Exclusion from the labour market in post-socialist EU member states

Márton Csillag*, Flóra Samu*, Ágota Scharle*

* The Budapest Institute

1

Márton Csillag, marton.csillag@budapestinstitute.eu
Flóra Samu, flora.samu@budapestinstitute.eu
Ágota Scharle, agota.scharle@budapestinstitute.eu
The Budapest Institute
http://budapestinstitute.eu

Exclusion from the labour market in post-socialist EU member states

Abstract

This paper examines variations in the labour market exclusion of women and disabled workers using labour force survey data for the EU15 and Central and Eastern European countries that joined the EU in 2004. We measure differences across time and between regions using a Smith-Welch (1989) type dynamic decomposition. We find that in 2002, female employment was higher in the CEE than in the EU15, but this advantage diminished by 2007, due to the much faster rise exhibited by the EU15. The main underlying factor was the marked improvement of the relative employment of older women in the EU15. Female employment tended to stagnate between 2008 and 2011 in both regions. The employment rate of people with disabilities was markedly lower in the CEE as compared to the EU15 and the gap remained practically unchanged between 2002 and 2011. Employment was somewhat higher for men, younger age groups and those with higher educational attainment in both regions, pointing multiple labour market disadvantages. Lastly, we examined time use data to assess if home production may compensate women or disabled people for exclusion from paid work and found no such effect for either group.

Content

1. Introduction

Labour market exclusion increases the risk of social exclusion and poverty, which may be mitigated by generous welfare provisions or reversed by high quality employment and rehabilitation services. While the strong link between poverty and non-employment is evident from all studies describing the determinants of poverty (e.g. Ward et al 2009), the cross country variation in the process of labour market exclusion in Central and Eastern Europe (CEE) has been explored by few studies so far. Existing studies tend to focus either on explaining the overall decline in employment (e.g. Boeri 2000, Balla et al 2006, Munich and Svejnar 2009) or on the role of skills and skill-biased technological change (e.g. Köllő 2006). The aim of this paper is to explore the possible interaction of education, age, gender and disability in the distribution of labour market exclusion. We hope to generate sytlised facts that shed some more light on cross country variations in the exclusion process and may form the basis of hypotheses to be tested by other papers in the Grincoh project.

The analysis covers most EU Member States and relies on survey data. The decomposition of variations in female and disabled employment is based on the EU Labour Force Survey that contains data on the age, sex, education, country, year and household composition, which allows us to construct a variable to indicate if a woman had a child aged below 3. The time use analysis is based on semi-aggregated data from the Harmonised European Time Use Survey (HETUS) and covers only the ten member states for which harmonised data are available.
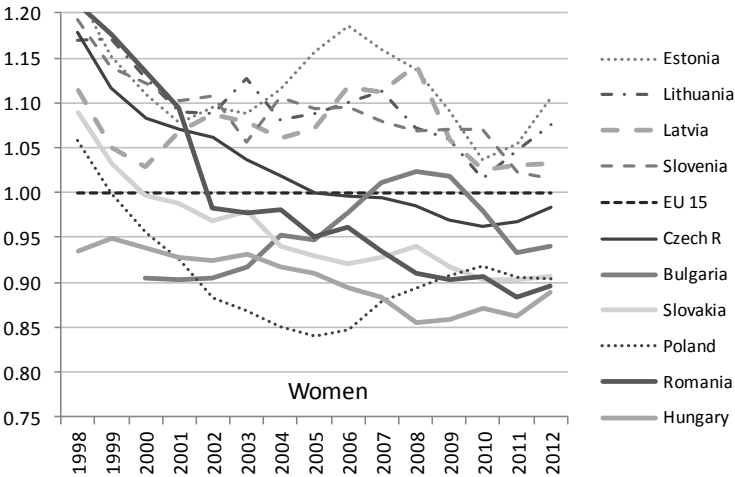
The next section describes changes in female employment, decomposed into differences in the composition of the female labour force and in within-group employment levels (using a Smith-Welch 1989 type decomposition method). Section 3 presents results of a similar exercise for cross country differences in the disabled employment gap. Section 4 examines variations in time spent in home production across country, gender and health status based on semi-aggregated data from the Harmonised European Time Use Survey (Hetus). Section 5 summarises the stylised facts that emerged from the previous sections.

2. Decomposing changes in the female employment rate

Before the transition, CEE countries were characterised by high overall employment and a small male-female employment gap. Cross country dispersion in the Soviet bloc was also smaller than within the EU15, where female employment varied considerably between high levels in Nordic countries and low levels in the South. Female employment dropped as a result of the transitional shock in most CEE countries, and the recovery proved to be slow. As a result, despite the steady rise during the past 15 years, in relative terms female employment tended to decline in most New Member States (NMS) compared to the EU15 (Figure 1).[1]

---

[1] Bulgaria is an exception as female employment increased compared to the EU15 until 2008 (most likely due to the high emigration rate, which reduced labour supply). Romania stands out at the other extreme, where the female employment rate declined in absolute terms as well.

Figure 1. Relative female employment rate in post socialist Member States by gender, EU15=1

Source: Eurostat online (lfsq_ergaed). Population aged 20-64.

The aim of this section is to describe changes in female employment in the last decade, decomposed into differences in the composition of the female labour force and in within-group employment levels. We use a Smith-Welch (1989) type dynamic decomposition, which is an extension of the Oaxaca-Blider decomposition to changes in differences in employment rates. We do a separate analysis for the years before and after the global crisis, assuming that the driving forces of change were different during the two periods. We first compare pooled data for old member states with CEE countries to capture broad trends and then refine the analysis by comparing subgroups of CEE countries to selected benchmark countries (Austria, Spain and the UK).

2.1. The decomposition method and the data set

The procedure is to first estimate a regression model of the determinants of employment separately for two regions in both the beginning and the end of the period under consideration, and then to use the estimated coefficients and the distribution of explanatory variables to account for the changes in the difference between the employment rates across the two regions.

The Smith-Welch decomposition takes the form:

$$\Delta ER^{t2} - \Delta ER^{t1} = \left(\Delta X^{t2} - \Delta X^{t1}\right)b_E^{t2} + \left(\overline{X}_W^{t2} - \overline{X}_W^{t1}\right)\Delta b^{t1} + \Delta X^{t1}\left(b_E^{t2} - b_E^{t1}\right) + \overline{X}_{t2}^W\left(\Delta b_{t2} - \Delta b_{t1}\right)$$

where Δ denotes across-region differences; the indices t1 and t2 stand for the base and second periods, indices E and W represent new member states and EU15 states respectively. In the equation above, the vector of explanatory variables is denoted by *X*, while the estimated regression parameters associated with these variables is represented by *b*. To take a specific example, if one of the elements of *X* is *having a child under age 5*, the associated element of the *b* vector stands for the disadvantage of mothers with young children in finding paid employment.

The Smith-Welch decomposition allows us to attribute the changes in differences in employment rates to four different sources.

4

The first term, the "main effect" reflects the effect of changes in the across-region differences in characteristics. It measures how (relative) employment rates would have moved, had **only** changes in the across-region differences in characteristics occurred. For example, if the fertility rate grew more in 'old member states' than in 'new member states', then the difference between the employment rates of women in the two regions would have decreased (as the presence of young children reduces the employment rate of mothers).

The second term (the "region interaction") tells what part of the change can be attributed to changes in characteristics. It measures this effect, supposing that across-region differences in coefficients stayed at their initial values, while the changes in characteristics were of the same magnitude for the two groups. Continuing the example above, if the penalty associated with having young children was larger in the 'new' than in the 'old' member states, but the fertility rates increased during the period for both regions, then the difference in employment rates between the 'old' and the 'new' member states would have increased.

