



Synthesis Report:

W4

LABOUR MARKET, SKILLS and SOCIAL DYNAMICS

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Executive summary

The aim of Work Package 4 was to identify: (i) the characteristics of individuals/households/groups that lead to vulnerable positions in the labour market, (ii) to analyse the degree of effectiveness of various employment policies in relation to these groups and (iii) to analyse the effectiveness of training and educational institutions for skill formation and labour market integration in Central and Eastern European countries (CEEs). The key findings of the research were the followings:

- A severe constraint on the efficient use of labour resource in most of the CEE countries is the low level of labour supply. Activity rates of men are well below the EU15 average in all CEE countries.
- Low employment rates of men and the extremely low employment rates in the population with low level of education are common and persistent problems of the CEE countries. The region's persistent failure to provide its unskilled population with work poses the risk of destructive social fragmentation, erosion of the legal and market institutions and slower growth.
- The research found that two important drivers of unskilled employment are absent in the post-communist EU member states. First, unlike in Southern Europe, the low educated cannot rely on the traditional small-firm sector that had been eliminated under state socialism and could not recover since then. Second, dissimilar to Northern Europe, low educated people infrequently participate in adult training and civil activities, which could develop their cognitive and non-cognitive skills. These conditions severely restrict the number of jobs available for them while their exclusion from work limits their links to the rest of the society and both non-employment and social isolation constrain them in skill formation.
- Participation in adult education, especially in non-formal adult education is substantially lower in CEE countries than in western and northern Europe, both for the employed, unemployed and inactive population. Composition effects do not explain these differences in terms of individual characteristics, firm size and economic sector.
- Training participation is always positively associated not only with education, but also with basic skills (literacy, numeracy), as better skills make training more profitable and/or less

costly. The weaker basic skills of those with a low or medium level of education in CEE countries are likely to play a role in the CEE-EU15 training gap.

- International student achievement data indicate weaker basic skills in most of the CEE countries compared to Western and Northern countries. Some CEE countries (Poland, Latvia) succeeded in improving students' performance in all skill categories – literacy, numeracy, science – while students' performance deteriorated significantly in other CEE countries.
- In the course of the crisis low educated were hit hardest by the economic downturn depicted by a substantial drop in employment stability, increased flows into unemployment and sunken probability to find a job again if being unemployed. The probability to move from education to employment dropped strongest for this group, and the persistence of unemployment rose for this group stronger than for medium educated.
- Net employment creation patterns are skill-specific and differ strongly between native and migrant workers. Particularly, for both the EU as a whole and the EU-15, relative to low-skilled native workers, net employment creation is significantly higher among high-skilled native workers. In contrast, migrant workers show no skill-related differences in net employment creation. Hence, while natives' net job creation reflects the skill-bias in additional employment, migrants' net employment does not.
- Aggregate labour demand as well as the demand structure changed during the economic transition in post-socialist New Member States and managing the adjustment continues to pose a challenge to their underdeveloped public administrations.
- The effect of various activation approaches on job search confirms the effectiveness of a consistently strict approach to activating the non-employed population and also point to synergies between certain policy elements. A combination of high spending on Public Employment Services and strict monitoring of job search yield high search intensity, irrespective of the coverage of registration requirements. This is an effective strategy to the extent that high search intensity yields high reemployment rates. At the other extreme, limited registration requirements and low spending on PES yield low search activity, even if job search monitoring is strict. In-between activation approaches appear to yield mixed results.
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- There are marked differences across CEE countries concerning changes of students' performance. While in some CEE countries (Poland, Latvia) student performance improved in all skill categories – literacy, numeracy, science - in others students' performance deteriorated significantly (Czech Republic, Hungary.)
- The case of Poland suggests that with the help of well-designed educational reforms significant improvement can be achieved in student's performance. Poland restructured its basic education by postponing for one year the choice between general or vocational curriculum at the secondary level. Curricular reform accompanied this structural change. A core curriculum was developed that aimed to provide schools with extensive autonomy and responsibility. A system of examinations and tests at the end of primary and lower secondary was also introduced. These reforms might have contributed to the improvement of student's performance.
- Teacher quality is a key determinant of student's performance. Higher pay induces more able graduates into the profession. In most CEE countries, teacher salaries are low in comparison with other graduate salaries and the difference between teacher salaries and other graduate salaries is much larger than in the EU15 countries. Countries with a stock of low-quality teachers cannot just shift up the wage of all teachers and expect the quality of teachers to improve. The stock of low-quality teachers can be changed only gradually even if the quality of new recruits to the profession improves. In the case of an overall wage increase the existing teachers would have an incentive to stay with no responsibility to become better teachers.
- Large ethnic disparities are among the most severe impediments to social cohesion. In Central and Eastern Europe, the most disadvantaged ethnic minority is the Roma minority. School achievement gap is substantial in all countries. The Roma/non-Roma school achievement gap is primarily due to poverty and associated disadvantages at home and school. Aside from the phenomenon of school segregation, none of the causes of the achievement gap require a social policy intervention directed at the Roma minority in particular.
- The achievement of the 3% research intensity target established in the European Unions' Lisbon and EU 2020 strategies presupposes a substantial structural change toward more science-intensive industry in the European cohesion regions. Contrastingly, these economies have demonstrated so far a relatively slow build-up of the science-intensive industry. The

quality of higher education, especially at the level of graduate studies, is weaker than the European top universities. The number of Ph.D. graduates in STEM disciplines remains also insufficient for building up a modern science-intensive industry in cohesion economies.

Introduction

This report provides an overview and synthesis of studies produced under Work Package 4 ‘Labour markets, skills and social dynamics’ of the GRINCOH project. The titles of the studies are listed in *Appendices*, and each publication can be found on the *GRINCOH website*.

Human capital is one of the keys to competitive advantage as a major determinant of both productivity and wages and macro-level outcomes like economic growth and employment (e.g. *Blundell et al. 1999*). Labour markets and education might facilitate social inclusion playing a vital role in the development processes of countries and regions; they also reveal important aspects of social differentiation, social exclusion and barriers in exploiting the regional and country-wide development potential that needs to be addressed by policy

Under WP 4, we analysed in detail the labour market developments in CEECs. The purpose of this analysis was to identify and compare the functioning of the labour markets in relation to different groups of persons in different regions and countries. Second, we tried to identify and explain the shortcomings of policy-making related to employment in fostering social cohesion in the CEECs, but also in fostering the competitiveness of their economies. The focus was on examining micro-level processes that generate exclusion from the labour market and on policies that attempt to counteract that outcome. The quality of decision-making and policy design affecting labour markets in the CEECs is an under-researched area, but it is potentially an important facilitator or constraint for increasing employment levels and the quality of jobs.

Related to this we also examined the impact of education policies and reforms in education and training systems upon skill formation. Education is a priority in the European Commission’s Europe 2020 strategy. Many recent studies have documented the importance of cognitive skills both for economic growth (*Hanushek- Woessmann, 2008; 2009*) and employability (e.g. *McIntosh,-Vignoles, 2001*). Furthermore, just as skill dispersion is a crucial factor in societal inequality, education is also a key institution affecting social cohesion. Existing literature indicates that educational institutions have a decisive role in international differences in student performance (*Woessmann, 2003*). Our research explored education policy changes and differences in the institutional setting of education which, according to available research evidence, might have a decisive role in students’ outcomes (*Woessmann - Schütz, 2006*).

