and COWI, 2016). However, not only potential wage differentials⁸ but also, *inter alia*, differences in social security contributions paid by employers and corporate income taxes among sending and receiving Member States will determine the ‘competitive advantage’ for foreign service providers (Figure 2). Taxes are still paid in the sending competent Member State despite the temporary provided services in the receiving Member State.⁹ This exception to the general tax principle, which is taxation in the Member State of employment, through posting of workers, is mainly motivated to encourage intra-EU mobility and economic interpenetration and to avoid an additional administrative burden.¹⁰ This was even recognised by the European Commission in a recent report (EC, 2014, p. 148): “*Posting workers allows companies to exploit their competitive advantage across borders*”. Also Berghman (1996, p. 44) points out that: “*By not interfering in social security, the EC allows its less developed Member States to improve their economic position, as they can profit from the competitive advantage which their less developed system of social protection generates. At the same time, however, this also constitutes an incentive for social dumping.*”

⁸ Mustilli and Pelkmans (2013) even identify the imposition of, for example, a minimum wage for posted workers as a barrier to freedom of services in that it pre-emptly Eastern European EU workers from exploiting their lower wages as a competitive advantage in the internal market.

⁹ Article 12 of Regulation (EC) 883/2004 exempts the posted worker and the foreign service provider to pay social security contributions in the receiving Member State during a posting period of a maximum of 24 months.

¹⁰ “*In order to give as much encouragement as possible to the freedom of movement of workers and services, to avoid unnecessary and costly administrative and other complications which would not be in the interests of workers, companies and administrations, the Community provisions in force allow for certain exceptions*” (European Commission, 2012, p. 6). See also Case 35/70 Manpower paragraph 10; Case C-202/97 Fitzwilliam paragraphs 28 to 30 and Case C-49/98 Finalarte paragraph 30.

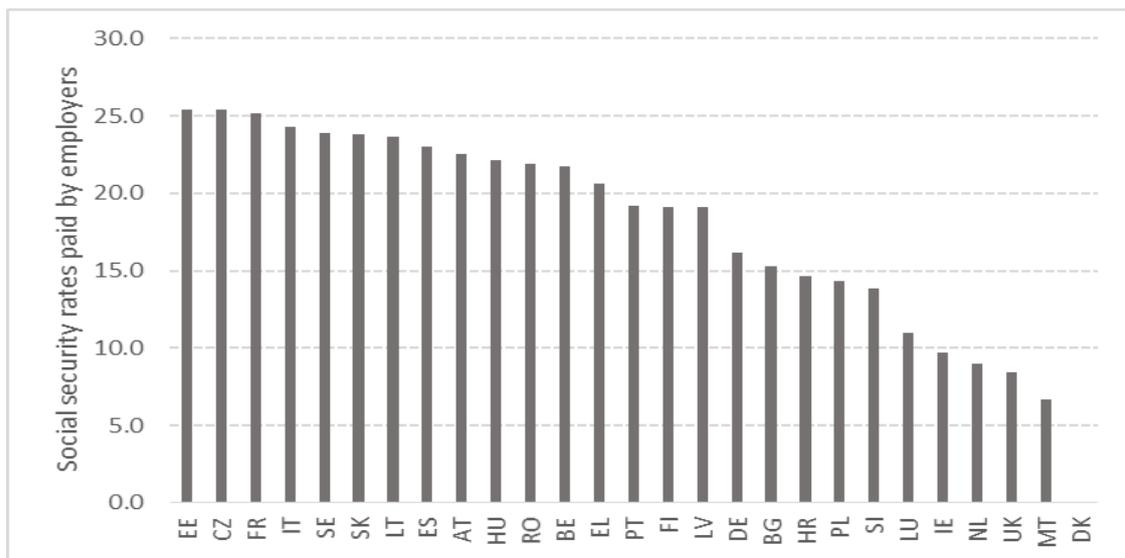
Figure 2 Schematic overview of the impact of the current rules on the financial profits or losses of posted workers and foreign service providers



Source Based on De Wispelaere and Pacolet, 2015a

The social security contributions paid by employers vary markedly across Member States from a high level in Estonia, Czech Republic and France to a low level in Malta and Denmark. In general, social security contributions paid by employers (*Figure 3*) and corporate income taxes in the main sending Member States (for example Slovenia and Poland) are most of the time lower than in the receiving Member States (for example Belgium, France, Austria and Germany). It could result in a competitive advantage even in case of equal gross wages among native and posted workers.

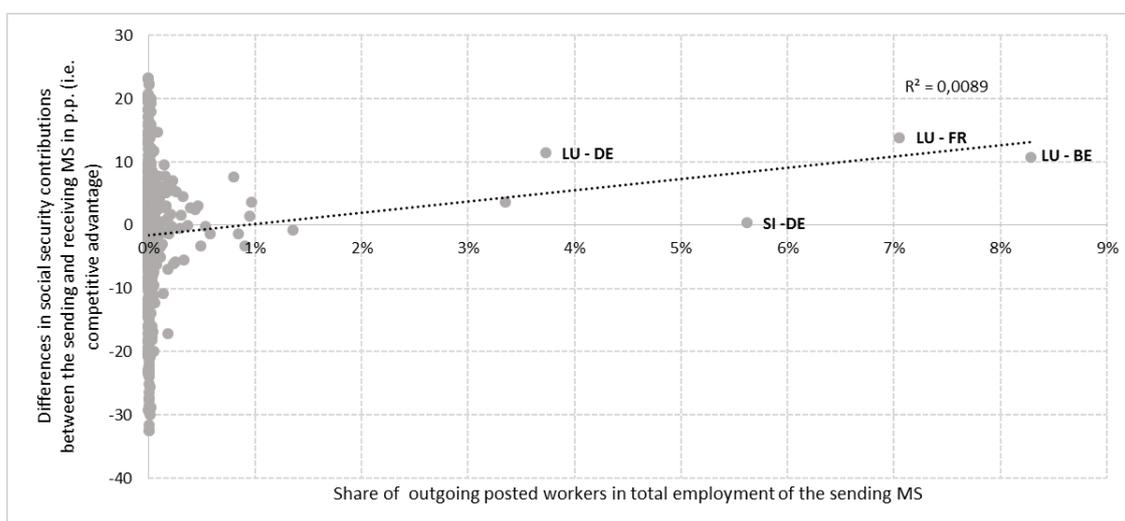
Figure 3 Social security contributions paid by employers, EU-28, 2014



* For a single person receiving 67% of the average national wage
Source OECD_EC tax benefits indicator

Posted workers tend to support the provision of labour-intensive services. Labour cost differentials give a competitive edge to posting companies which thus tend to strictly apply the minimum rate of pay required in the receiving Member States. Empirical evidence points at the fact that labour cost differentials are an important driver of posting (ISMERI, 2012). However, based on the analysis of the country by country flows of posting there is no strict correlation between differentials in social security contributions and the share of outgoing posted workers in total employment of the sending Member State (Figure 4). This is not surprising given that the average tax wedge of the EU-15 Member States is quite similar to the average one of the EU-13 Member States (De Wispelaere and Pacolet, 2015a). Moreover, labour and skill shortages are other important drivers of posting (ISMERI, 2012). Please note that calculations were made for total country by country flows of posting. A breakdown by sector of activity, with a focus on the construction sector, might have another outcome. However, no complete overview of the number of workers posted in the construction sector is yet available as only 19 Member States provided more detailed figures in the PD A1 Questionnaire on the sector of economic activity.