The third term (the "year interaction"), shows the effect of changes in coefficients, had the differences in characteristics stayed at their starting level and coefficients changed in the same direction and same magnitude for the two regions. Using the fertility example, if the negative effect of having young children on the employment rate of mothers decreased during the period (due to, say, more beneficial legislation and the increase in the number of day-care institutions), while the fertility rate in the 'old' member states is higher, then the difference in the employment rates would have grown.

The final term (the "region-year interaction") reflects the changes in across-region differences in coefficients. The interpretation of this term is straightforward: if the employment penalty of motherhood decreased more in the 'old' member states, then the differences in employment rates across the two regions would be larger at the end of the period than in the beginning.

The dataset we use is the harmonised EU-LFS, for 18 countries, and for the 2001-2011 period. We used individual-level data on women aged 25-59, and we estimated the impact of major demographic variables on employment using linear probability models.[2] The explanatory variables were the following: schooling (3 levels), age groups (7 groups), and whether the person has a child below age 5. We discarded those countries from our dataset for which we had no information on these variables.[3] To allow for the fact that the female employment rate may differ across countries (within a region) due to variation in welfare and labour market institutions, we included a set of country dummies in our regression models. We also analysed the 2001-2007 and the 2007-2011 periods separately, as an attempt to disentangle secular trends in employment and the impact of the global recession.

---

[2] Setting the lower bound of age relatively high was intended to control for the trend in rising enrolment in higher education.

[3] These included Denmark, Finland, Lithuania, Germany and Sweden. Norway was excluded for lack of data for 2001.

2.2. Comparing Old Member States and the CEE countries

Initially, we examined the evolution of the employment rate, its determinants and decomposed the changes in the employment rates across two regions: the CEE countries that recently joined the EU and the Old EU Member States (OMS). Across these two regions we can observe similar movements in women's employment rate between 2001 and 2011: up until the great recession (2007-2008) it increased, while it stagnated around 65-66% between 2008 and 2011. It is worth pointing out however that the expansion of women's employment in the years 2001-2007 was much more marked in the OMS than in the CEE countries: it increased by 6 percentage points in the former group of countries as opposed to a 1.5 percentage point gain in the latter group. This means that, while in 2001 the employment rate of women in the new member states was roughly 3 percentage points higher than in the "old" member states, a decade later women's employment rate in the EU15 was slightly higher.

Let us first briefly look at the evolution of background characteristics in these groups of countries. The most important phenomenon is that in the OMS, the distribution of women's educational attainment is rather different than in CEE countries, with a much lower proportion of women with secondary education, and a much higher proportion in both high and low education categories. There was also an extensive skill upgrading among working age women in both regions: the proportion of women with tertiary education has increased by 9-10 percentage points, and the proportion of women with no secondary education has dropped. However, due to the more pronounced decline in the proportion of working-age women with low levels of education in the EU15 states (it fell from 46.7% to 32.6% in the space of ten years, as opposed to the decrease from 22.7% to 14.5% in the CEE), educational upgrading was more far-reaching in the OMS than in the CEE.

What is the impact of the background characteristics on women's employment and how did this differ across the two regions and over the decade we analyzed? There are some differences across the OMS and the CEE in terms of returns to education,[4] but the gap in employment rates between women with lower versus high level of education was roughly around 30 percentage points. While there was no change in the education-employment gradient in the OMS throughout the decade, it increased by 25% in the CEE countries, to 38 percentage points. The **age-employment** profiles follow a similar, U shaped pattern in both regions, and there are signs of improvement of employment prospects for older workers. There appear to be three important differences across the two regions: (a) age-employment profiles are much "flatter" in the EU15; (b) the increase in the relative employment rates of older women (50-59) was more pronounced in the OMS and started already in the first half of the decade. (c) Finally, maternal employment rates seem to have diverged during the past decade. While in 2001 the employment rate of mothers with small children was similar across the two regions, it deteriorated in the CEE countries as opposed to the small improvement in the employment opportunities experienced by mothers in the EU15.

---

[4] The negative penalty attached to low education levels is larger in the West, and the positive gains of higher education levels are bigger in the East.

Let us turn to the results of the decompositions, to show the relative contributions of the above-mentioned phenomena to the changes in overall employment rates.

In the 2001-2007 period, the gap between the employment rates of the two regions closed by 4.5 percentage points, and the single largest factor behind this – accounting for 2.5 percentage points - was the improvement of the relative employment of older women in the OMS (the "region-year interaction" effect of age). A further 1.1 percentage points can be explained by the fact that there was no improvement of the employment rate of mothers with young children in CEE countries, but the employment penalty of child rearing in the EU15 countries decreased. Finally, the slightly greater pace of educational upgrading in the OMS added 0.7 percentage points to their advantage in the employment rate of women compared to the CEE.

Throughout the recent global recession (2007-2011) the employment rate of women in the EU15 countries stagnated, while there was a small, 1 percentage point overall improvement in the CEE. The decomposition of pooled data for the two regions did not shed much light on what was behind these changes, as we could only attribute the observed gap to factors not captured by the demographic variables in our regression models (it was explained mainly by the "region-year interaction" for the constant term).

## 2.3. Comparing subgroups of CEE countries to selected benchmark countries

While – as we noted above – the overall female employment rate only slightly improved in the decade of 2001-2011, this masks marked differences across groups of countries. Hence, the next approach we take is to distinguish three subgroups within CEE countries based on the evolution of the female employment rate, and do the decomposition separately for these groups.[5] The first group is characterised by a continuous, albeit small decline in the female employment rate throughout the decade, and includes the three of the Visegrad Four (the Czech and Slovak Republics and Hungary), along with Romania and Slovenia (let us call them the „Fall" group). By contrast, in the Baltic states and Bulgaria, there was a very pronounced increase in female employment rate before the global crisis, followed by a significant decline in most recent years (the „Mixed" group). Lastly, the third CEE subgroup is Poland, charaterised by a slow but steady rise in the female employment rate between 2001 and 2011 (the „Rise" group). In a similar vein to the previous analysis, we compare these three groups of countries to selected OMS. We chose Austria, Spain, and the UK as benchmarks and computed the same decomposition for each.

The three OMS benchmark countries represent three rather different scenarios in the evolution of female employment. Austria is similar to the „Rise" group described above: female employment tended to increase for most of the past decade, especially in the mid 2000s, and continuted to rise during the crisis at a pace above the slowing average of the EU15. The Spanish relative female employment rate is lower than in any CEE country (even Poland) but in terms of recent trends it resembles the Mixed group. Lastly, the United Kingdom may be likened to the Fall group. The UK exhibited a fairly high and stable female employment rate of around 71% during the past decade and

---

[5] We calculated a similar decomposition of the evolution of long term unemployment rates. The results were largely the same as for employment rates, so we do not discuss them in the paper but would be ready to share on request.

the educational composition of the labour force was relatively similar to that of the Visegrad Four (especially in contrast to Nordic countries where the share of graduates is considerably higher). These three benchmark countries also represent three welfare regimes: the Continental, the Southern and the Anglo-Saxon. Sweden or some other Nordic countries would be instructive to add as a fourth benchmark (representing a high, albeit declining rate in relative terms, and the Nordic welfare model) but this was not feasible due to data constraints.[6]