1. Objectives and methodology

The aim of the WP was to identify: (i) the characteristics of individuals/households/groups that lead to vulnerable positions in the labour market, (ii) to analyse the degree of effectiveness of various employment policies in relation to these groups and (iii) to analyse the effectiveness of training and educational institutions for skill formation and labour market integration.

About the **first objective**, we made a descriptive analysis of labour market dynamics as a starting point (*Vidovic, 2013*) then we investigated in details the mobility patterns CEECs. Based on EU SILC data using econometric techniques we summarised how the crises had affected transition rates across labour market states (employment/unemployment/activity/education. The analysis aimed to identify differences across EU country groups and CEE countries. Particular attention was paid to the developments of these rates for the younger age cohorts (*Leitner-Stehrer, 2014*). Using EU LFS data labour mobility was investigated in a number of different dimensions: changes in labour status, change of place of residence across EU regions (cross-regional mobility), change of sector employment (inter-sector mobility), and change of occupation (occupational mobility). The crucial question which was put on was the role of migrants influencing these measures of labour market mobility either through their mobility patterns or their presence in the labour markets of particular countries (or regions). Furthermore, we also checked whether migrants with different educational attainment levels show different mobility patterns and have different impacts in different skill segments of the labour market. With the help of econometric analysis we identified key determinants of observable mobility rates and the role of migrants in such mobility patterns (*Landesmann-Leitner, 2014*). An often neglected determinant of the labour mobility was in focus of further study, the impact of social capital on migration. The role of social capital for mobility was identified with the help of a micro-econometric founded comparison of East and West Germany on the basis of German micro data, the German Socio-Economic Panel. The German case as a true natural experiment made it possible to identify the causal impact of communism on behavioural patterns. The focus of the study was the relevance of different types of social capital on migration intentions in the context of shrinking regions (*Bönisch-Schneider- Hyll, 2013*). The final paper of Task 1 analysed the possible reasons for the extremely low employment rates of the low educated in the CEE countries. Based on individual level data of Adult Literacy and Life Skills Survey (2003-2008) with reference to the International Adult Literacy Survey (1994-1998) the paper compared Hungary, as a representative of the CEE region, to Norway and Italy, two countries that integrate their low educated populace more or less successfully and do so in characteristically different ways. With the help of statistical and econometric methods the paper investigated how the distribution of jobs by complexity and firms' willingness to hire low educated labour for jobs of different complexity contribute to unskilled employment. In the search of how unqualified workers can attend complex

jobs, the paper compared their involvement in various forms of post-school skills formation. The countries were also compared by the weight of small firms, which are assumed to assist low-skilled workers through interpersonal relationships (Köllő, 2013)

As part of the **second objective**, the first paper compared different activation policies in the CEE countries and using econometric techniques estimated the effect of various activation approaches on selected measures of job search. The study was based on EU LFS individual level data. (Csillag-Sami-Scharle, 2013) The second paper tried to measure the quality of decision-making and policy design affecting labour markets in the CEECs. The paper constructed a proxy for the quality of labour market decision making and policy design in the 2007-2010 period in CEEs and investigated a set of structural determinants that may have caused the quality proxy to be high or low. Then the paper applied fuzzy-set qualitative comparative analysis to identify combinations of those factors that might explain the cross-country variation. The paper was based on data of the European Commission's Labour Market Reforms Database (Váradi, 2013).

Regarding the **third objective** a qualitative study analysed the educational reforms of four Central European countries: Czech Republic, Hungary, Poland, and Slovakia, The educational systems were selected according to the Most Similar Systems Design (MSSD). The paper tried to identify institutional changes which are likely to be at the origin of increasing divergence of educational outcomes (measured by PISA) in a group of otherwise similar systems (Herbst- Wojciuk, 2014). Another study investigated the effect of teacher salaries on teacher quality (Varga, 2014). Based on Eurostat and OECD data the first part of the paper gave a comparative overview of changes in teacher compensation systems in the CEE countries during the last two decades. The second part of the paper investigated if an overall wage increase could improve the quality of teachers. Using Hungary's case as a natural experiment, (where there was a 50 percent wage increase for public servants, including teachers in 2002) the paper examined teachers' decisions to leave the profession and how the public sector wage increase in 2002 has effected exiting decisions of teachers. This part of the analysis used econometric methods – duration models and is based on a large merged administrative data-set of Hungary. The aim of another paper of Task 3 was to add to the deficient literature on CEE apprenticeship training and test the effects of workplace-based training on labour market entrance within this area (Horn, 2013). An individual panel database, the Hungarian Life Course Survey (HLCS) provided an exemplary possibility to perform the analysis with the help of econometric analysis. Large ethnic disparities are among the most severe impediments to social cohesion. In Central and Eastern Europe, the most severe gap is between the Roma minority and the mainstream society. Another paper (Kertesi-Kézdi, 2013) using the UNDP Regional Roma survey data of 2011 (which collected information in 12 countries of East and Central Europe in a fully standardized way) quantified the achievement gap between Roma and non-Roma students in East

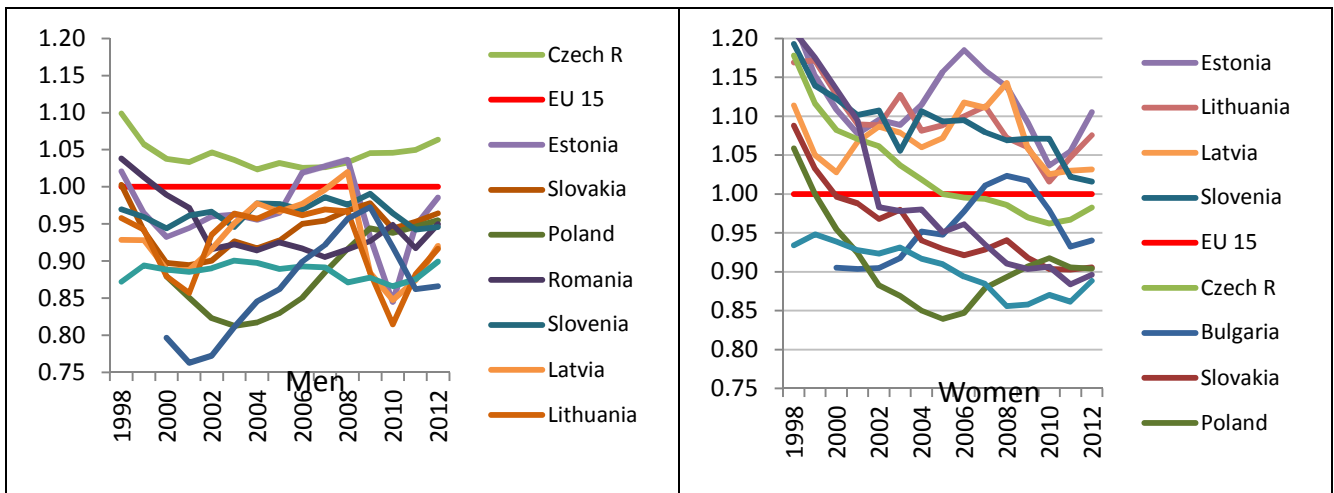
Central Europe and assessed the potential causes of the gap. In addition using unique data from Hungary, the paper assessed the gap in standardized test scores and identified the major mechanisms by which the social disadvantages of Roma students lead to lower skills. The paper used econometric techniques. A paper on adult education and training (*Hermann, 2014*) investigated the causes of low participation in adult education and training in the CEE countries. The research provided a detailed descriptive analysis of participation in training, i.e. non-formal education of adults in CEE countries in comparison to the old EU countries and tried to identify the sources of cross country differences in training. The paper is based on individual level data of the Eurostat Labour Force Surveys for the period between 2004 and 2011 and individual level data of the OECD Programme for the International Assessment of Adult Competencies (PIAAC) survey from 2012. The final paper of Task 3 (*Tiits-Kalvet- Mürk, 2014*) reviewed the main trends in higher education, research and innovation and economic development in European cohesion economies as compared to Europe's best-performing economies. The second part of the paper - as a case study - compared the developments in highly science-intensive economies (Finland and Sweden) and relatively less science-intensive 'catching up' economies (Estonia and Lithuania). This part of the research was based on statistical and qualitative methods.