Figure 4 Share of outgoing posted workers in total employment of the sending Member State and differentials in social security contributions among the sending and receiving Member State, 2014



* p.p.: percentage points

Source Calculations based on Pacolet and De Wispelaere, 2015 and OECD_EC tax benefits indicator

3.3 A tool to increase the household income of the posted workers

The rules defined by Directive 96/71/EC guarantee an equal or most of the time a higher income for posted workers compared they would be employed in their Member State of origin. Especially workers posted from a EU-13 to a EU-15 Member State will experience a (much) higher income given that the average and minimum wages vary markedly across ‘high wage’ EU-15 and ‘low wage’ EU-13 Member States.¹¹ For instance, the gap between Member States on minimum wages has constantly increased since 1996, from a ratio between the lowest and the highest minimum wage of 1:3 to 1:10 mainly influenced by the EU enlargements. As a result, posted workers from low-wage Member States are pushed away from home due to low remunerations and pulled by the better prospects, such as higher wage levels, and arranged and covered expenditures for travel and housing (Caro et al., 2015). However, the posting of workers is mainly employer-driven. This in contrast to labour migration which is more a worker-driven decision.

¹¹ Eurostat [earn_mw_cur]

The current wage differentials caused by Directive 96/71/EC have a relatively lower impact on the overall welfare of workers posted from low-wage to higher-wage Member States to the extent that minimum pay levels in high-wage Member States exceed average take-home pay in the sending Member State. As an illustrative example, in 2012, the level of the statutory minimum wage in Belgium (€ 1,472) was almost twice as high as the average wage of a construction worker in Poland (€ 752) (Table 1). When this Polish posted worker would be able to receive a remuneration at the level of the average remuneration paid in the Belgian construction sector (s)he would even receive a remuneration three times higher than the average remuneration in the Polish construction sector.

Table 1 Average direct remuneration, bonuses and allowances, per month, per employee in FTE, construction, 10 employees or more, Poland, 2012

Sending MS: Poland (average direct remuneration, bonuses and allowances: € 767)					
<i>Minimum wage of the receiving MS (in €)</i>	<i>Average wage of the receiving MS (in €)</i>	Receiving MS	<i>Change by the application of the minimum wage in the receiving MS</i>	<i>Change by the application of the average wage in the receiving MS</i>	<i>Increase in p.p.</i>
1,472	2,186	Belgium	1.92	2.85	0.93
148	323	Bulgaria	0.19	0.42	0.23
312	904	Czech Rep.	0.41	1.18	0.77
n.a.	3,794	Denmark	n.a.	4.95	n.a.
n.a.	2,426	Germany	n.a.	3.16	n.a.
290	1,012	Estonia	0.38	1.32	0.94
1,462	3,267	Ireland	1.91	4.26	2.35
684	1,433	Greece	0.89	1.87	0.98
748	1,970	Spain	0.98	2.57	1.59
1,426	2,360	France	1.86	3.08	1.22
374	777	Croatia	0.49	1.01	0.53
n.a.	2,068	Italy	n.a.	2.70	n.a.
n.a.	1,710	Cyprus	n.a.	2.23	n.a.
287	622	Latvia	0.37	0.81	0.44
232	499	Lithuania	0.30	0.65	0.35
1,801	2,653	Luxembourg	2.35	3.46	1.11
323	640	Hungary	0.42	0.83	0.41
680	1,306	Malta	0.89	1.70	0.82
1,456	3,250	Netherlands	1.90	4.24	2.34
n.a.	2,968	Austria	n.a.	3.87	n.a.
353	767	Poland	0.46	1.00	0.54
566	1,244	Portugal	0.74	1.62	0.88
157	358	Romania	0.21	0.47	0.26
763	1,354	Slovenia	0.99	1.77	0.77
327	764	Slovakia	0.43	1.00	0.57
n.a.	3,035	Finland	n.a.	3.96	n.a.
n.a.	3,248	Sweden	n.a.	4.23	n.a.
1,244	3,163	United King.	1.62	4.12	2.50
n.a.	1,547	Iceland	n.a.	2.02	n.a.
n.a.	4,547	Norway	n.a.	5.93	n.a.
n.a.	4,906	Switzerland	n.a.	6.40	n.a.

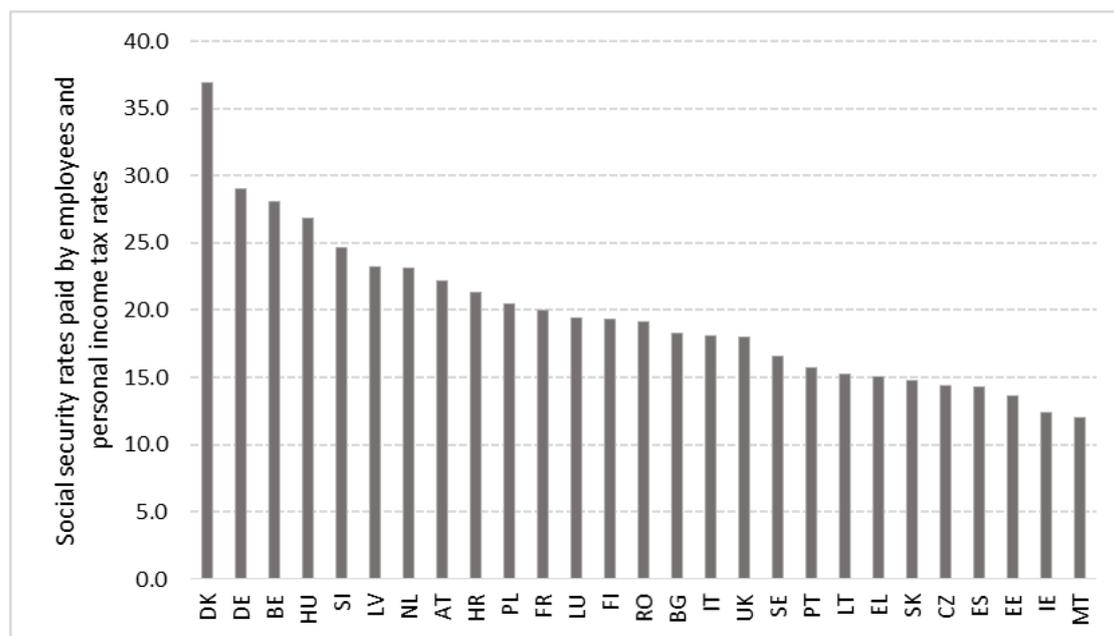
* Statutory minimum wages are reported and not the sectoral minimum wages of the construction

** Increase in percentage points

Source Based on Eurostat [lc_ncost_r2] and [earn_mw_cur]

There are also important differences in social security contributions paid by employees¹² and personal income tax rates¹³ among sending and receiving Member States (*Figures 2 and 5*).¹⁴ These differentials may even contribute to a higher take-home pay for posted workers than local workers (assuming an equal gross wage). Moreover, price level differences among Member States will influence the real wages of posted workers.¹⁵ In 2014, price levels for consumer goods and services differed widely across Europe. The highest price level among EU Member States was observed in Denmark, 39% above the EU average, while in Bulgaria the price level was 52% below the EU average. These differentials may even contribute to a higher purchasing power for posted workers than local workers due to the price level differences among sending and receiving Member States.

Figure 5 Social security contributions paid by employees and personal income tax rates,* EU-28, 2014



* For a single person receiving 67% of the average national wage
Source OECD_EC tax benefits indicator

3.4 A tool to support adjustment to asymmetric shocks

Intra-EU labour mobility could be considered as an important tool to support adjustment to ‘asymmetric shocks’¹⁶ in the economic and monetary union (EC, 2014; Apria et al., 2014). The ability of posting to increase export of services (*see below - Figure 6*), to increase employment (*see above - Figure 1*), to decrease unemployment,¹⁷ to increase household incomes (*see below - Table 1*) and

12 Article 12 of Regulation (EC) 883/2004 exempts the posted worker and the foreign service provider to pay social security contributions in the receiving Member State during a posting period of a maximum of 24 months.