Figure 2 Relative female employment rate in subgroups of the CEE (EU15=1)
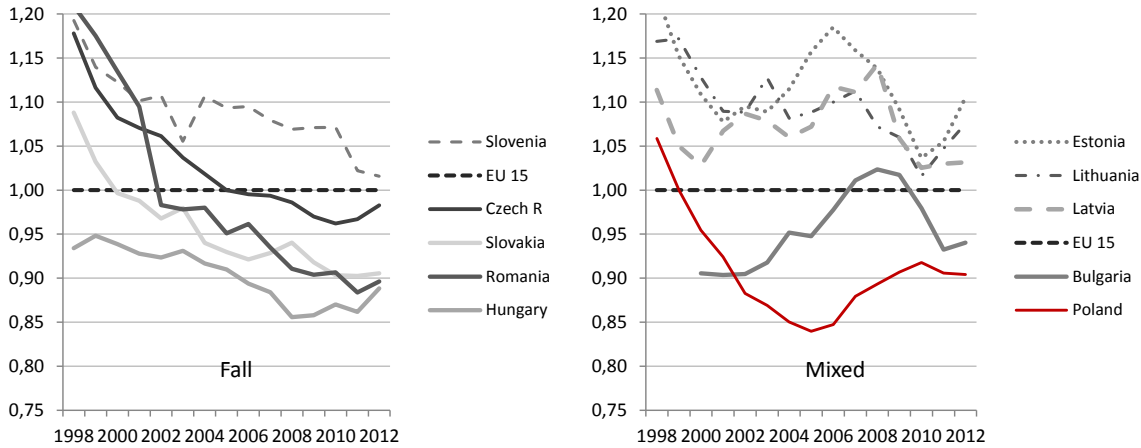
Source: Eurostat online (lfsq_ergaed). Population aged 20-64.

Figure 3 Absolute (%) and relative (EU15=1) female employment rate in the benchmark countries, the Czech Republic and Sweden
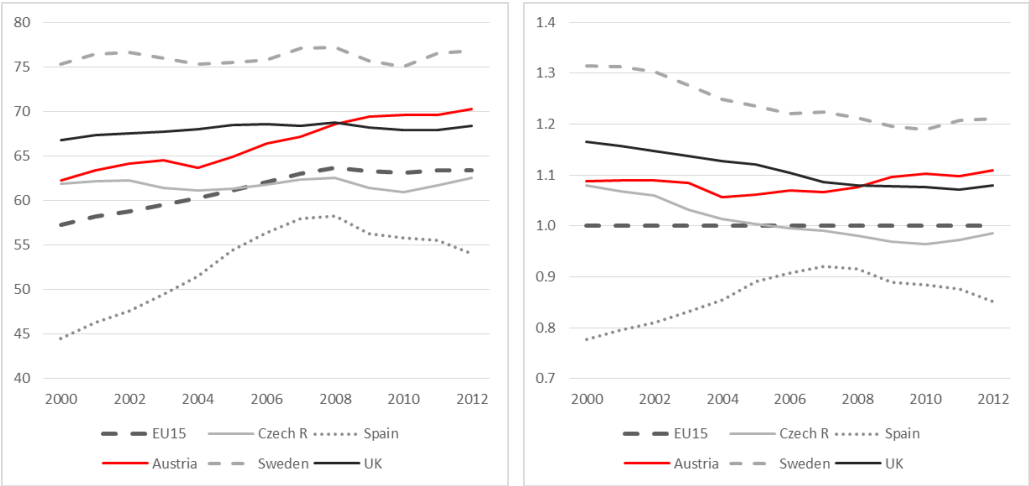
Source: Eurostat online (lfsq_ergaed). Population aged 20-64.

---

[6] There is no data to allow the identification of mothers in the EU LFS for the Nordic countries. As welfare services and benefits supporting mothers is an important determinant of the high Nordic participation rates, we did not expect to be able to explain much of the gap without the motherhood variable and hence chose not to include a Nordic benchmark country.

The calculations for the three benchmark countries are presented in the Appendix. As the main results are the same for each of the three cases, in the following we only discuss the decompositions with respect to the UK.

The female employment rate in the „Fall" group was lower than in the UK by 4.5 percentage points in 2001 (66.6% vs. 71.1%), and this gap widened to 7.5 percentage points by 2007.[7] The main driver of this divergence is the "region-year" interaction term. First of all, the employment penalty associated with raising small children has substantially increased (by 8 percentage points) in the CEE countries, while the employment position of mothers has slightly ameliorated in the UK, which led to a decrease in the employment rate of women in the CEE relative to the UK by 2.3 percentage points. Second, while the employment gap between low and high educated women was growing in the UK during this period, the increase in the employment-education gradient in the first group of CEE countries was even larger. This phenomenon, and in particular the large degradation of the employment rate of low skilled women in CEE contributed to a 1.9 percentage point increase in the employment gap vis-a-vis the UK. The fact that the relative employment of older women improved much less in the CEE countries than in the UK, further widened the employment gap by 1.2 percentage points. The faster amelioration of the composition of women (especially in terms of education) in the UK than in the CEE, thus the "main effect" also contributed to the employment rate of women in the first CEE region falling behind of that in the UK (by 1.6 percentage points).

Countering the above-mentioned changes was the deterioration of the non-measured determinants of female employment in the UK that decreased the female employment rate relative to the CEE by 3.4 percentage points. Comparing the employment outcomes of women in the wake of the great recession (2007-2011), we can observe largely the reverse of the processes mentioned above. This meant that the improvement of relative employment of older women in the CEE countries, the worsening of the employment opportunities of women with young children and of low-skill women in the UK all contributed to the slight decrease in the relative employment in the UK (by 2 percentage points).

There is a large disparity between the „Fall" group and the „Mixed" group composed of the Baltics and Bulgaria, where prior to the crisis, the employment rate of women improved by 10.5 percentage points between 2001 and 2007. Interestingly, contrasting the determinants of female employment with the UK, we can disentangle very little of the reasons behind this rise. This means that besides the positive phenomenon of the increase in the employment of women between age 55-59, we could observe a deterioration of the employment probability of low skill women, and women with children. So we can only attribute the tremendous increase in female employment opportunities to a general improvement in the labour market in these countries.[8] After the great recession, there was a small drop in the employment of women in the Baltics and Bulgaria, and this slightly exceeded that observed in the UK (by 0.5 percentage points). However, its is again due to factors not accounted for in our regression models.

---

[7] This was due to a 1 percentage point decrease in the employment rate in the CEE and a 2 percentage point increase in the UK.

[8] Again, in the case Bulgaria, this was most likely a result of increasing emigration which implied a substantial drop in the labour force.

Finally we turn to analysing the differences in the time-path of female employment between Poland (the „Rise group") and the UK. While the level of female employment was 11.5 percentage points lower in Poland, before 2008, it increased by a similar extent in the two countries, by 1.5-2 percentage points. In this initial period, the labour market position of women would have deteriorated in Poland due to the fall of the employment probability of older women (50-59) and of women with small children, had it not been for a general improvement of women's opportunities, and to a lesser extent, for the rising employment rate of low educated women. The rise in the share of high educated women also paid a minor role.[9]

In the period 2007-2011 the evolution of employment rates of Poland and the UK diverged: while there was a fall in the UK, the steady increase in women's employment probability continued in Poland. The main reason behind this was that the employment chances of women above age 50 improved substantially in Poland. A further, less important factor was the relatively large share of highly educated women combined with the increasing labour market advantage of women who completed higher education (the "year interaction").