1.1. Evidence of analysis – synthesis

I. VULNERABLE POSITIONS ON THE LABOUR MARKET (Task 1)

Labour market developments – a descriptive analysis. Aggregate labour demand as well as the demand structure changed during the economic transition in post-socialist new member states (NMS). There was a marked drop in *employment* during the transitional recession in the 1990s in all countries later on there was large variation in the recovery of the labour markets (*Figure 1*). After the outbreak of the economic and financial crisis relative employment rates of men dropped between 2008 and 2010 in almost all countries (with the exception of the Czech Republic and Poland), female employment rates also dropped (with the exception of Poland). Relative employment rates of men remained below EU15 average nearly in all CEE countries. The only exception was the Czech Republic where employment rate of men was higher than the EU15 average during the whole period. Relative employment rates of women starting from levels that were much higher than the EU-15 average in the late 1990s have remained above the EU average only in Slovenia and the three Baltic countries, but fell below that mark everywhere else.

Figure 1 Relative employment rate by gender in CEE countries (EU15=1)

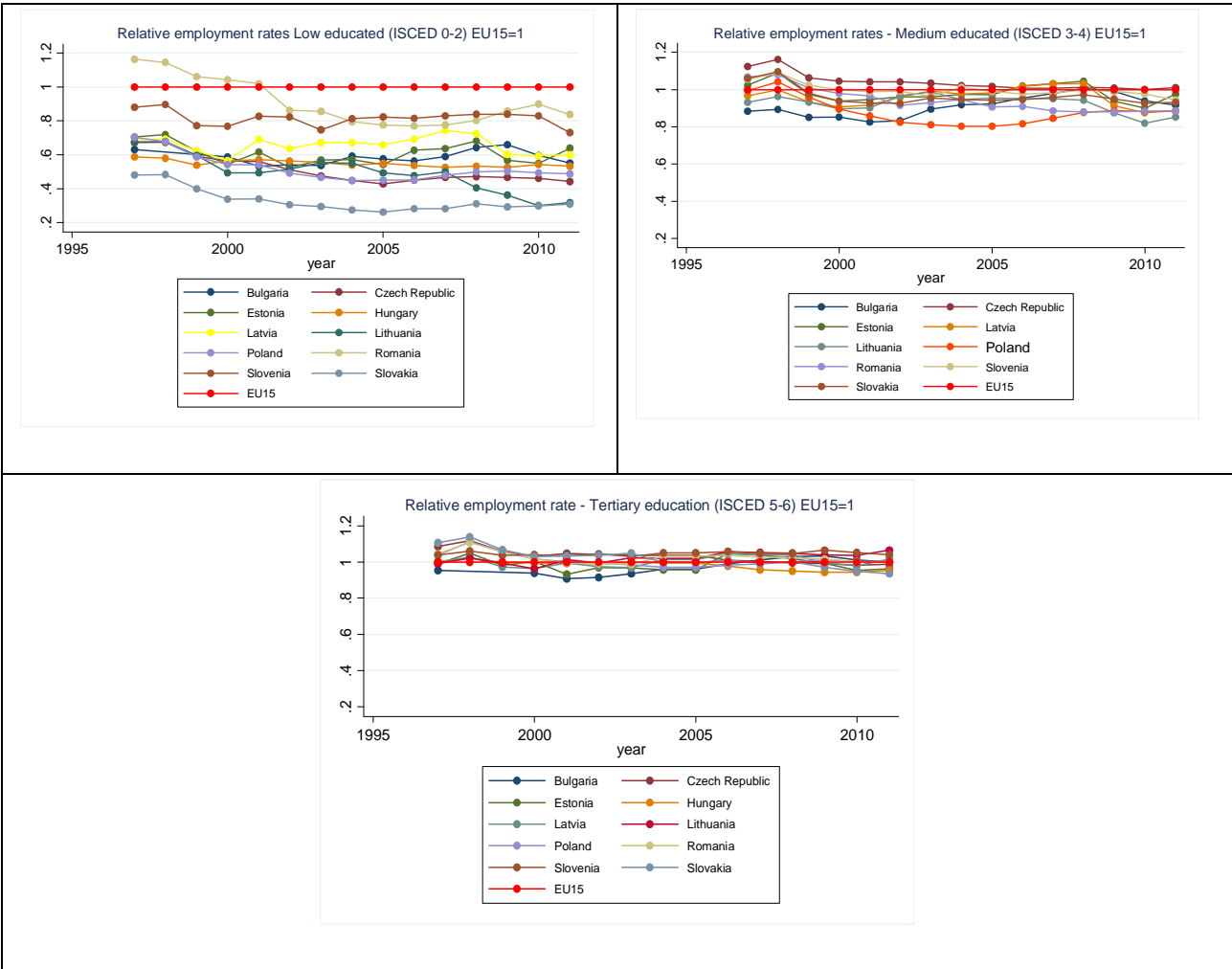


Source: Csillag – Samu- Scharle, 2013. Based on EU LFS data

Large differences can be observed in relative employment rates by educational attainment. The employment rate of those whose highest educational attainment is tertiary education is similar in the CEEs to average employment rate of the EU15. Employment rates of those who have upper secondary education is slightly lower, while there is a very large and persistent lag in the employment rates of the undereducated (less than upper secondary education) (*Figure 2*).

Low employment rates of men and the extremely low employment rates in the population with low (ISCED 2 or below) level of education are common problems of the CEE countries.