13 Article 15 (2) of the OECD Model Tax Convention on Income and on Capital defines the ‘183-days-rule’. It implies that the posted worker who provides services on a temporary basis during a period of less than 183 days within a period of 12 months that starts or ends in the fiscal year in another Member State will be taxed by the sending Member State.

14 Most of the Member States apply flat social security contributions and progressive personal income tax rates.

15 “The price level indices provide a comparison of Member States’ price levels relative to the European Union average: if the price level index is higher than 100, the Member State concerned is relatively expensive compared to the EU average, while if the price level index is lower than 100, then the Member State is relatively cheap compared to the EU average. They provide an indication of the order of magnitude of the price level in one Member State in relation to others.” See http://ec.europa.eu/eurostat/statistics-explained/index.php/Comparative_price_levels_of_consumer_goods_and_services

16 “An economic shock is considered to be asymmetric if only one part of the currency area is hit by the shock while the other part is spared or if member countries differ widely in terms of the shock’s impact on their economies” (Jager and Hafner, 2013, p. 315).

17 Masluskaitė (2014, p. 20) already stressed the importance of posting of workers in order to keep the unemployment level low: “such short-term migration of labour might help shield cyclical divergences on sectorial or national levels. Companies may thus keep their experienced workers without having to go through firing-and-hiring procedures depending on economic cycle of one Member State whereas workers get to keep their jobs, albeit temporarily based in another Member State”.

labour tax revenues (*see below*) in the sending Member State are, therefore, important features (De Wispelaere and Pacolet, 2015b). Moreover, from a receiving perspective, labour and skill shortages are important drivers of posting (ISMERI, 2012).

3.5 A tool to create 'social convergence'

It is acknowledged that labour mobility can strengthen upward convergence (EC, 2014). That is why posting could be considered as a possible tool to create upward convergence (see also HRW, 2015) given that it could have a (minor) positive impact on the evolution of employment, unemployment, household incomes and labour tax revenues in the sending Member State. This could especially be expected if there is a high flow of posted workers from Member States with a surplus of workers (and lower real wages) to areas with a shortage (and higher real wages). For instance, as already concluded by Goudswaard and van Riel (2004) *"higher levels of income offer the possibility to develop a system of social security with adequate protection levels. At least the funding will become easier."* For example, a remarkable difference can be observed of the impact of posting on the annual labour tax revenues among sending EU-15 and EU-13 Member States. Only 0.1% of the total annual labour tax revenues received by the EU-15 Member States could be related to posting while this is equal to 1.4% for the EU-13 Member States (De Wispelaere and Pacolet, 2015a). However, the potential negative impact of posting workers on the national labour market of the receiving Member State, in terms of job displacement effects, downward pressure on wages and lower labour tax revenues, might reduce this upward convergence hypothesis.

4 | Economic value and impact of posting in the construction sector

This paragraph will focus on the economic value and impact of posting in the construction sector as most of the posted workers are employed in this sector of activity. In 2014, on average 43.7% of the PDs A1 were issued to posted workers employed in the construction sector.¹⁸ From a sending perspective, persons posted from the Czech Republic, Estonia, Croatia, Lithuania, Hungary, Poland, Portugal, and Slovenia mainly provided services in the construction industry. While from a receiving perspective, more than 50% of workers posted to Belgium, Latvia, Luxembourg, Austria, Slovenia, Finland, Sweden and Liechtenstein were employed in the construction sector.

Despite Article 1 (3) of Directive 96/71 covers three transnational posting situations: by subcontracting, by intra-group posting and by employment agencies, we tend to conclude that most of the posted workers in the construction sector are subcontracted.¹⁹ In this regard, posting by subcontracting could be considered as mainly competitive²⁰ in labour-intensive sectors (such as the construction sector and the meat industry) as it becomes a cost-saving way of exploiting differentials in terms and conditions of employment, social security contributions and other tax rates. Large native construction companies (in terms of turnover and not necessarily in terms of employment²¹) function as main contractor acting as site managers on large construction projects while small and medium-size native companies (in terms of turnover) act as subcontractors

¹⁸ Only 19 Member States provided more detailed figures on the sector of economic activity, which accounts for some 53% of the total number of PDs A1 issued.

¹⁹ van Hoek and Houwerzijl (2011, p. 11) state that *"whereas construction and temporary work agencies cover the first and third modality, there is no typical sector that (also) covers the second option of lending out within a group."* Moreover, Jorens, Peters and Houwerzijl (2012, p. 5) conclude that *"subcontracting is particularly widespread in the construction sector, but it is also a common feature of other economic sectors such as transport, tourism or the cleaning industry. ... the growing use of subcontracting especially in labour intensive industries ..."*

²⁰ Harvey (2003) divides subcontracting into 'cooperative' and 'competitive'.

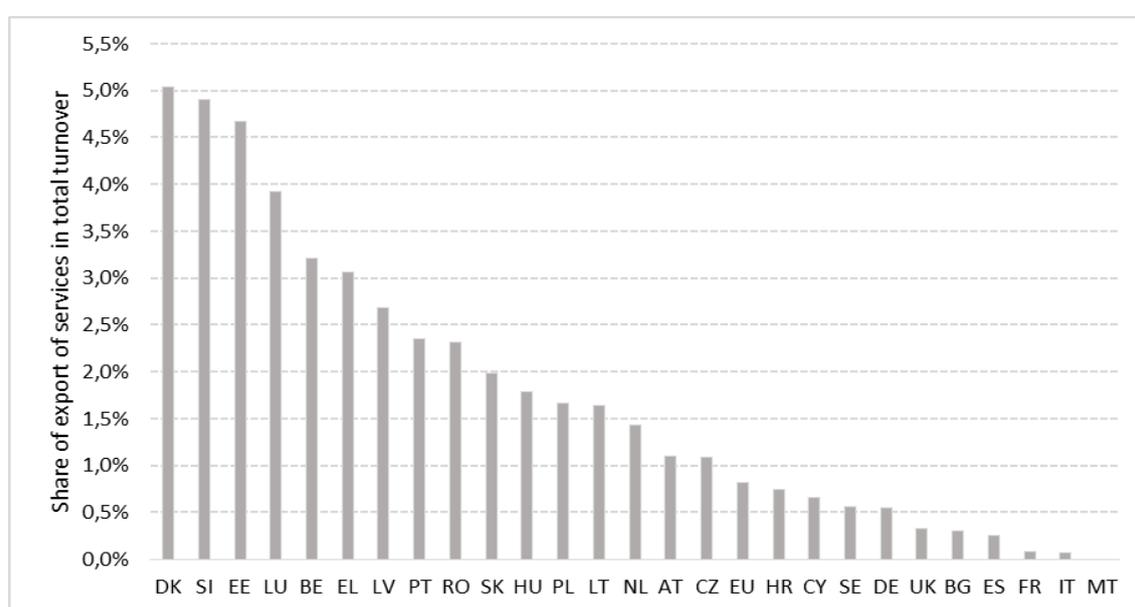
²¹ At EU-level, on average only 4 persons are employed by a building company (own calculation based on Eurostat [sbs_na_con_r2]).

providing the majority of workers (Lillie and Wagner, 2015; Caro et al., 2015). As a result, especially these small and medium-sized companies will compete with foreign service providers.