Figure 4. Decomposing change in female employment 2001-2007 and 2007-2011
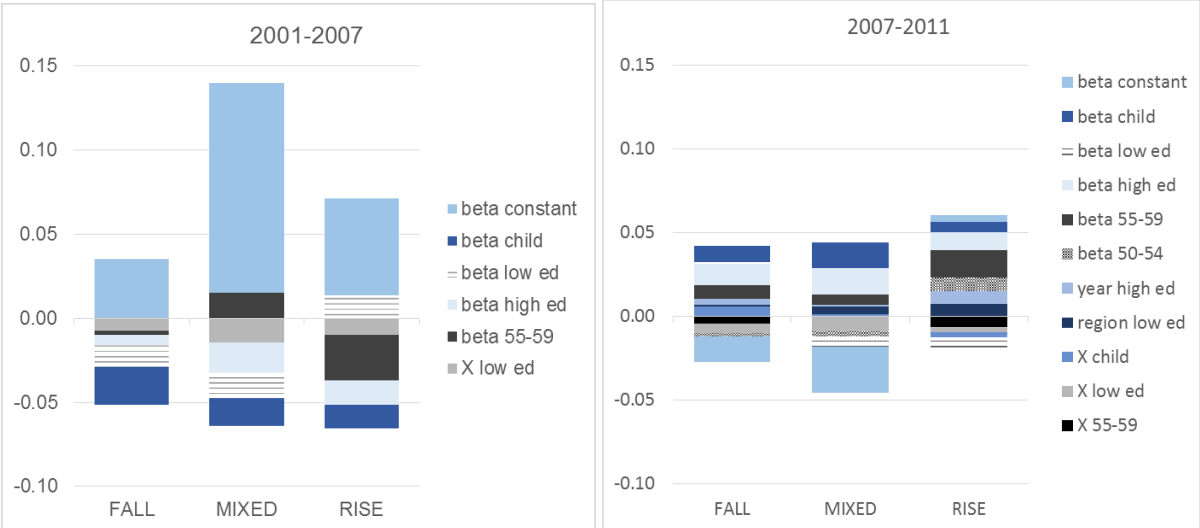
Source: Authors' calculations based on LFS data. Population aged 25-64.

Before the global crisis, structural idiosyncrasies of the CEE appear as important as the general performance of the labour market in explaining the gap between CEE and OMS, but much less so in explaining the variation within the CEE. The child penalty and the slower decline in the share of the low educated reduced female employment relative to OMS in all CEE. The disadvantage of low educated workers further contributed to the gap in Fall and Mixed countries. Poland stands out in reducing the disadvantage of low educated workers: indeed this factor explains some of the growth in Poland. Lastly, the rise in the employment rate of older women explains some of the initial growth in Mixed countries (with a much larger part explained by general labour market performance).

---

[9] The rise was much weaker in the Fall and Mixed group. It was only significant though in comparison to the Austrian case, and not when compared to the UK or Spain.

During and after the crisis, structural factors seem to have been dominated by general economic performance, i.e. the ability of governments (economies) to weather the crisis. Poland seems an exception, where the marked improvement in the employment rate of older women played a strong role in sustaining the increase of overall female employment.[10]

It must be noted that the effect of the constant term may capture changes in discrimination as well as general labour market developments. However, in comparison to male employment, female employment tended to increase (except in Romania) in relative terms at least, during the crisis, which suggests that a rise in discrimination against women played a minor role, if any at all.

3. Decomposing cross country variation in the disabled employment gap

This section examines cross-country variation in the employment of people with disabilities. In this case, data on the employment of disabled workers are only available for 2002 and 2011 as these were the two years when the EU LFS contained an ad-hoc questionnaire on disability. As in the case of women, we account for the labour market exclusion of older workers and the low educated as well, by analysing the contribution of these characteristics to (the change in) the overall level of employment.

Figure 5. Disabled and total employment in 2011
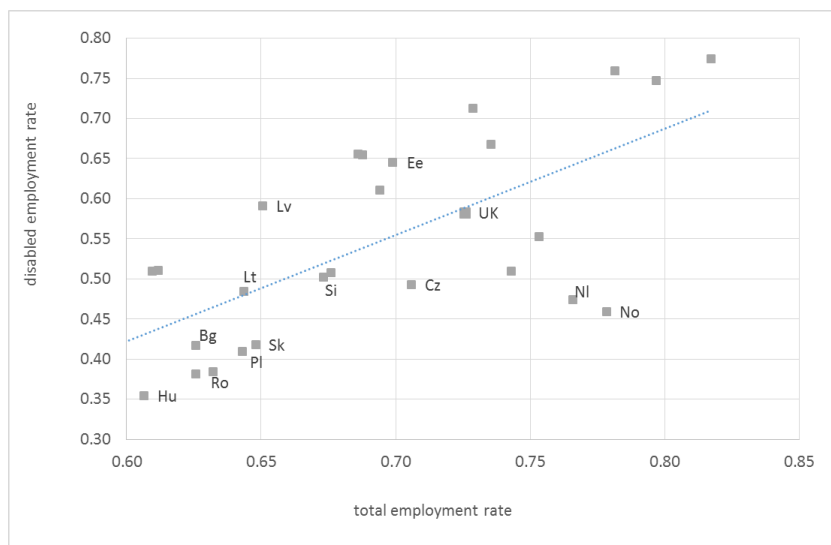
Source: Authors' calculations based on LFS data. Population aged 18-64.

Though we use data based on a harmonised questionnaire and collection method, there remain some problems with comparability. Given that health outcomes are relatively homogenous within Europe (or vary mainly with the level of income), one would expect relatively little cross country variation in the incidence of disability within the working age population and no definite correlation between the incidence of disability and the employment rate of the disabled. The LFS data for 2002 refute both these expectations: we find that the incidence of disability varies between 5.8 % in

---

[10] This is apparent especially in the comparison with Austria and the UK, and less so in comparison with Spain, where the employment rate of older women also increased markedy after 2007.

Romania and 32.2 % in Finland and the employment rate of disabled people increases with the incidence of disability, whether it is measured in absolute terms or relative to the employment rate of the non-disabled population (see Figure A1 in the Appendix).

There is considerable variation in the disabled employment rate within the EU (see Figure 5). The employment rate of disabled persons is closely correlated with the overall employment rate, and is typically about 20 % lower than the total employment rate. The disabled employment gap (the difference between the employment rate for disabled and non-disabled persons) tends to be wider in CEE countries than in the EU15.

In this section we examine the gap in the employment rate of disabled people between CEE countries and the EU15, and the change in this gap between 2002 and 2011, using the same decomposition technique outlined in Section 2.1.

It should be noted that our analysis was constrained by sample limitations. We relied on the 'Supplemental questionnaire on disabled persons' of the EU-LFS for the years 2002 and 2011 to identify persons suffering from a long-term illness or disability. The micro-data for this supplemental questionnaire is not available for some CEE countries (Bulgaria, Latvia, Poland) and for Greece.[11] The non-response rate for the supplemental questionnaire is relatively high in many of the countries, which may potentially induce a bias into our analysis. In the absense of alternative high quality data sources on disability, we could explore the extent of this bias.

Before turning to the regression models and the decomposition results, let us note the large difference in employment rates of disabled persons across the two regions: in 2002 it was only 26.1 percent in the three CEE countries in our sample, while across the EU15 countries it was 40.7 percent. By 2011, employment increased slightly in both regions, to 27.2 percent in the CEE and 41.9 percent in the EU15, leaving the gap practically unchanged. During the early years of the transition a large number of workers in CEE countries were offered permanent disability benefits (where the replacement rate is relatively high) as opposed to unemployment as a route to exit the labour force. Part of the East-West gap may be explained by the legacy of these policies, to the extent that these persons are likely to have a much weaker attachment to the labour market than disabled persons in the EU15.

When looking at the regression coefficients (see Table 1 below and further details in Table 26 in the Appendix), we can note some differences across the two regions. First, disabled men fare somewhat better than disabled women in both groups, but especially in the EU15 countries. Second, while older age groups are less likely to work in both old and new member states, the link between age and employment seems much weaker in the CEE countries. Third, higher education increases the probability in both regions, but in a slightly different pattern: in the West, it is only the low educated who face a significantly lower chance of employment, while in the CEE, this applies to people with secondary and primary education as well.

---

[11] Data for Cyprus and Malta are also unavailable but these countries were not part of our sample.