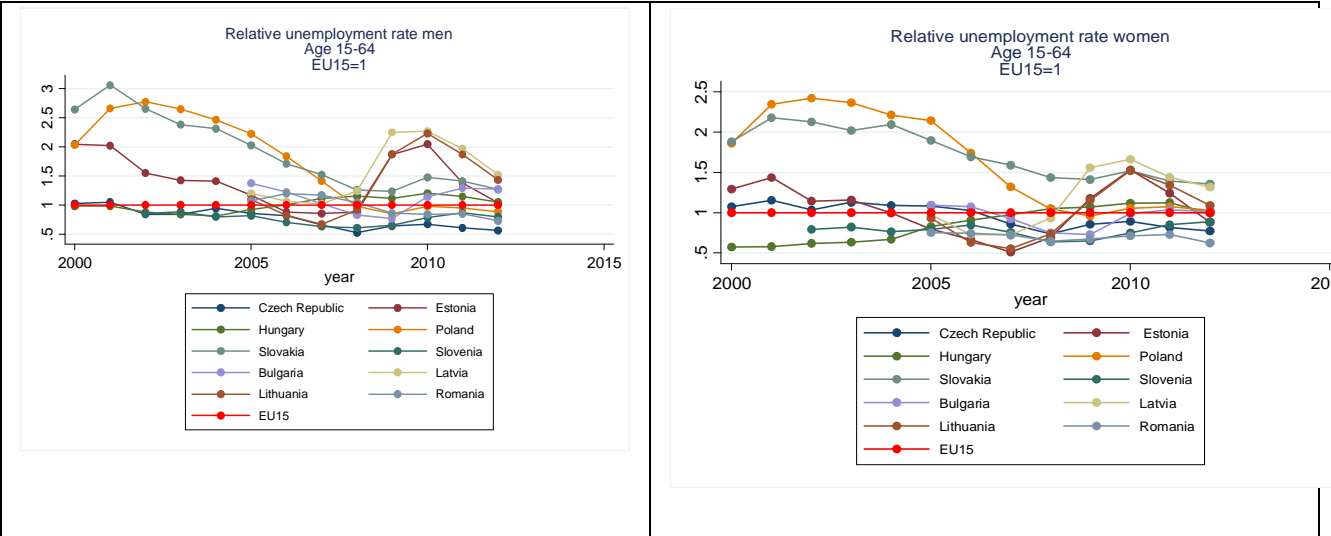
Figure 2 Relative employment rates by educational attainment in CEE countries (EU15=1)



Source: Based on EU LFS data

Unemployment rates were in general on the decline in the EU upon 2008. In the following two years, the situation on the labour markets of all EU regions worsened remarkably, unemployment rates for the total working age population increased. In the CEE countries up to 2007/2008 unemployment rates for men compared to the EU15 average declined in all countries. The largest improvement could be observed in Poland, Slovenia and Estonia, which had registered double-digit unemployment rates until 2005. Relative unemployment rates of women also improved up to the crises with the exception of Estonia. Over the entire period 1997-2011 unemployment has been higher for women than for men in the Czech Republic and Poland, and with some exceptions in Slovenia and Slovakia. In all other NMS, females were less affected by unemployment than men. The gaps became particularly large in the three Baltic States in the past couple of years due to the huge job losses during the crisis. However, also in Bulgaria and Romania the incidence of unemployment is higher for men than for women.

Figure 3 Relative unemployment rates by gender in CEE countries (EU15=1)

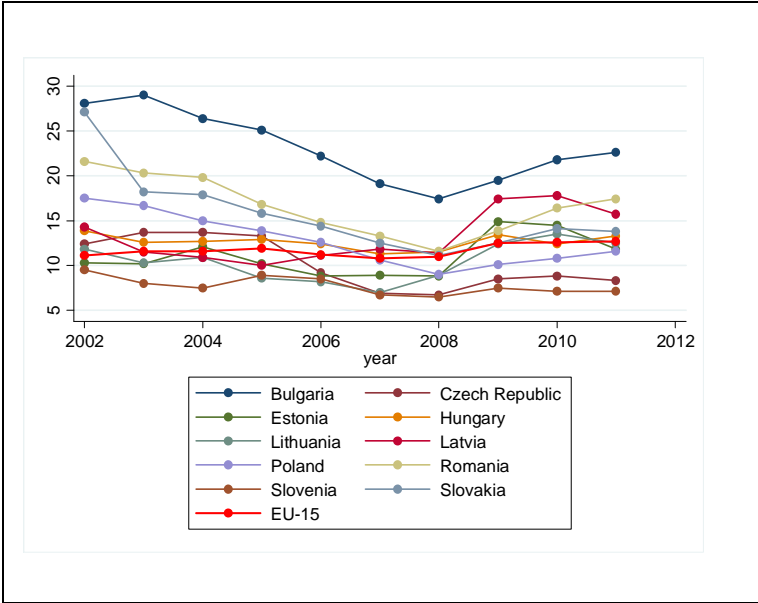


Source: Vidovic, 2013. Based on EU LFS data

Youth unemployment in the NMS has been on average about twice as high as the national average rates up to 2008, but the gap has been widening thereafter (particularly in the Czech Republic and in Slovakia). Romania is an exception with a youth unemployment rate three times higher than the overall rate from 2007 onwards, whereas the rate was lowest in Latvia (Figure 4). Slovenia has managed to reduce the high youth unemployment that prevailed in the late 1990s by a strong rise in temporary employment, high enrolment rates in tertiary education. Since the outbreak of the economic and financial crisis the gap has remained almost unchanged in most NMS, except in the Czech Republic and Slovakia where it increased, and in Lithuania reporting a narrowing of the gap.

The share of youngsters ‘Neither in employment nor in education/training’ (NEET) in the total population of that age cohort, which declined gradually due to higher participation in education in the years before 2008, increased considerably in many of the EU regions during the crisis. In Bulgaria and Romania about 23% of the population aged 15-24 years were without job or training in 2011.

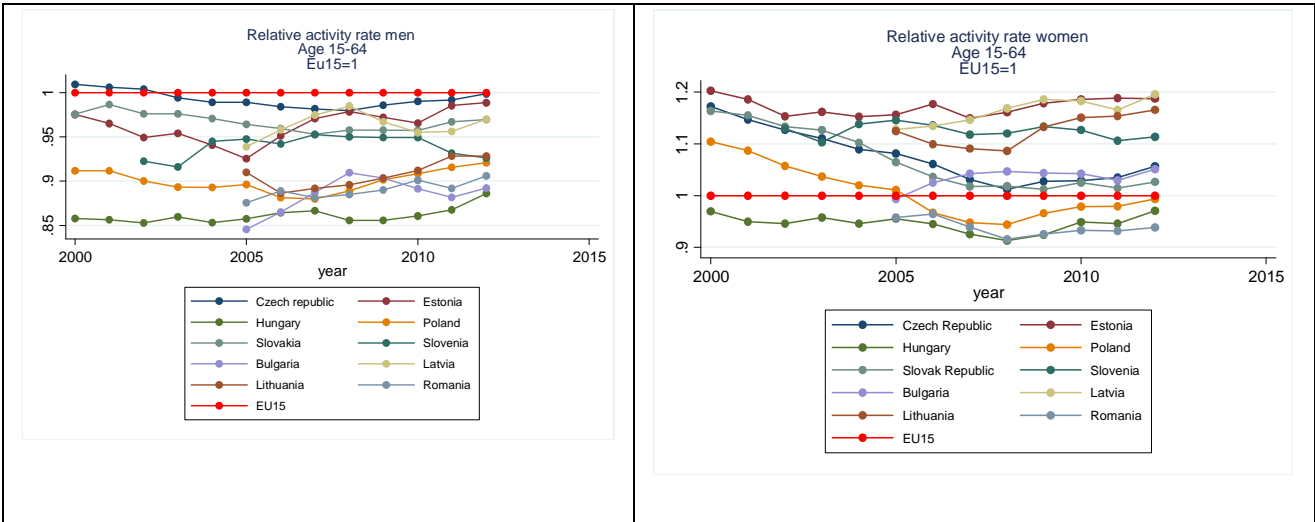
Figure 4 Young people, not in employment and not in any education and training, in % of the age group 15-24 years



Source: Vidovic, 2013. Based on EU LFS data

A severe constraint on the efficient use of labour resources in most of the CEE countries is the low level of labour supply. Activity rates of men are well below the EU15 average in all CEE countries, activity rates of women are above EU15 average (exception Romania, Hungary and after 2010 Poland).