4.1 Value of cross-border services in the construction sector

Cross-border services represent an overall small share of total turnover in the construction sector (calculated as the ratio of turnover from export activities on total turnover)²², amounting to just 0.8% of total turnover in the EU-28 (Figure 6).²³ Exceptions are Denmark, Slovenia and Estonia, where the cross-border trade intensity makes up about 5% of total turnover. Despite the relative low value of cross-border services in total turnover, the sections below will focus on the extent the import of services by the posting of workers has undermined jobs for local employees (‘job displacement effects’), labour tax revenues and the competitiveness of local employers.

Figure 6 Share of export of services in total turnover, construction sector, 2014



Source Calculations based on Eurostat [bop_its6_det] and [sbs_na_con_r2]

4.2 Displacement effects despite the natural boundaries of the volume of posting

Two types of social dumping are defined by Abler and Standing (2000): the first type of dumping occurs without state intervention for instance by the displacement of high-cost producers by low-cost producers, while the second type of dumping is a result of state intervention by reducing labour costs or by reducing social security provisions (i.e. not equal to social or fiscal fraud). For instance, in order to remain competitive, Member States with a high labour tax wedge could opt for a tax shift towards non-labour tax bases.²⁴ Based on administrative figures it is, however, questionable if social dumping through posting of workers is currently a real threat for the receiving

²² It should be noted, however, that not all cross-border construction services are carried out through posting of workers.

²³ See also, European Commission, A Single Market Strategy for Europe - Analysis and Evidence, SWD(2015) 202 final, 28 October 2015.

²⁴ For instance, measures have been taken by Belgium to reduce the tax wedge on labour through decreases in personal income taxation and social security contributions. Employers' social security contributions will gradually decrease, from maximum 32.4 % to maximum 25 % for the highest wages between 2016 and 2018, and from 17.3 % to 10.9 % for the lowest wages between 2016 and 2019.

Member States given the marginal percentage of posted workers compared to the total number of employed persons (see above - Figure 1).

Nonetheless, especially native workers employed in labour-intensive sectors, such as the construction sector and the meat industry, could be considered to be sensitive to displacement effects (Table 2). The fact that labour-intensive sectors are also price sensitive results even in an additional pressure on labour costs.²⁵ The existing differentials in wages and tax rates between posted and native workers could not be answered by a higher labour productivity level of the latter given that they are subject to similar or even better terms and conditions of employment. On the contrary, the ‘unit labour cost’²⁶ will even be lower for posted workers than for native workers. It supposes at the same time a process of task specialisation of native workers and employers in order to remain competitive.

Nonetheless, the import of services by the posting of workers could also be the result of labour shortages. Especially Member States without a minimum wage could experience difficulties to attract enough workers when the reservation wage of workers (= wage at which a worker is willing to accept a job) lays below the actually paid wage. Therefore, the introduction of a (higher) (minimum) wage, for protectionist reasons,²⁷ could have a negative impact on the number of posted workers as more native workers will be willing to work (Bachmann et al., 2012). But the introduction of a (higher) (minimum) wage will also influence the demand and supply of posted workers.

Table 2 Risk of displacement effects

Sector of activity	Price sensitive?	Labour-intensive?	Flexibility required?	Highly skilled?	Risk of displacement
<i>Construction</i>	HIGH	HIGH	HIGH	LOW to MEDIUM	HIGH
<i>Business</i>	LOW	LOW	HIGH	HIGH	LOW to MEDIUM

Source Own table

Nonetheless, the current rules result in some important natural boundaries of the volume of posting. As stated by the judgement in case C-113/89 *Rush Portuguesa Lda* “posted workers return to their country of origin after the completion of their work without at any time gaining access to the labour market of the host Member State” (paragraph 15). By Article 12 of Regulation (EC) No. 883/2004, the posting period is set at a maximum of 24 months. This gives the impression that the provision of services through posting is rather temporarily. Moreover, the posted worker cannot be sent to replace another posted worker. Nonetheless, the fact that the posted worker can already start a new period of posting after two months from the date of expiry of the previous posting period (see also EC, 2012), gives the impression that the provision of services by posting can get a more permanent

25 Wagner (2015) even points out that “labour costs have a direct impact on competitiveness and are reduced by increasingly employing posted workers via subcontracting arrangements. As a result, the majority of the meat slaughtering and processing in Germany today is done by posted and temporary workers from Eastern Europe working for an hourly wage of about three to five euros”.

26 The Unit labour costs (ULC), defined by the OECD, is a measure of the average cost of labour per unit of output and are calculated as the ratio of total labour costs to real output. See also http://stats.oecd.org/Index.aspx?DataSetCode=ULC_ANN

27 “The absence of the statutory and sectorial minimum wage in the meat industry over the last decade has long been the weak link in the German institutional system. The lack thereof increased the attractiveness to insource lower wage labour via subcontracting companies. As a consequence the employment conditions and levels of pay of the meat slaughtering and meat-packaging workers referred to their home country” (Wagner, 2015).

character.²⁸ However, this does not necessarily imply that the real duration of the posting period is equal to 24 months. Based on figures collected by the PD A1 Questionnaire, the duration of one posting period was on average 103 days (total weighted average) in 2014. However, the posting period varied markedly among the sending Member States. Luxembourg, Belgium, France and Italy reported a rather low duration of the posting period (all below the total unweighted average of 151 days) compared to the Czech Republic, Germany, Slovenia, Latvia, Croatia, Iceland, Estonia, Hungary and Ireland. Taking also the data about the number of unique posted workers involved into consideration, on average these workers were posted 1.7 times during the same year, we tend to conclude that some sending Member States (especially Luxembourg and Belgium) post the same worker several times a year for a short posting period compared to other sending Member States which tend to post one worker for a longer posting period. This also implies that on average one worker is posted for approximately 6 months (this by multiplying the average posting period (103 days) by the average number of times workers were posted (1.7)). These findings are confirmed by figures of the German construction sector as more than 90% of the incoming workers are posted for a period less than 6 months (SOKA BAU, 2015). It gives the impression that especially the '183-days rule'²⁹ will influence the duration of the posting period. The fact that workers are posted for a short duration, and then return home or move to another construction site contributes, however, to their segregation from the receiving Member States. They do not have the opportunity or interest to build social and economic resources as native workers and even migrant workers (Caro et al., 2015).

Despite these 'natural boundaries' the risk of displacement appears to be very high. Nonetheless, recent research suggests that posted workers seem to complement, rather than substitute native employment in the whole economy by filling more low-skilled job positions in high-wage Member States in a period of market upswing (Della Pellegrina and Saraceno, 2013). However, a closer analysis of the construction sector shows that in some Member States (for 2012 and 2013: Belgium, the United Kingdom, Czech Republic, Latvia, Slovenia and the EU) potential substitution effects have been at play, with overall native construction employment decreasing and posted workers in the sector increasing³⁰ (*Member States below the horizontal axis - Figure 7*). It is even more 'problematic' if there is at the same time a negative relationship between native employment and investment in construction (for 2012 and 2013: only the United Kingdom). For example, Belgium shows in 2012 an increase of investment in construction (+3.4%) but a decrease of the number of employees in the construction sector (-0.2%) while there was a positive change in the number of incoming posted workers (+0.1%). However, *Figure 7* does not say anything about the 'extent' of the substitution effect. This will be for most Member States very limited taking into account the rather marginal impact of posting on national labour markets of the receiving Member States. Moreover, displacement by a posted worker is not necessarily negative if it results afterwards into a higher qualified job or a higher wage for the native worker. However, most research findings point at the 'scarring effects'³¹ of unemployment (Nilsen and Holm, 2011; Arulampalam, 2001).