Table 1. Decomposing the employment rate of disabled people in Old and New Member States in 2002 and 2011

	main	region	year	reg*yr
Age	0.031	-0.008	-0.009	-0.002
Education	0.003	0.000	0.004	-0.010
Sex	-0.003	0.000	-0.001	0.000
Constant	0	0	0	0.001
Total	0.031	-0.008	-0.007	-0.011

The decomposition reveals a mixture of opposing trends behind the seemingly stable difference between disabled employment rates in the two regions. The main factor that contributed to the widening in the East-West gap was diverging evolution of the age composition of disabled people in the CEE as compared to the EU15. Older age reduces the likelihood of employment in both regions, but the share of those aged between 55 and 64 increased much faster in the CEE (by 14% points) than in the West (only 2 %points) between 2002 and 2011. A further, much smaller effect that also widened the gap can be attributed to the increase in the share of higher educated disabled persons which was almost twice as fast in the EU15 (3%points) than in CEE countries (1.6 %points).

Three other factors acted in the opposite direction, reducing the East-West gap. The first of these was that the share of the groups aged 50-64 increased in both regions, while the employment disadvantage of these age groups was larger in the old member states. The second effect was that the employment disadvantage of those aged 55-64 decreased in both regions, and this had a larger impact on the overall employment rate in the CEE countries, where the share of pre-retirement age persons was larger at the beginning of the period. The third factor concerned the disadvantage of the low educated, which decreased considerably in the CEE countries while slightly increased in the EU15.

The latter effect is especially notable as it suggests that the multiple disadvantage of low education and disability is somewhat less likely to lead to labour market exclusion as in 2002. The apparent influence of the age composition on the overall disabled employment rate is difficult to interpret as changes in the age-composition of disabled persons can be a result of long term demographic trends, changes in health status of the population or in the rules determining access to disability pensions as well.

4. Home production as potential compensation for low participation in paid work

This section explores whether unpaid household production may compensate women or people with disabilities for their exclusion from paid work. The analysis is based on semi-aggregated data from the Harmonised European Time Use Survey, where average time use is available broken down by type of activity, gender, work status, country of residence and health status.[12] We use a narrow definition of home production, including only food preparation, handicraft, tending domestic animals and construction and repairs.[13]

We expected to find some compensation in the case of women, and none in the case of disabled persons, based on existing evidence of the relative productivity of women in domestic work. The results are somewhat surprising as we found no compensatory role for women either. Compared to men, women work about 40% more in the household in countries with a more emancipated role division and about 80% more in countries with a more traditional role division. This difference is practically unaffected by work status, except that women temporarily absent from work spend somewhat less time on home production (see Table 2. and for further detail, Table 29 in the Appendix).

Table 2. Time spent on home production depending on individual characteristics (selected variables)

Controlling for disability	Coef.	Std. Err.	Controlling for education	Coef.	Std. Err.
work status (ref: works)			work status (ref:works)		
absent from work	0.4897*	0.0848	absent from work	0.2479*	0.0820
not working	0.6637*	0.0656	not working	0.4932*	0.0505
no answer	0.1314	0.1773			
female	0.4264*	0.0732	female	0.5825*	0.0912
female*traditional	0.3799*	0.0644	female*primary	0.0948	0.0862
female*absent	-0.1585	0.0857	female*secondary	-0.0231	0.0816
female*not working	-0.0876	0.0742	female*traditional	0.0287	0.0647
female*no answer	0.0591	0.2412	female*work	0.0791	0.0682
female*disabled	0.0842	0.0659	female*absent	0.1927	0.1081
			edu		
			secondary	-0.0440	0.0533
			tertiary	-0.1637*	0.0653
			age		
disabled or ill	0.0589	0.0627	25-44	0.5679*	0.0552
disabled*absent	-0.1146	0.0853	45-64	0.7264*	0.0553
disabled*not working	-0.2011*	0.0743			
constant	3.4533*	0.0710	constant	3.2389*	0.0883

*⁺ traditional denotes residence in a country where the country coefficient for time spent on home production is significantly higher for women compared to men, as in Bg, Es, Lt, Lv, Pl (based on a similar regression run separately for men and women). * significant at 1%.*

---

[12] We accessed HETUS data via https://www.h2scb.se/tus/tus/Login.html. This source allows cross tabulations in a maximum of 5 dimensions at a time. The detailed results are presented in Tables 27-28 in the Appendix.

[13] The idea was to include only the activities that may yield significant savings in the expenses of the household.

Results are similar if we control for education and age group: gender remains a stronger determinant of the amount of housework than employment status and non-employed women do not spend more time on household duties than women in paid employment (see Table 30). When controlling for education (but not for disability), we find that women temporarily absent from their job spend somewhat more time on household chores than women who worked in their job during the reference week.

Results for people with a disability or chronic illness seem closer to what we expected. In general, they spend about the same time on home production as their non-disabled peers, except when they do not have a paid job. In the latter case, they spend significantly **less** time on domestic work (Table 29). Thus, home production does not compensate disabled persons for their exclusion from paid work, on the contrary, they seem to have an additional disadvantage in this respect.

Summary

The paper assessed cross-country variation in the labour market exclusion of women and disabled workers using the European Labour Force Survey and also examined time spent in unpaid household production that may compensate either group for their exclusion from paid work, using data from the European Time Use Survey.

Female employment increased in Europe until the global recession set in, while it stagnated between 2008 and 2011. The expansion of women's employment in the years between 2001 and 2007 was much more marked in the EU15 than in the CEE countries, so that the former advantage of CEE countries turned into a slight disadvantage by the end of the period.

In the 2001-2007 period the single largest factor behind the narrowing of the East-West gap was the improvement of the relative employment rate of older women in the EU15, while the diverging trends in the employment penalty of child rearing also played a (much smaller) role.

Between 2007 and 2011, female employment stagnated in the EU15 countries and increased slightly in the CEE, and the gap was due mainly to factors not captured by demographic variables.

Before the global crisis, structural idiosyncrasies of the CEE appear as important as the general performance of the labour market in explaining the gap between CEE and the EU15, but much less so in explaining the variation within the CEE. The child penalty and the slower decline in the share of the low educated reduced female employment relative to the EU15 in all CEE. The disadvantage of low educated workers further contributed to the gap in those CEE countries where female employment tended to decline or showed no clear trend (the Czech and Slovak Republics, Hungary, Romania and Slovenia).

During and after the crisis, structural factors seem to have been superseded by the general economic performance in the CEE, i.e. the ability of governments (economies) to weather the crisis. Poland seems an exception, where the marked improvement in the employment rate of older women played a strong role in sustaining the increase of overall female employment.

The employment rate of people with disabilities had been markedly lower in the CEE as compared to the EU15 and the gap remained practically unchanged between 2002 and 2011. Employment is

somewhat higher for men, younger age groups and those with a higher educational attainment in both regions, pointing to a considerable incidence of multiple labour market disadvantages. The decomposition revealed a mixture of opposing, but mainly age-related effects behind the seemingly stable difference between disabled employment rates in the two regions. These are difficult to interpret as changes in the age-composition of disabled persons can be a result of long term demographic trends, changes in the health status of the population or in the rules determining access to disability pensions as well. Importantly, the disadvantage of the low educated decreased considerably in the CEE countries while slightly increased in the EU15, implying a modest contribution to the narrowing of the East-West gap. This also suggests that the multiple disadvantage of low education and disability was somewhat less likely to lead to labour market exclusion in 2011 (compared to 2002).

The last section explored whether unpaid household production may compensate women or people with disabilities for their exclusion from paid work. We found no compensatory role for women, nor for disabled people. Gender is a stronger determinant of the amount of housework than employment status and non-employed women do not spend more time on household duties than women in paid employment, even when controlling for education and age. People with a disability or chronic illness spend about the same time on home production as their non-disabled peers, except when they do not have a paid job, in which case they spend significantly less time on domestic work.