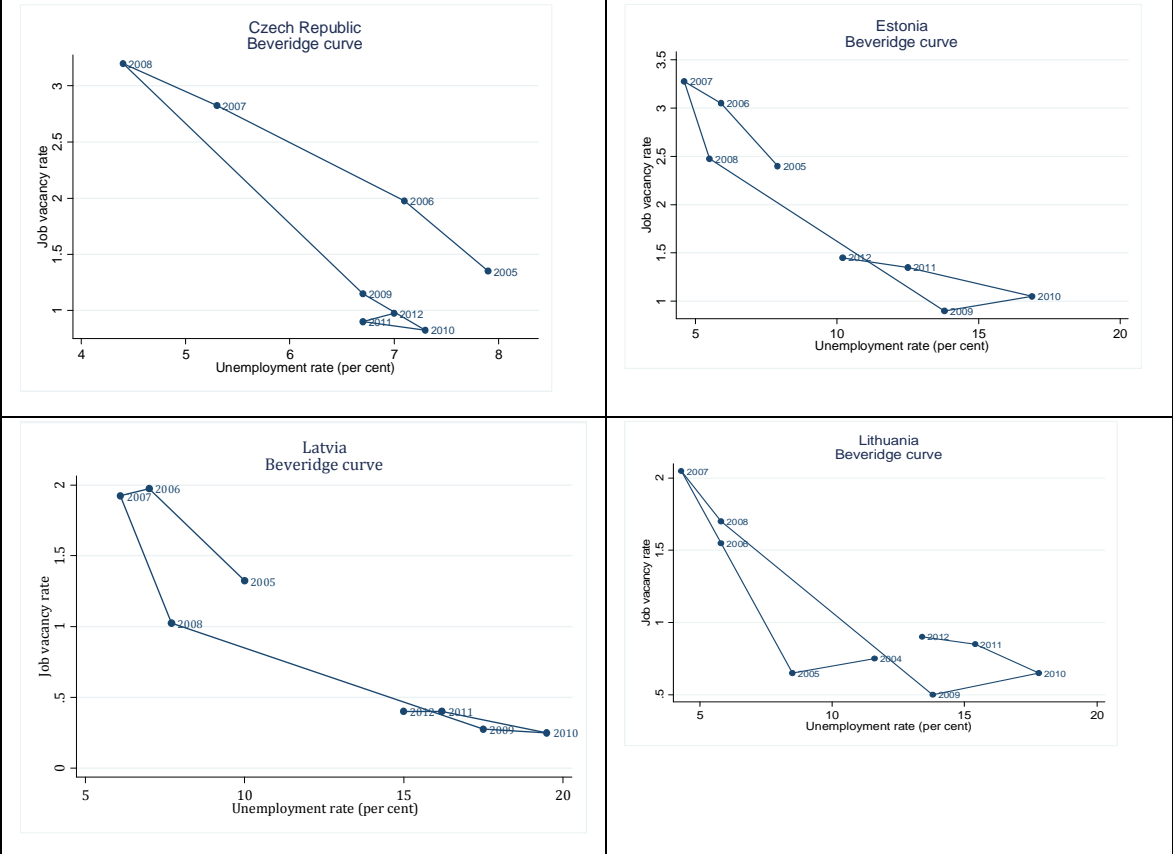
Figure 5 Relative activity rates by gender in CEE countries (EU15=1)