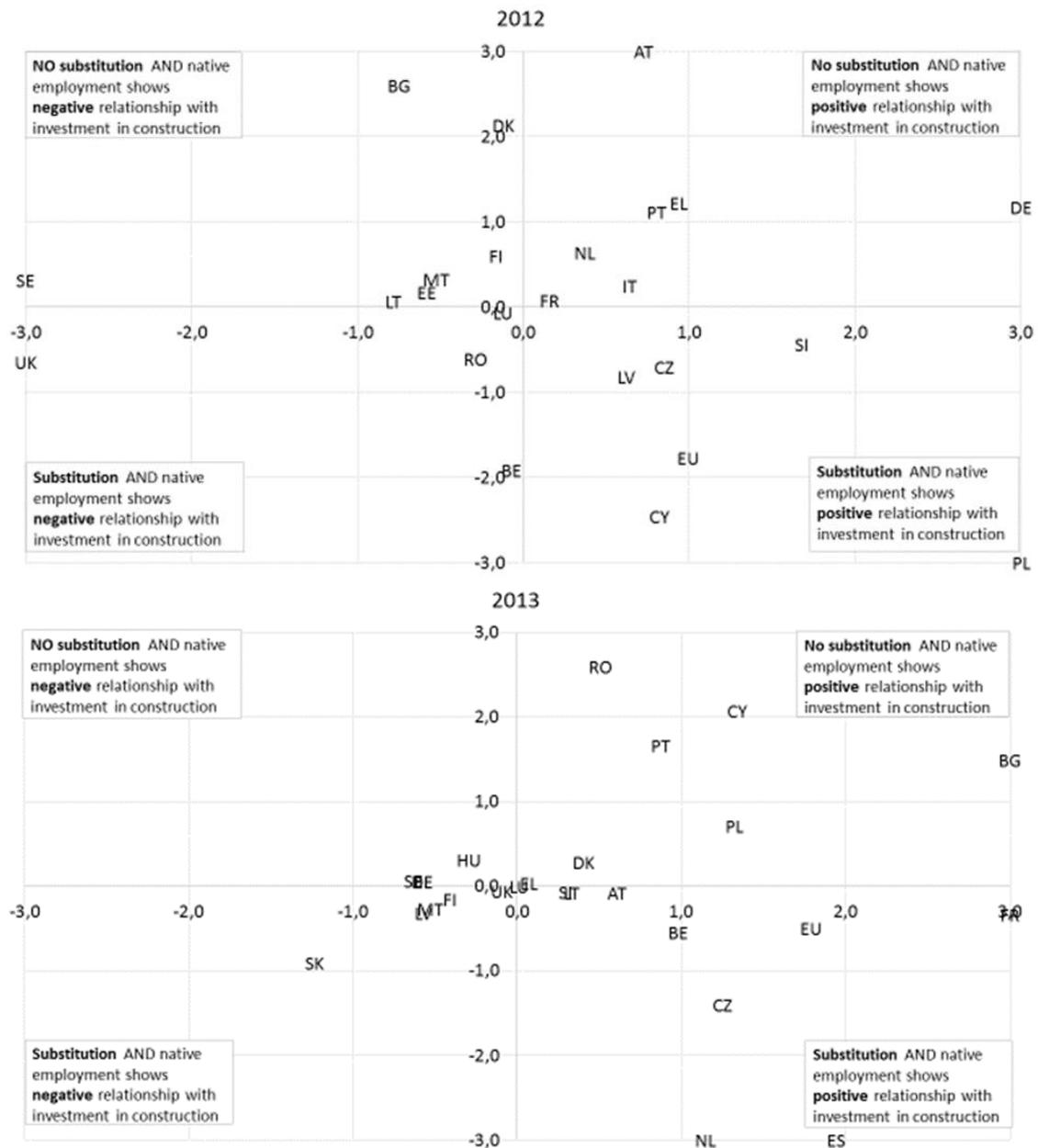
28 Moreover, no maximum duration is defined by Art. 13 of Regulation (EC) No. 883/2004 (active in two or more Member States) and the duration is extendable to 5 years by Art. 16 of the same Regulation (common agreements).

29 It implies that the posted worker who provides services on a temporary basis during a period of less than 183 days within a period of 12 months that starts or ends in the fiscal year in another Member State will be taxed by the sending Member State.

30 Please note that no data on the number of incoming posted workers in the construction sector are available at EU level. Therefore, the reported change in the number of incoming posted workers is based on total numbers.

31 Defined as "the negative long-term effects that unemployment has on future labour market possibilities" (Nilsen and Holm, 2011, p. 1).

Figure 7 Displacement effects in the construction sector, 2012 and 2013



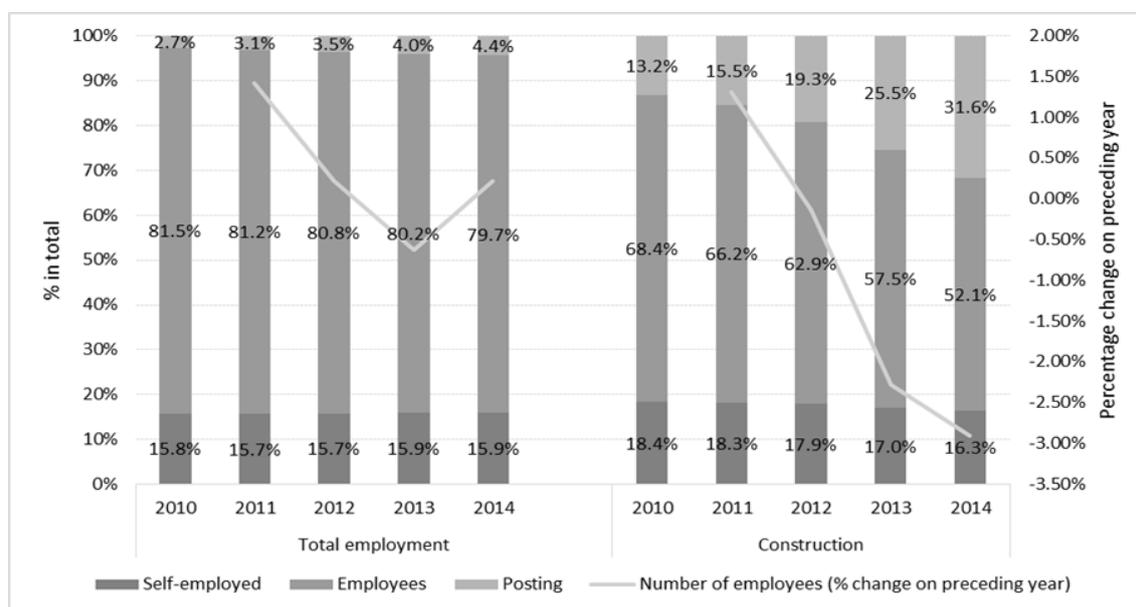
* Vertical axis: Substitution: % change native employment / % change incoming posted workers; Horizontal axis: Labour demand effect: % change native employment / % change investment in construction
 Source Calculations based on Pacolet and De Wispelaere (2015) and Eurostat [sbs_na_con_r2].