While the general trend has been of declining labour market exclusion for both the CEE and the EU15, and for both women and people with disabilities, improvements have been much more pronounced in the EU15. This calls for further research to explore the factors that hinder policy developments that may support the labour market inclusion of vulnerable groups in the CEE, particularly for older women, mothers with small children and people with disabilities. The persistent disadvantage of the low educated highlights the importance of studying barriers to education reform as well as conditions that may increase labour demand for the unskilled.

References

Balla, Katalin, Köllő, János and Simonovits, András (2008): Transition with heterogeneous labor, Structural Change and Economic Dynamics, Elsevier, vol. 19(3), pages 203-220, September

Boeri, Tito (2000) Structural change, welfare system and labour reallocation, OUP.

Fodor, Éva (2005): Women at work: The Status of Women in the Labour Markets of the Czech Republic, Hungary and Poland, Policy Report on Gender and Development: 10 Years after Beijing, UN

Köllő, János (2006): Workplace literacy requirements and unskilled employment in East-Central and Western Europe: Evidence from the International Adult Literacy Survey (IALS). Budapest working papers on the labour market 2006/7. http://www.econ.core.hu/doc/bwp/bwp/bwp0607.pdf

Lanain, P and Rawdanowitz, L (2004) Enhancing income convergence in Central Europe after EU accession, OECD

Munich, Daniel and Svejnar, Jan (2009) Unemployment and Worker-Firm Matching Theory and Evidence from East and West Europe, World Bank WP 4810.

Ward, Terry, Orsolya Lelkes, Holly Sutherland, István György Tóth (2009)(eds): European Inequalities: Social Inclusion and Income Distribution in the European Union. Budapest: TÁRKI Social Research Institute Inc.

Eichhorst, Werner et al (2010): The Mobility and Integration of People with Disabilities into the Labour Market, IZA Research Report No. 29

http://www.iza.org/en/webcontent/publications/reports/report_pdfs/iza_report_29.pdf

Appendix

Figure A1. Employment and incidence of disability in Europe, 2002
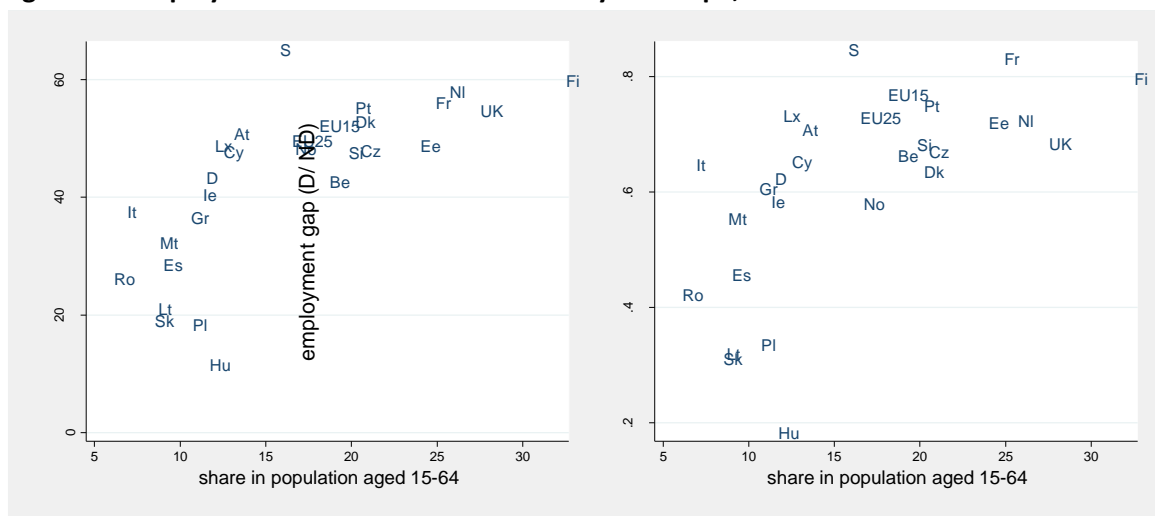
Source: Own calculations using data from the EU LFS ad-hoc module of 2002 (Eurostat), except for Poland and Sweden, where we used data provided by the respective national statistical offices. The employment gap is measured as the ratio of the respective employment rates of people with disabilities and the non-disabled.

Table 1. Decomposition of difference in differentials between New and Old Member States in Employment Rate of Women in 2001 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
east2001	0.053	0.100	0.113	0.088	-0.001	-0.273	0.176	-0.132	-0.198	0.649
west2001	0.041	0.044	0.039	0.015	-0.059	-0.227	0.103	-0.190	-0.184	0.717
east2011	0.066	0.115	0.132	0.126	0.062	-0.141	0.183	-0.201	-0.250	0.638
west2011	0.056	0.081	0.088	0.088	0.061	-0.062	0.096	-0.203	-0.168	0.682

Table 2. Decomposition of difference in differentials between New and Old Member States in Employment Rate of Women in 2001 and 2011 - Decomposition Results for Variables

	main	region	year	reg*yr
Age	0.004	0.000	0.005	0.025
Educ	0.009	-0.003	-0.004	0.005
Child	0.003	0.000	0.000	0.012
Constant	0	0	0	-0.024
Total	0.015	-0.003	0.002	0.018

Table 3. Decomposition of difference in differentials between New and Old Member States in Employment Rate of Women in 2001 and 2007 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
east2001	0.053	0.100	0.113	0.088	-0.001	-0.273	0.176	-0.132	-0.198	0.649
west2001	0.041	0.044	0.039	0.015	-0.059	-0.227	0.103	-0.190	-0.184	0.717
east2007	0.057	0.087	0.106	0.085	-0.008	-0.266	0.187	-0.169	-0.253	0.674
west2007	0.037	0.058	0.050	0.043	-0.008	-0.166	0.097	-0.191	-0.173	0.736

Table 4. Decomposition of difference in differentials between New and Old Member States in Employment Rate of Women in 2001 and 2007 - Decomposition Results for Variables

	main	region	year	reg*yr
Age	0.003	-0.001	0.004	0.026
Educ	0.007	-0.001	-0.001	0.003
Child	0.000	0.000	0.000	0.011
Constant	0	0	0	-0.006
Total	0.011	-0.001	0.004	0.033

Table 5. Decomposition of difference in differentials between New and Old Member States in Employment Rate of Women in 2007 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
east2007	0.057	0.087	0.106	0.085	-0.008	-0.266	0.187	-0.169	-0.253	0.674
west2007	0.037	0.058	0.050	0.043	-0.008	-0.166	0.097	-0.191	-0.173	0.736
east2011	0.066	0.115	0.132	0.126	0.062	-0.141	0.183	-0.201	-0.250	0.638
west2011	0.056	0.081	0.088	0.088	0.061	-0.062	0.096	-0.203	-0.168	0.682

Table 6. Decomposition of difference in differentials between New and Old Member States in Employment Rate of Women in 2007 and 2011 - Decomposition Results for Variables

	main	region	year	reg*yr
Age	0.001	0.000	0.000	0.000
Educ	0.002	-0.002	-0.005	0.003
Child	0.003	0.000	0.002	0.000
Constant	0	0	0	-0.018
Total	0.006	-0.002	-0.003	-0.014

Table 7. Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2001 and 2007 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
ro si hu sk cz 2001	0.052	0.078	0.100	0.073	-0.021	-0.319	0.140	-0.105	-0.277	0.708
uk 2001	0.020	0.024	0.020	0.009	-0.042	-0.179	0.064	-0.163	-0.252	0.824
ro si hu sk cz 2007	0.044	0.072	0.090	0.076	-0.007	-0.257	0.156	-0.175	-0.359	0.713
uk 2007	0.007	0.031	0.025	0.025	-0.002	-0.097	0.100	-0.191	-0.208	0.793