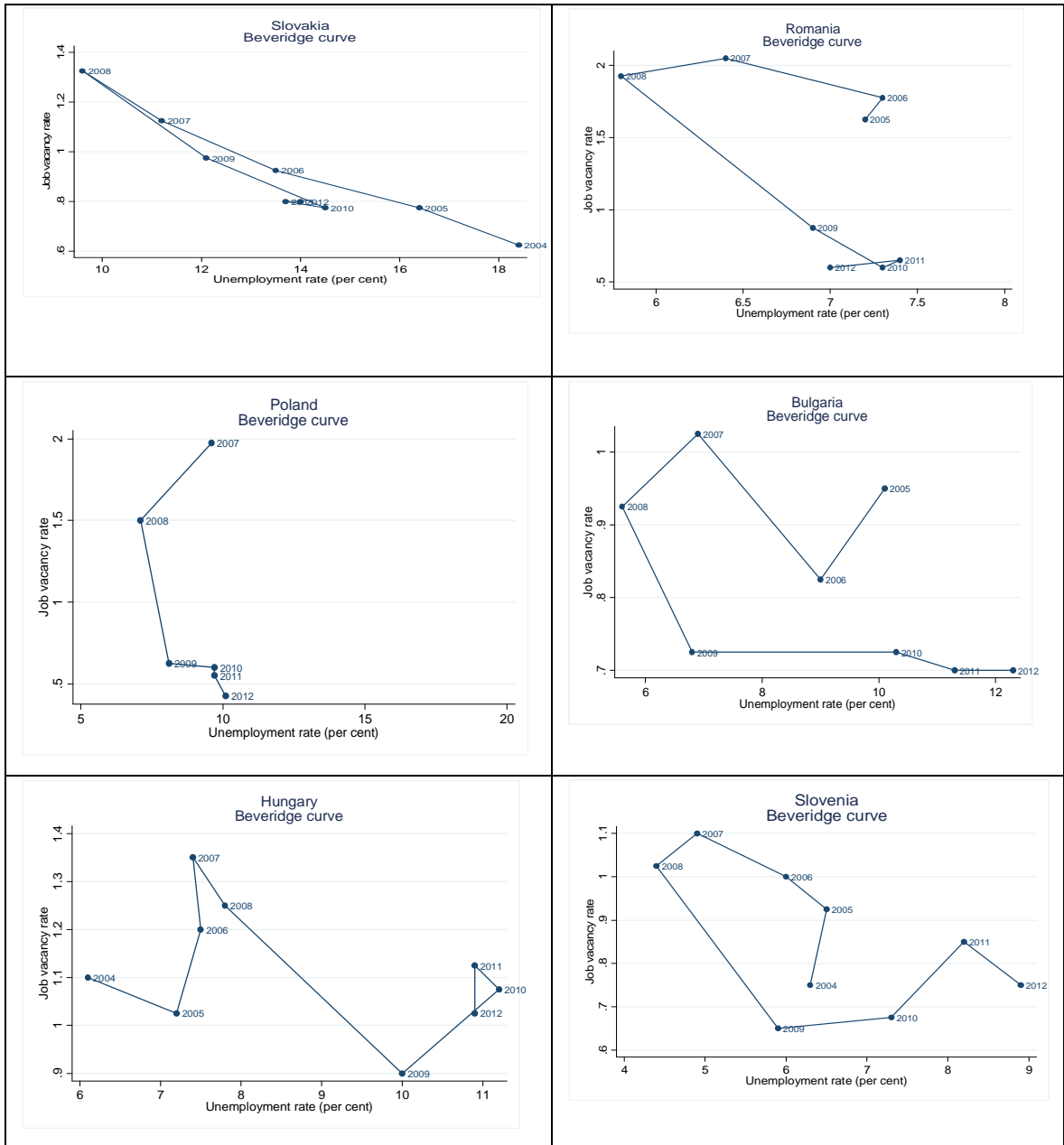


Source: Vidovic (2013) Based on EU LFS data

Beveridge curves. Before the crisis, some of the CEE countries showed an increasingly efficient job matching process. Over the latest years in some of the CEE countries unemployment rates and job vacancy rates both increased, that is worsening labour market matching, and growing structural unemployment can be observed. This phenomenon is well-described by the so-called Beveridge curve, which relates unemployment rates to job vacancy rate. When the job matching process is functioning well, the Beveridge curve shows a negative relationship between the unemployment rate and job vacancies. A group of CEE countries (*Czech Republic, Poland, Latvia and Slovakia*) experienced no shift in the curve, a fact consistent with their early economic recovery. In other countries where the curve shifted, it converged around a low level of job vacancy rates and a high level of unemployment, and an increase in job vacancies was accompanied by a weak decrease or even increase in unemployment (*Bulgaria, Hungary, and Slovenia*).

Figure 6 Beveridge curves in CEE countries





Source: Based on EUROSTAT data

The possible causes of the shift in the curves are, on the one hand, growing mismatches in skills/educational qualifications required for jobs, growing regional mismatches and on the other hand increasing activity rates.

Transitions between labour market states. Flows of people across the various labour market states are underlying the changes in employment, unemployment and inactivity . Changes in transition rates between labour market states were analysed based on EUSILC data (Leitner-Stehrer, 2014).

During the crisis (2008-2010) the structure of labour market transitions changed remarkably. Unemployment not only rose due to an increase of inflows from employment but particularly due to

strongly declining outflow into employment. At the same time, transition rates from employment to inactivity declined and rose only slightly from unemployment to inactivity, which made the situation of jobseekers even more difficult. Thus, long-term unemployment (increasing unemployment to unemployment transitions) became more widespread. In the short upswing period 2010-2011 for which data is available no remarkable change of the structure of labour market transitions are to be observed.

For *young age cohorts* (aged 15-29) job stability (employment to employment transitions) is in general lower compared to older age cohorts but in addition declined even more in the crisis. The chance to find a job fell considerably for unemployed as well as for those finishing education. One reaction to the tense labour market situation of youngsters was to stay longer in education or move back to training if being unemployed.

In the course of the crisis *low educated were hit hardest by the economic downturn* depicted by a substantial drop in employment stability, increased flows into unemployment and sunken probability to find a job again if being unemployed. The probability to move from education to employment dropped strongest for this group, and the persistence of unemployment rose for this group stronger than for medium educated. In general, tertiary educated young persons were still in a more favourable position in the labour market compared to upper secondary educated. However, their relative position deteriorated somewhat vis-à-vis medium educated persons.

Figure 7 summarizes transition rates before the crises (2005-2008) during the crises (2008-2010) and in 2010-2011 for the individual CEE countries and the averages of South European countries and North and West European countries.¹ The probability for young people to stay in the job (*transition from employment to employment*) differs considerably in the CEE region ranging from about 82% in Latvia in 2010-2011 to more than 95% in Romania. During the crisis period a sharp drop of the probability to stay in employment took place especially in Latvia and Estonia, but also in Lithuania. However, in the latter countries the rebound in 2010-2011 caused that those having remained in employment had a similar chance to keep their job as before the crisis again. In Hungary, Slovenia and the Czech Republic a slighter drop took place followed by a revival in the first two countries in 2011. A sharper drop of employment probability also took place in the South European countries which fell to about 80% up to 2011, while a slight drop was observed in the rest of the EU countries in 2008-2010 followed by a rebound in 2011. Contrary to the above-described developments employment to employment transition even rose in Poland, Bulgaria and Romania during the crisis

¹ South European EU countries comprising Italy, Portugal and Spain. North and Western European EU countries including: Austria, Belgium, Denmark, Finland, Luxembourg, Netherlands and UK.

years. However, at the same time in the latter two countries also the probability to remain unemployed (*transition from unemployment to unemployment*) rose considerably for those who have lost their job before. In Estonia, the unemployment persistence declined again after the crisis induced increase in the period 2010-2011, in all other countries it remained well above the pre-crisis level. Especially in the case of Bulgaria and Romania the above described developments show a crisis induced situation of the lower labour mobility, with those having a job enjoy relative employment stability while unemployed lack a change of getting a job. Although the unemployment rates are the highest in the South European countries the probability of becoming long-term unemployment when having lost a job is comparable to those in the CEE Member States. In the North and Western EU countries, the unemployment persistence remained almost unchanged during the crisis and was with 37% in 2010-2011 relatively low compared to the CEE Member States.

The loss of employment (*transition from employment to unemployment*) escalated particularly in the three Baltic States in the crisis years, but also in the Czech Republic, Slovenia, and Hungary and substantially in the South European countries. Unemployment persistence (*transition from unemployment to unemployment*), the chance to find a job after being unemployed is in all countries lower in the years 2010-2011 (except for Estonia and Poland) compared to the pre-crisis period. In Bulgaria and Romania only 20% of the unemployed could find employment the year after, comparable to Southern Europe, in Estonia and Hungary the chance is at about 40% in 2010-2011 which equals the level of North and Western European countries.

The level of transition rates from *education to employment* is influenced by the structure of education levels of the young population in the individual countries. In many CEE EU Member States, the share of students enrolling in upper secondary and tertiary education in the total young age cohort is higher than in North and West European countries nowadays. Thus, the annual transition rates of the youngsters in the former countries are lower. However, the sudden fall of the probability to move from education into employment, irrespective of the level in the Baltic States, but also Bulgaria shows that labour demand for young aged persons declined considerably during the crisis. In all NMS countries and Southern Europe the transition rates from education to employment also remained low in 2010-2011 or even declined in those years. Only for the North and Western EU countries it can be observed that labour demand for young entrants was on the rise again in that period and even surpassed the level of 2005-2008. The rate of those who left education without finding a job rose to 10%, during the crisis in Latvia and Bulgaria to 8% in South European countries. In the other EU NMS, the rate was on average about 5%. Although, in 2010-2011, the situation ameliorated, the levels are still higher compared to the pre-crisis period. Moreover, in Bulgaria and the South European countries less than half of those leaving education in search for a job had a chance to find employment in 2010-2011.