Especially the Belgian construction sector has been confronted with a major impact of posting on their total employment (Figure 8). Approximately 4% of total employment in Belgium (native + posting) and 30% of the employment in the Belgian construction sector could be related to incoming posting workers (see also HRW, 2015). Also, about 1 in 10 postings related to self-employment persons. The share of posting in the employment of the Belgian construction sector has doubled between 2011 and 2014. The impact of posting in terms of employment in FTE will nonetheless be lower since most of the posted workers are posted for only a 'short' period. No figures on the period of posting are, however, available. It amounts to approximately 23% of total employment in construction in FTE (native + posting) if we assume that the incoming posted

workers are posted for 6 months to Belgium. The conclusion of high displacement effects in the Belgian construction sector should, however, be nuanced given the high number of available job vacancies in this sector. In fact, within this sector there is a substantial shortage of certain skills ('bottleneck jobs') (VDAB, 2016). It results in the displacement of certain jobs within the construction sector by posted workers while there is a shortage of labour skills to fill other or even the same positions. Therefore, a more detailed breakdown and analysis of the construction sector could be useful.³²

Approximately 4.5% of total employment in the German construction sector are incoming posted workers (SOKA BAU, 2015). The impact in FTE will again be lower as more than 90% of the incoming workers are posted for a period less than 6 months (Ibid.).

Figure 8 Belgium, trends in employment, self-employment and posted workers, all economy and construction sector, 2010-2014



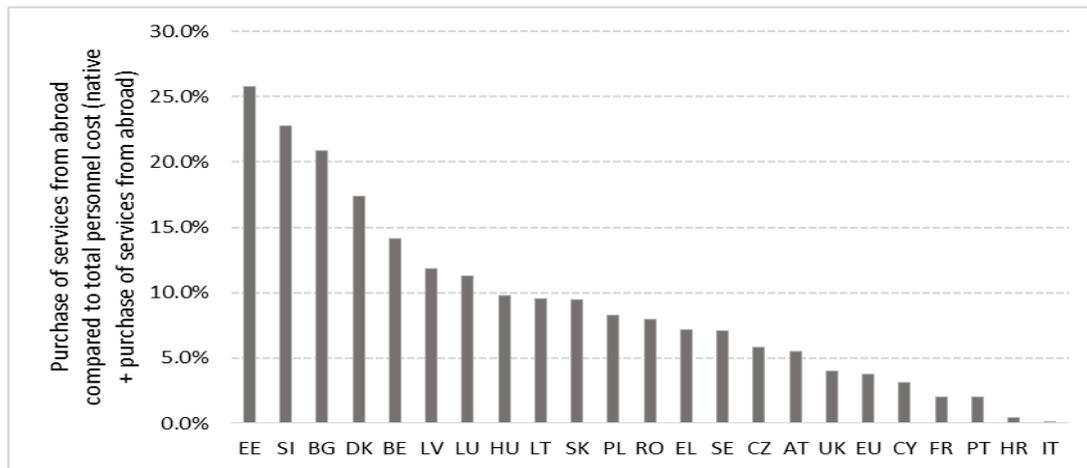
Source Calculations based on LIMOSA and NBB data

4.3 Impact on personnel cost, turnover and value added

The significant increase of the number of posted workers in absolute terms and the displacement effects in some Member States might result in a shift of spending from a high share of the personnel cost for native workers towards a high share of the purchase of services from abroad (a proxy for the personnel cost of posted workers) (Figure 9). The share of purchased services from abroad in the total personnel cost (native + posting) has increased between 2011 and 2013 from 2.6% to 3.7% but remains rather limited. Especially Estonia, Slovenia and Bulgaria show a high share of purchased services from abroad in the total personnel cost (more than 20%).

³² For example, more detailed figures of the impact of posting on the Belgian employment under joint committee 124 for construction are available (CRB, 2015).

Figure 9 Purchase of services from abroad compared to total personnel cost (native + posted), construction sector, 2013

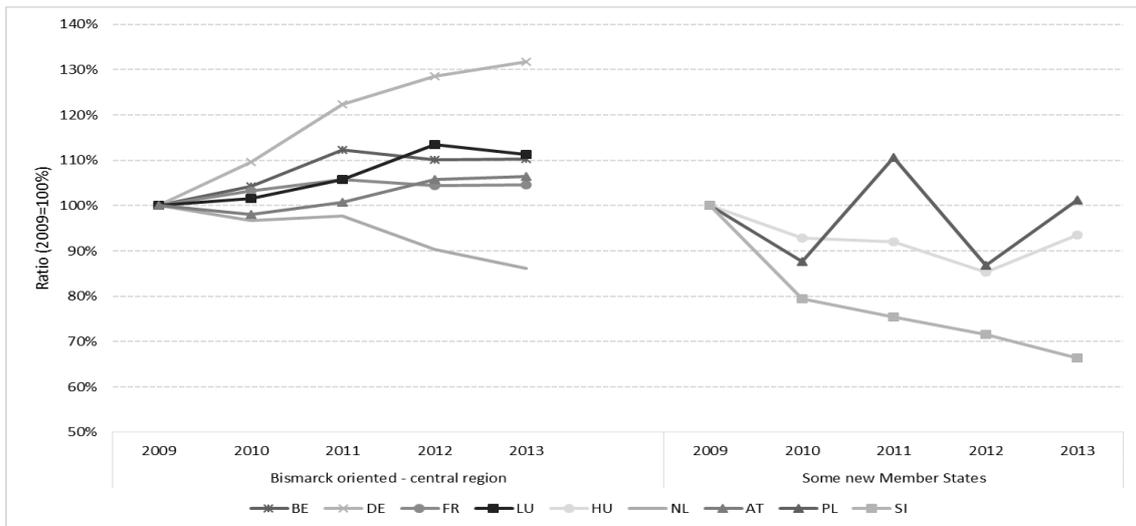


* No information available for Germany, Ireland, Spain, Malta, the Netherlands and Finland.
 Source Calculations based on Eurostat [bop_its6_det] and [sbs_na_con_r2]

Also, the turnover and the value added of the native companies in the ‘main’ receiving Member States increased (Germany, France, Luxembourg, Austria and Belgium) between 2009 and 2013 (Figure 10). This in contrast to the native companies of the ‘main’ sending Member States (Poland, Slovenia and Hungary), which show a negative evolution of their value added. The evolution of the value added in both the Member States of the Bismarck oriented- central region and some of the new Member States is strongly influenced by the evolution of the investment in construction (Figure 11 (positive correlation of 0.55)). There is an upturn of the investments in construction in the Bismarck oriented- central region after the dip of 2009 while the investments in construction in some of the new Member States are still affected by the economic and financial crisis. The evolution nuances at the same time the impact of the posting of workers but it also supports the idea of a dual employer’s market where native contractors, mainly large construction companies, highly benefit from incoming posted workers by subcontracting but negatively influences native subcontractors.³³ As has been pointed out, the upturn of investments in construction in the Bismarck oriented-central region, has not always led to an increase of their native employment (see also Figure 7). The increase of the value added together with the decrease of the number of native employees will also lead to important productivity gains for the native companies (see also HRW, 2015).