Table 8. Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2007 - Decomposition Results for Variables

RO SI HU SK CZ vs UK	main	region	year	reg*yr
Age	-0.004	0.001	-0.002	-0.012
Educ	-0.009	0.004	-0.004	-0.019
Child	-0.003	0.004	0.000	-0.023
Constant	0	0	0	0.035
Total	-0.016	0.008	-0.005	-0.018

Table 9. Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2001 and 2007 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
ee lv bg 2001	0.053	0.107	0.106	0.083	0.047	-0.295	0.142	-0.188	-0.252	0.647
uk 2001	0.020	0.024	0.020	0.009	-0.042	-0.179	0.064	-0.163	-0.252	0.824
ee lv bg 2007	0.057	0.081	0.098	0.080	0.038	-0.096	0.121	-0.264	-0.301	0.741
uk 2007	0.007	0.031	0.025	0.025	-0.002	-0.097	0.100	-0.191	-0.208	0.793

Table 10. Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2007 - Decomposition Results for Variables

EE LV BG vs UK	main	region	year	reg*yr
Age	0.002	0.000	-0.001	-0.005
Educ	0.000	0.000	0.001	-0.009
Child	0.000	0.003	0.000	-0.017
Constant	0	0	0	0.125
Total	-0.012	0.017	0.005	0.076

Table 11. Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2001 and 2007 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
pl 2001	0.044	0.103	0.109	0.075	-0.036	-0.247	0.238	-0.166	-0.170	0.596
uk 2001	0.020	0.024	0.020	0.009	-0.042	-0.179	0.064	-0.163	-0.252	0.824
pl 2007	0.078	0.105	0.115	0.076	-0.057	-0.368	0.228	-0.148	-0.201	0.623
uk 2007	0.007	0.031	0.025	0.025	-0.002	-0.097	0.100	-0.191	-0.208	0.793

Table 12. Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2007 - Decomposition Results for Variables

PL vs UK	main	region	year	reg*yr
Age	-0.004	0.000	0.000	0.006
Educ	-0.004	-0.001	0.001	-0.010
Child	-0.003	0.001	0.000	-0.014
Constant	0	0	0	0.057
Total	-0.020	-0.003	0.008	0.012

Table 13. Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
ro si hu sk cz 2001	0.052	0.078	0.100	0.073	-0.021	-0.319	0.140	-0.105	-0.277	0.708
uk 2001	0.020	0.024	0.020	0.009	-0.042	-0.179	0.064	-0.163	-0.252	0.824
ro si hu sk cz 2011	0.066	0.101	0.116	0.105	0.036	-0.153	0.156	-0.192	-0.357	0.670
uk 2011	0.011	0.035	0.051	0.051	0.054	-0.060	0.067	-0.212	-0.254	0.766

Table 14. Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Decomposition Results for Variables

RO SI HU SK CZ vs UK	main	region	year	reg*yr
Age	0.004	0.001	-0.001	0.006
Educ	-0.001	-0.001	0.001	-0.001
Child	0.002	0.005	0.000	-0.016
Constant	0	0	0	0.020
Total	-0.018	0.010	-0.004	0.001

Table 15. Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
ee lv bg 2001	0.053	0.107	0.106	0.083	0.047	-0.295	0.142	-0.188	-0.252	0.647
uk 2001	0.020	0.024	0.020	0.009	-0.042	-0.179	0.064	-0.163	-0.252	0.824
ee lv bg 2011	0.045	0.099	0.108	0.100	0.071	-0.011	0.130	-0.310	-0.270	0.686
uk 2011	0.011	0.035	0.051	0.051	0.054	-0.060	0.067	-0.212	-0.254	0.766

Table 16. Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Decomposition Results for Variables

EE LV BG vs UK	main	region	year	reg*yr
Age	0.003	0.000	-0.001	-0.003
Educ	-0.001	0.000	0.001	-0.004
Child	0.001	0.001	0.000	-0.003
Constant	0	0	0	0.097
Total	-0.018	0.019	0.011	0.069

Table 17. Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
pl 2001	0.044	0.103	0.109	0.075	-0.036	-0.247	0.238	-0.166	-0.170	0.596
uk 2001	0.020	0.024	0.020	0.009	-0.042	-0.179	0.064	-0.163	-0.252	0.824
pl 2011	0.077	0.136	0.153	0.137	0.060	-0.199	0.222	-0.195	-0.211	0.597
uk 2011	0.011	0.035	0.051	0.051	0.054	-0.060	0.067	-0.212	-0.254	0.766

Table 18. Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Decomposition Results for Variables

PL vs UK	main	region	year	reg*yr
Age	0.005	-0.001	-0.002	0.005
Educ	-0.001	-0.001	0.000	0.014
Child	-0.005	0.001	0.001	-0.008
Constant	0	0	0	0.059
Total	-0.024	0.006	0.020	0.054

Table 19

Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2007 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
ro si hu sk cz 2007	0.044	0.072	0.090	0.076	-0.007	-0.257	0.156	-0.175	-0.359	0.713
uk 2007	0.007	0.031	0.025	0.025	-0.002	-0.097	0.100	-0.191	-0.208	0.793
ro si hu sk cz 2011	0.066	0.101	0.116	0.105	0.036	-0.153	0.156	-0.192	-0.357	0.670
uk 2011	0.011	0.035	0.051	0.051	0.054	-0.060	0.067	-0.212	-0.254	0.766

Table 20

Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Decomposition Results for Variables

RO SI HU SK CZ vs UK	main	region	year	reg*yr
Age	-0.001	0.002	0.001	0.013
Educ	-0.008	0.001	0.003	0.013
Child	0.006	0.000	-0.003	0.010
Constant	0	0	0	-0.016
Total	-0.003	0.003	0.000	0.020

Table 21

Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2007 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
ee lv bg 2007	0.057	0.081	0.098	0.080	0.038	-0.096	0.121	-0.264	-0.301	0.741
uk 2007	0.007	0.031	0.025	0.025	-0.002	-0.097	0.100	-0.191	-0.208	0.793
ee lv bg 2011	0.045	0.099	0.108	0.100	0.071	-0.011	0.130	-0.310	-0.270	0.686
uk 2011	0.011	0.035	0.051	0.051	0.054	-0.060	0.067	-0.212	-0.254	0.766

Table 22

Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Decomposition Results for Variables

EE LV BG vs UK	main	region	year	reg*yr
Age	0.002	0.002	0.000	-0.001
Educ	-0.011	0.004	0.005	0.010
Child	0.001	-0.002	-0.002	0.015
Constant	0	0	0	-0.027
Total	-0.008	0.003	0.003	-0.003

Table 23

Decomposition of difference in differentials between Country Groups in Employment Rate of Women in 2007 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	child	constant
pl 2007	0.078	0.105	0.115	0.076	-0.057	-0.368	0.228	-0.148	-0.201	0.623
uk 2007	0.007	0.031	0.025	0.025	-0.002	-0.097	0.100	-0.191	-0.208	0.793
pl 2011	0.077	0.136	0.153	0.137	0.060	-0.199	0.222	-0.195	-0.211	0.597
uk 2011	0.011	0.035	0.051	0.051	0.054	-0.060	0.067	-0.212	-0.254	0.766

Table 24

Decomposition of Difference in Differentials between Country Groups in Employment Rate of Women in 2001 and 2011 - Decomposition Results for Variables

PL vs UK	main	region	year	reg*yr
Age	-0.003	0.002	0.000	0.036
Educ	0.000	0.008	0.006	0.004
Child	-0.002	0.000	0.000	0.007
Constant	0	0	0	0.002
Total	-0.006	0.011	0.006	0.049