One of the possibilities for youngsters facing a tense labour market situation is to take up further education or training. The development of *education to education transition* rates shows young persons decided to stay longer in education that in many New EU Member States in the period 2008-2011 compared to the pre-crisis period. Strong increases of transition rates are observed for Bulgaria and Latvia.

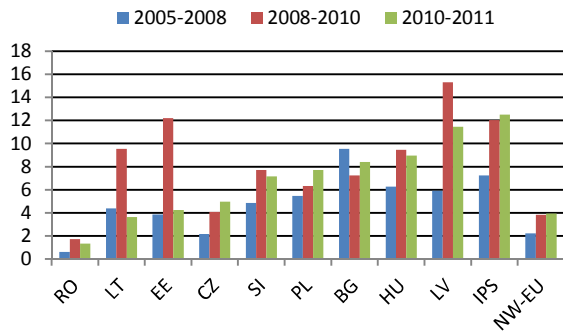
The probability to move from *unemployment to education* did not increase in most of the CEE countries. These rates depend upon public means provided for additional training, particularly in the form of active labour market measures. In Lithuania, a high rate of unemployment to education transitions fell sharply with the rise of unemployed in the labour force during the crisis. In Latvia, an expansion of active labour market measures seems to have been of short duration. In the Czech Republic, the share of those unemployed youngsters getting further training doubled but still remained below 6%. In Estonia, the rate rose to 10% in 2010-2011. In Slovenia, it has been traditionally high and amounted to 12% on average throughout the whole period under observation. In the South European countries, the share of the unemployed taking up further training also rose gradually to about 10%. In North and West Europe, the rate rose to about 13% public expenditures for active labour market measures for youngsters seem to have risen considerably after the outbreak of the economic crisis.

Figure 7 Transition rates from one labour market status to another (age 15-29)²

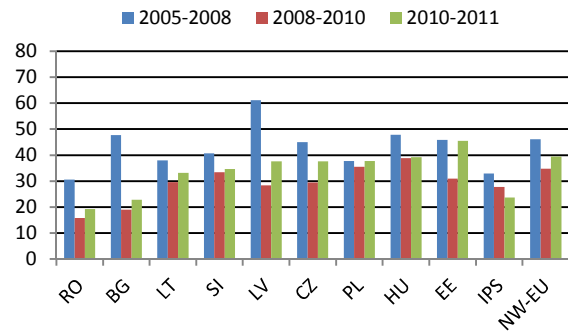


² Single step transition rates: $p_{ij} = \Pr(X_1 = j | X_0 = i)$, i stands for labour market status moving from an individual j stands for labour market status moving to.

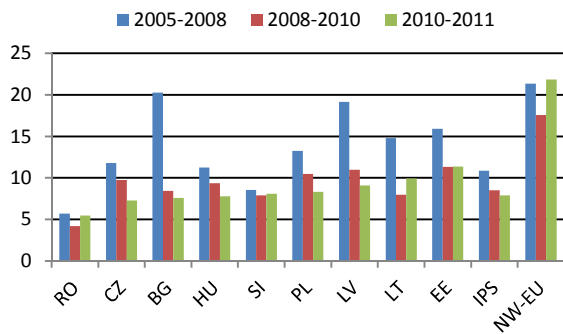
Transition: employment to unemployment, age 15-29



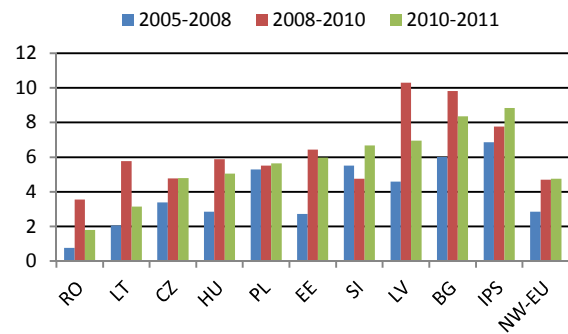
Transition: unemployment to employment, age 15-29



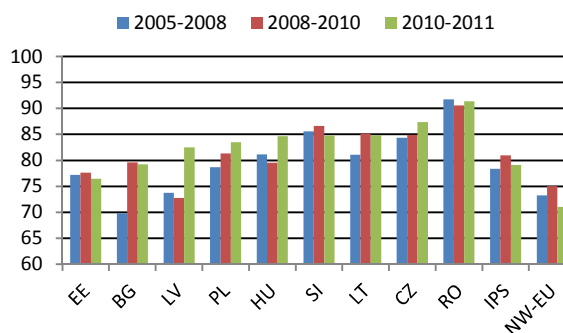
Transition: education to employment, age 15-29



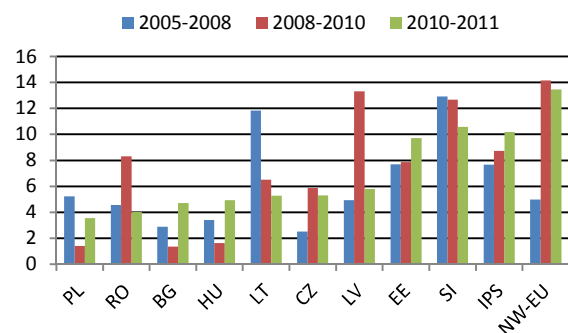
Transition: education to unemployment, age 15-29



Transition: education to education, age 15-29



Transition: unemployment to education, age 15-29



Note: IPS: IT, PT, ES; NW-EU: AT, BE, DK, FI, LU, NL, UK; Data for BG: 2006-2008; Data for RO: 2007-2008.

Source: Leitner-Stehrer (2014) based on EU-SILC longitudinal datasets 2007-2011; pooled year-to-year transitions.

In order to find out if the conditional changes in the structure of labour transitions of various population subgroups were significant when comparing the pre-crisis and crisis period a set of fixed effect probit regression were estimated (detailed regression results see in Leitner, Stehrer, 2014).

The results show that although job stability of men declined in all EU regions (except for Bulgaria and Romania) only in South, North and West European countries they also had to face higher probabilities of employment to unemployment transitions. Job stability of low educated declined significantly in the CEE-3 (Czech Republic, Hungary, Slovenia) and South Europe. An increase in employment to unemployment transitions took place in Poland and South Europe and the persistence of unemployment increased in Bulgaria, Romania and South Europe. For highly educated employment stability decreased only in Bulgaria, Romania and South Europe and transitions from employment to unemployment increased only in Bulgaria, Romania and the Baltic States. The persistence of unemployment increased for this population group only in South Europe.

For youngsters, regression results show that in the CEE-3 and Bulgaria and Romania men had to face lower education to employment probabilities in the course of the crisis. Low educated were hit in this respect only in the Baltic States and South European countries. Only in South European countries probabilities declined for highly educated youngsters. Education to unemployment probabilities of men rose apart from the CEE-3 and South Europe also in Poland. Low-educated youngsters were hit in this respect by the crisis only in Bulgaria and Romania and highly educated only in South European countries.

Recent patterns in the labour mobility and the role of migrants. Labour mobility is an important topic in the European Union. On the one hand the EU shows much lower mobility than the US, on the other hand, there are worries but also positive expectations about the extent and impact of cross-country mobility i.e. of migration flows. EU-15 is an important region of destination for migrant workers, and the NMS are important region of origin of migrant workers.