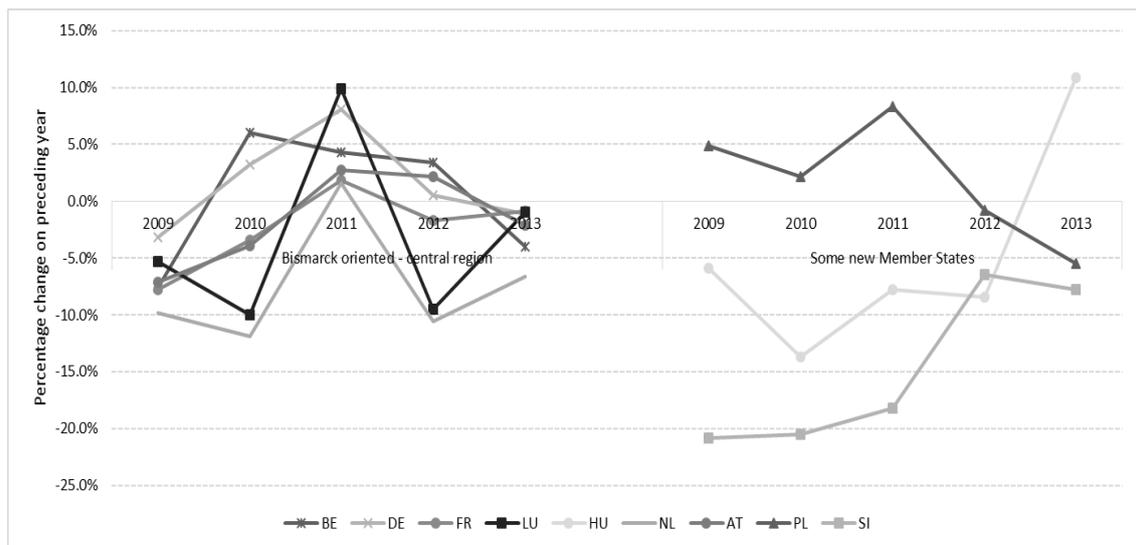
³³ A questionnaire launched to Belgian contractors showed that already in 2007 about 31% to 53% of the native companies had received offers for subcontracting which they suspected to be unfair. Not respecting minimum wages and employment conditions were the most signalled types of unfair competition. Some 24 to 38% of the proposals were of this nature, leading to an average of 12% of unfair offers. They estimated that 25 to 31% of their work was lost by these ‘unfair’ activities (some 1.8 to 2.3 FTE) (Pacoleit and Baeyens, 2007).

Figure 10 Percentage change of value added, construction sector, Bismarck oriented - central region Member States and some new Member States, 2009-2013, 2009=100%



Source Calculations based on Eurostat [sbs_na_con_r2]

Figure 11 Investment in construction, Bismarck oriented - central region Member States and some new Member States, 2009-2013, 2009=100%



Source EC, 2015 and 2013

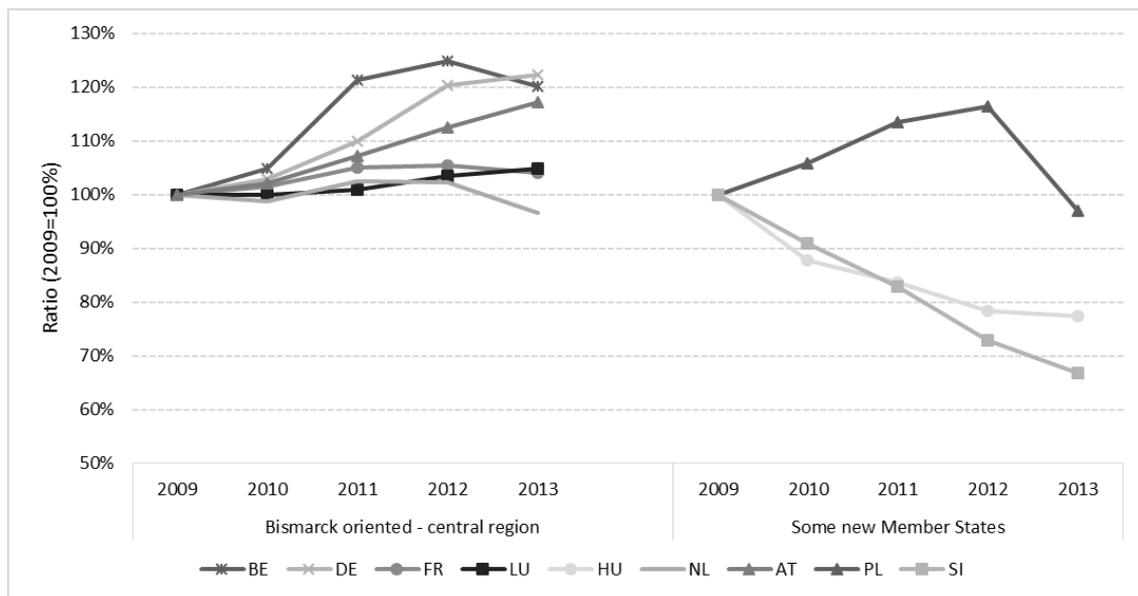
Also from a customer's point of view it could be interesting in case the price offer of the (native) contractor is taking into account the competitive advantage of the 'foreign' service sub-contractor. Especially in a price sensitive sector such as the construction sector, customers may choose for the lowest price offer. However, no research is available that describes to which extent the increased use of posting has influenced building costs.³⁴

³⁴ Nonetheless, the Belgian Construction Confederation concluded recently that it has become cheaper because of posting (De Standaard, *Bouwen is iets goedkoper geworden*, 12 February 2016). The sector mentioned already in 2007 a price dumping effect of 17% based on a questionnaire launched to Belgian contractors (Pacolet and Baeyens, 2007).

4.4 Impact on the amount of social security contributions collected

Despite the increase of the number of posted workers employed in the construction sector (and a decline of the number of native employees) of the Member States within the Bismarck oriented - central region we do not observe a negative impact on the collected social security contributions (Figure 12). In addition, the ‘main’ sending Member States show a negative evolution of their collected social security contributions. The evolution of the social security contributions collected in both the Member States of the Bismarck oriented- central region and some of the new Member States is again influenced by the evolution of the investments in construction (positive correlation of 0.53) (Figure 11).

Figure 12 Percentage change of the social security costs, construction sector, Bismarck oriented - central region Member States and some new Member States, 2009-2013, 2009=100%



Source Calculations based on Eurostat [sbs_na_con_r2]

5 | Conclusion

While the number of posted workers has continued to increase over the past years, there is remarkably little evidence about the economic value and impact of services provided through posting workers. This analysis aims at partially filling this gap, with a focus on the construction sector, by confronting figures collected by the PD A1 Questionnaire with data retrieved from Eurostat on international trade in services, detailed enterprise statistics for construction and labour cost data. In 2014, a total of 1.45 million PDs A1 were issued for the posting of workers according to Article 12 of Regulation (EC) No. 883/2004. This stands for 0.4% of total EU employment and even to only 0.2% of total EU employment in terms of full-time equivalents. Nonetheless, some Member States, and within these Member States some specific sectors, in particular the construction sector, are in relative terms confronted with a significantly high percentage of outgoing and incoming posted workers. Despite the marginal impact of posting on total EU employment, it could be considered as an interesting tool to stimulate intra-EU labour mobility, to stimulate intra-EU competition, to increase the income of posted workers, to create social convergence and finally to support adjustment to ‘asymmetric shocks’. Especially the construction sector is confronted with a high number of incoming posted workers. Despite the relative low share of cross-border services in total EU-turnover of construction, amounting to just 0.8%, the import of services through the posting of workers could have undermined jobs for local employees (‘job

displacement effects'), labour tax revenues and the competitiveness of local employers. In some receiving Member States potential substitution effects have indeed been at play, with native employment decreasing and posted workers in the sector increasing despite the economic upturn of the sector. Especially the Belgian construction sector has been confronted with a major impact of posting. However, despite the significant increase of the number of posted workers in absolute terms and the displacement effects in some Member States, the turnover and the value added of the native companies in the 'main' receiving Member States have still increased as well as the collected social security contributions, mainly influenced by the positive evolution of the investments in this sector.