Table 25

Decomposition of Differences between New and Old Member States in Employment Rate of Disabled People in 2002 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	high level of educ	low level of educ	male	constant
east	-0.005	-0.082	0.044	-0.041	-0.070	-0.102	0.127	-0.121	-0.005	0.266
west	0.001	0.022	0.014	-0.004	-0.049	-0.161	0.136	-0.169	0.096	0.589
pooled	0.007	0.020	0.013	-0.002	-0.046	-0.149	0.132	-0.189	0.096	0.598

Table 26. Decomposition of Differences between New and Old Member States in Employment Rate of Disabled People in 2002 and 2011 - Table of Regressions Coefficients

	30-34	35-39	40-44	45-49	50-54	55-59	60-64	high level of edu	low level of edu	male	constant
east2002	0.045	0.016	0.050	0.004	-0.025	-0.115	-0.228	0.140	-0.080	0.050	0.326
west2002	0.001	0.004	-0.008	-0.012	-0.070	-0.171	-0.345	0.119	-0.139	0.087	0.529
east2011	0.086	0.145	0.140	0.113	0.049	-0.039	-0.139	0.164	-0.062	0.025	0.280
west2011	0.030	0.027	0.056	0.054	0.033	-0.079	-0.252	0.127	-0.148	0.061	0.484

Table 27. Decomposition of Differences between New and Old Member States in Employment Rate of Disabled People in 2002 and 2011 - DetailedResults for Variables

	E
30 34	0.000
37 39	0.000
40 44	0.000
45 49	-0.001
50 54	-0.002
55 59	0.007
60 64	0.027
high educ	0.002
low educ	0.000
Sex	-0.003
Constant	0
30 34	0.001
37 39	0.001
40 44	0.002
45 49	0.003
50 54	-0.001
55 59	-0.006
60 64	-0.007
high educ	0.001
low educ	-0.001
Sex	0.000
Constant	0
30 34	0.000
37 39	0.000
40 44	0.001
45 49	0.001
50 54	0.002
55 59	-0.003
60 64	-0.011
high educ	0.000
low educ	0.004
Sex	-0.001
Constant	0
30 34	0.000
37 39	-0.006
40 44	-0.002
45 49	-0.004
50 54	0.005
55 59	0.004
60 64	0.001
high educ	-0.001
low educ	-0.009
Sex	0.000
Constant	0.001

	main (X)	region	year	reg*yr (b)
Age	0.031	-0.008	-0.009	-0.002
Educ	0.003	0.000	0.004	-0.010
Sex	-0.003	0.000	-0.001	0.000
Constant	0	0	0	0.001
Total	0.031	-0.008	-0.007	-0.011

Table 28. Time spent on home production by work status and sex (minutes)
mean and standard deviation

		Countries with modern role division				Countries with traditional role division			
		women	men	together	w/m	women	men	together	w/m
works		68	43	55	1.6	75	33	54	2.2
		24	12	22		14	8	24	
absent	from	80	65	73	1.2	106	60	85	1.8

work								
	22	18	21		25	22	33	
not working	104	64	85	1.6	136	70	103	2.0
	30	14	31		30	25	43	
Total	84	56	71	1.5	105	53	80	2.0
	29	17	28		35	25	40	

[+] *Countries with traditional role division are identified as those where the country coefficient for time spent on home production is significantly higher for women compared to men, and include Bg, Es, Lt, Lv, Pl.*

Table 29. Time spent on home production depending on work status, sex, disability and country

log_time	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
work status (ref: works)						
absent from work	0.4897	0.0848	5.7700	0.0000	0.3210	0.6584
not working	0.6637	0.0656	10.1100	0.0000	0.5332	0.7943
no answer	0.1314	0.1773	0.7400	0.4610	-0.2213	0.4840
female	0.4264	0.0732	5.8300	0.0000	0.2809	0.5719
female*traditional	0.3799	0.0644	5.9000	0.0000	0.2518	0.5080
female*absent	-0.1585	0.0857	-1.8500	0.0680	-0.3289	0.0118
female*not working	-0.0876	0.0742	-1.1800	0.2410	-0.2352	0.0599
female*no answer	0.0591	0.2412	0.2500	0.8070	-0.4206	0.5388
female*disabled	0.0842	0.0659	1.2800	0.2050	-0.0468	0.2151
disabled or ill	0.0589	0.0627	0.9400	0.3500	-0.0658	0.1835
disabled*absent	-0.1146	0.0853	-1.3400	0.1830	-0.2844	0.0551
disabled*not working	-0.2011	0.0743	-2.7100	0.0080	-0.3488	-0.0535
country (ref: be)						
bg	0.3704	0.0786	4.7100	0.0000	0.2140	0.5267
ee	0.4461	0.0682	6.5400	0.0000	0.3105	0.5816
es	-0.1257	0.0760	-1.6500	0.1020	-0.2768	0.0255
lt	0.2648	0.0816	3.2400	0.0020	0.1025	0.4271
lv	-0.1052	0.0816	-1.2900	0.2010	-0.2675	0.0571
pl	0.1198	0.0760	1.5800	0.1190	-0.0314	0.2709
se	0.0436	0.0693	0.6300	0.5310	-0.0943	0.1814
si	0.6526	0.0795	8.2100	0.0000	0.4945	0.8106
uk	0.1042	0.0693	1.5000	0.1360	-0.0336	0.2420
constant	3.4533	0.0710	48.6700	0.0000	3.3122	3.5944

[+] *traditional denotes residence in a country where the country coefficient for time spent on home production is significantly higher for women compared to men, as in Bg, Es, Lt, Lv, Pl (based on a similar regression run separately for men and women).*

Robust regression. Number of observations = 106, F(19,86) = 38.17, Prob > F = 0.0000.

Table 30. Time spent on home production depending on work status, age, sex, education and country

logtime	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
Work status (ref: works)						
absent	0.2479	0.0820	3.020	0.003	0.086158	0.409584
not working	0.4932	0.0505	9.760	0.000	0.393534	0.592778
edu						
secondary	-0.0440	0.0533	-0.820	0.411	-0.149140	0.061179
tertiary	-0.1637	0.0653	-2.510	0.013	-0.292468	-0.034888
female	0.5825	0.0912	6.390	0.000	0.402689	0.762342
female*primary	0.0948	0.0862	1.100	0.272	-0.075094	0.264752
female*secondary	-0.0231	0.0816	-0.280	0.778	-0.184044	0.137865
female*traditional	0.0287	0.0647	0.440	0.658	-0.098899	0.156238
female*work	0.0791	0.0682	1.160	0.248	-0.055454	0.213628
female*absent	0.1927	0.1081	1.780	0.076	-0.020433	0.405845
age						
25-44	0.5679	0.0552	10.300	0.000	0.459099	0.676610
45-64	0.7264	0.0553	13.120	0.000	0.617297	0.835565
country						
Ee	-0.0189	0.0714	-0.260	0.792	-0.159716	0.121953
Lv	-0.3649	0.0749	-4.870	0.000	-0.512604	-0.217230
Lt	-0.0245	0.0776	-0.320	0.753	-0.177378	0.128453
Pl	-0.1425	0.0676	-2.110	0.036	-0.275838	-0.009184
Si	0.1544	0.0953	1.620	0.107	-0.033507	0.342398
Es	-0.4480	0.0761	-5.890	0.000	-0.598018	-0.297926
S	-0.3898	0.0849	-4.590	0.000	-0.557072	-0.222470
Uk	-0.3615	0.0804	-4.500	0.000	-0.520000	-0.203011
constant	3.2389	0.0883	36.670	0.000	3.064789	3.413091

[‡] *traditional denotes residence in a country where the country coefficient for time spent on home production is significantly higher for women compared to men, as in Bg, Es, Lt, Lv, Pl (based on a similar regression run separately for men and women).*

Robust regression. Number of observations = 224, F(20,203) = 52.95 Prob > F = 0.0000.