References

- Abler, J. and Standing, G. (2000), 'Social dumping, catch-up or convergence? Europe in a comparative global context', *Journal of European Social Policy*, Vol. 10, No. 2, p. 99-119.
- Apria, A., Kiss, A., Palvolgú, B. and Turrini, A. (2014), 'Labour mobility and labour market adjustment in the EU', *Economic Papers*, No. 539, EC-DG Economic and Financial Affairs, 37 p.
- Arulampalam, W. (2001), 'Is Unemployment Really Scarring? Effects of Unemployment Experiences on Wages', *The Economic Journal*, Vol. 111, No. 475, p. 585-606.
- Bachmann, R., König, M. and Schaffner, S. (2012), 'Lost in Transition? Minimum Wage Effects on German Construction Workers', *IZA Discussion Paper Series*, No. 6760, 29 p.
- Berghman, J. (1996), 'Social security in a European perspective: present and future challenges', in Pacolet, J. (ed.), *Social Protection and the European Economic and Monetary Union*, Avebury, Aldershot, p. 35-47.
- Borjas, F. J. (2003), 'The labor demand curve is downward sloping: re-examining the impact of immigration on the labor market', *NBER Working Paper Series*, No. 9755, 51 p.
- Caro, E., Berntsen, L., Lillie, N. and Wagner, I. (2015), 'Posted Migration and Segregation in the European Construction Sector', *Journal of Ethnic and Migration Studies*, Vol. 41, No. 10, p. 1600-1620.
- Centrale Raad voor het Bedrijfsleven (CRB) (2015), *De conjunctuur in de bouwsector*, Brussel, 30 p.
- De Wispelaere, F. and Pacolet, J. (2015a), 'Posting of workers: the impact of social security coordination and income taxation law on welfare states', *HIVA Working Paper*, HIVA – KU Leuven, Leuven.
- De Wispelaere, F. and Pacolet, J. (2015b), 'Posting of workers as stabilising mechanism. An enlarged notion of labour mobility as a prerequisite for an optimal currency area', *HIVA Working Paper*, HIVA – KU Leuven, Leuven.
- European Commission (2015), *European Economic Forecast – Autumn 2015 – Statistical Annex*, Brussels.
- European Commission (2014), *Employment and Social Developments in Europe 2014*, DG EMPL, Brussels.
- European Commission (2013), *European Economic Forecast – Autumn 2013 – Statistical Annex*, Brussels.
- European Commission (2012), *Practical guide. The legislation that applies to workers in the European Union (EU), the European Economic Area (EEA) and in Switzerland*, Brussels, 40 p.
- Fondazione Giacomo Brodolini (FGB) and COWI (2016), *Study on wage setting systems and minimum rates of pay applicable to posted workers in accordance with Directive 96/71/EC in a selected number of Member States and sectors*, on behalf of the European Commission – DG EMPL.
- Goudswaard K.P. and van Riel, B. (2004), 'Social protection in Europe: do we really need more coordination?', *Dutch Journal of Labour Studies*, Vol. 20, No. 3, p. 236-48.
- Harvey (2003), 'Privatisation, fragmentation, and inflexible flexibilization in the UK construction industry', in Bosch, G. and Philips, P. (eds.), *Building chaos an international comparison of deregulation in the construction industry*, London, Routledge, p. 188-209.
- Hoge Raad voor de Werkgelegenheid (HRW) (2015), *Verslag 2015*, Brussel.

Jager, J. and Hafner, K.A. (2013), 'The Optimum Currency Area and the EMU. An Assessment in the Context of the Eurozone Crisis', *Intereconomics*, p. 315.

Jauer, J., Liebig T., Martin, J. and Puhani, P. (2014), 'Migration as an Adjustment Mechanism in the crisis? A comparison of Europe and the United States', *IZA Discussion Paper*, No. 7921.

Jorens, Y., Peters, S. and Houwerzijl, M. (2012), *Study on the protection of workers' rights in subcontracting processes in the European Union*, commissioned by DG EMPL - VC/2011/0015, 192 p.

ISMERI (2012), *Preparatory study for an Impact Assessment concerning the possible revision of the legislative framework on the posting of workers in the context of the provision of services*, on behalf of the European Commission – DG EMPL.

Kahanec, M. (2012), 'Labor Mobility in an Enlarged European Union', *IZA Discussion Paper*, No. 6485.

Krueger, A. B. and Mueller, A. I. (2014), A contribution to the Empirics of Reservation Wages, *IZA Discussion Paper*, No. 7957.

Lillie, N. and Wagner, I. (2015), 'Subcontracting, insecurity and posted work: evidence from construction, meat processing and ship building', in Drahokoupil, J., *The outsourcing challenge. Organizing workers across fragmented production networks*, ETUI, p. 157-174.

Maslauskaitė, K. (2014), 'Posted workers in the EU: State of play and regulatory evolution', *Policy Paper*, No. 107, Notre Europe – Jacques Delors Institute, 20 p.

Nilsen, Ø, A. and Holm, K. (2011), Scarring Effects of Unemployment, *IZA Discussion Paper*, No; 6198, 33 p.

OECD (2012), *OECD Economic Surveys: European Union 2012*, OECD Publishing.

Özden, C. and Wagner, M. (2014), 'Immigrant versus Natives? Displacement and Job Creation', *The Work Bank Policy Research Working Paper*, No. 6900, 56 p.

Pacolet, J. and Baeyens, K. (2007), *Deloyale concurrentie in de bouwsector. Een terreinverkenning van mechanismen van sociale fraude, hun omvang en hun gevolgen voor de sector*, HIVA – KU Leuven, 149 p.

Pacolet, J. and De Wispelaere, F. (2015), 'Posting of workers: Report on A1 portable documents issued in 2014, Network Statistics FMSSFE, European Commission, 40 p.

Pacolet J. and De Wispelaere, F. (2014), "'Social dumping' and free movement: Overview of current issues from an economic point of view.' Conference: Mobility of Workers and Pensioners and Coordination of Social Protection in Europe, Leuven, 13 October 2014.

Pellegrina, L., D. and Saraceno, M. (2013), 'Posted workers: Complements or Substitutes for Local Employment? Empirical Evidence from the EU', *Paolo Baffi Centre Research Paper Series*, No. 2013-136.

Pelkmans, J. (2006), *European Integration. Methods and Economic Analysis. Third Edition*, Prentice Hall, 480 p.

Sapir, A. (2015), 'Single Market and Social Protection: Friends or Foes?', *Presentation prepared for an Informal Meeting of Labor Ministers*, September 2015, Bruegel.

SOKA BAU (2015), *Geschäftsbericht 2014*, 64 p.

Van Overmeiren, F. (2008), *Buitenlandse arbeidskrachten op de Belgische arbeidsmarkt. Sociaal recht en vrij verkeer*, Larcier, Gent, 321 p.

van Hoek, A. and Houwerzijl, M. (2011), *Comparative study on the legal aspects of the posting of workers in the framework of the provision of services in the European Union*, commissioned by DG EMPL - VT/2009/0541, 363 p.

VDAB (2016), *Knelpuntberoepen – kansenberoepen 2015*, Brussel, 56 p.

Wagner, B. and Hassel, A. (2015), *Europäische Arbeitskräftemobilität nach Deutschland. Ein Überblick über Entsendung, Arbeitnehmerfreizügigkeit und Niederlassungsfreiheit vor EU-Bürgern in Deutschland*, Hans Böckler Stiftung, 64 p.

Wagner, I. (2015), 'EU posted work and transnational action in the German meat industry', *Transfer: European Review of Labour and Research*, Vol. 21, No. 2, p. 201-213