Based on individual level data of EU LFS labour mobility dynamics were analysed across different dimensions between 2000 and 2011, for native and foreign workers separately (*Landesmann-Leitner, 2014*).

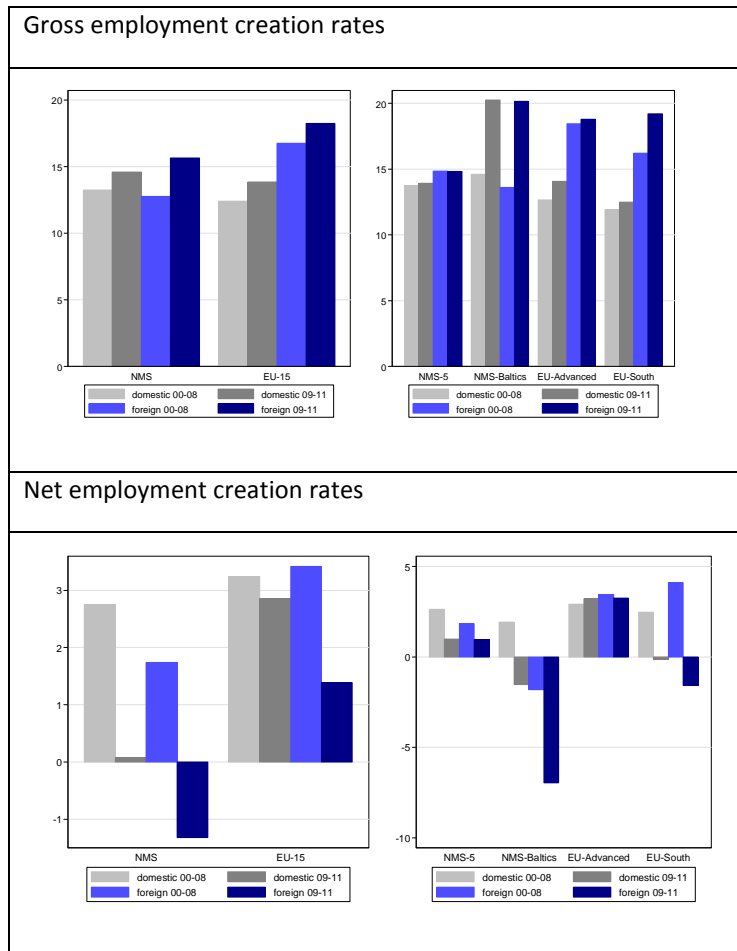
Two indicators were used to give an overview of mobility patterns: changes in the gross employment reallocation rate³ (GERR) and the net employment creation rate⁴ (NECR).

³ $GERR_{i(j)} \equiv \frac{\text{hired employees}_{i(j)} + \text{leaving employees}_{i(j)}}{\frac{1}{2}(L_{i(j),t-1} + L_{i(j),t})}$ (hired employees + leaving employees) captures gross worker flows, L_{t-1} and L_t refer to the stocks of labour of category i in period $t - 1$ and t , respectively. i refers to the mobility dimension j (a country, region, sector or occupation category, j refers to the type of worker considered ('domestic' for native worker or 'foreign' for migrant workers born outside the country of residence).

Changes in these two indicators show the followings:

Employment status change. There are significant differences between migrants and natives regarding gross labour turnover. In the EU-15, both in EU15-South (Greece, Italy, Portugal, Spain) and EU15-Advanced (rest of the EU-15) migrants show higher values of GERR than natives but amongst the NMS the same can be observed only in the Baltics (Estonia, Latvia, Lithuania). In terms of net employment gains/losses (NECR) migrants were much more hit by the recessions in the EU-South and the Baltics in the 2009-2011 period (*Figure 8*).

Figure 8 Status change Gross and Net Employment Creation Rates, by country group



Source: Landesmann-Leitner, 2014

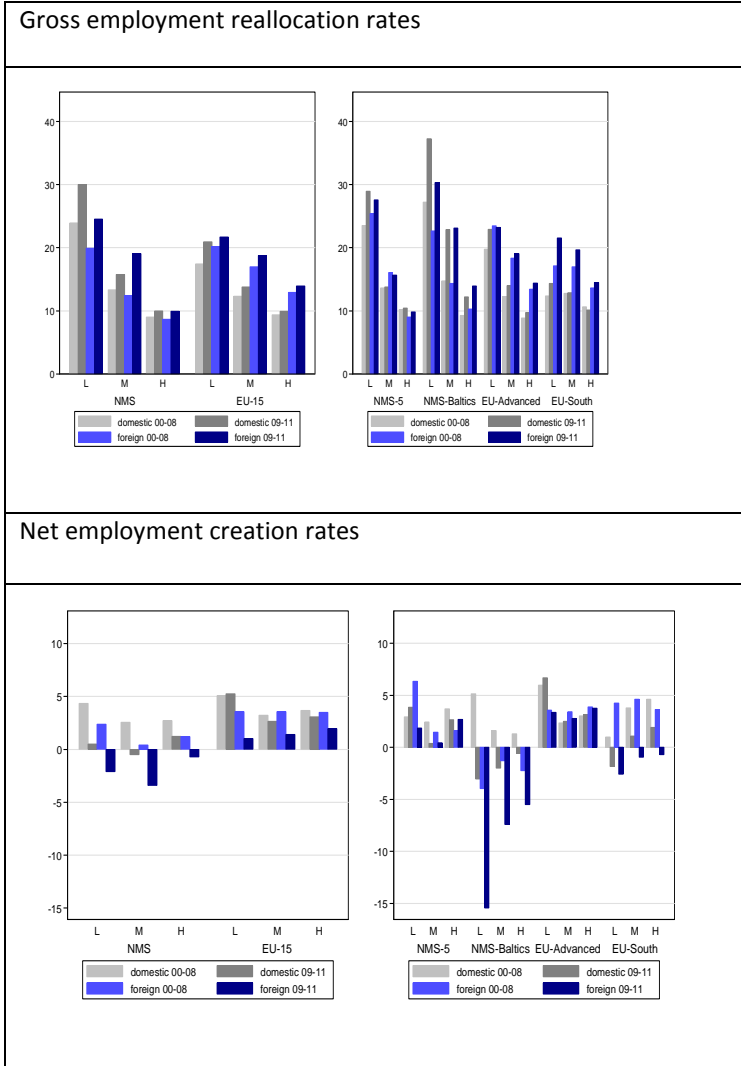
Note: NMS-5 comprises the Czech Republic, Hungary, Poland, Slovenia and Slovakia; NMS-Baltics comprises Estonia, Latvia and Lithuania; EU-Advanced comprises Austria, Belgium, Denmark, France, Germany, Sweden and the UK while EU-South comprises Greece, Italy, Portugal and Spain

Employment status change by skill category. The ‘low educated’ have the highest gross mobility followed by the ‘middle educated’ – those with completed secondary education – followed by the

⁴ $NECR_{i(j)} \equiv \frac{\text{hired employees}_{i(j)} - \text{leaving employees}_{i(j)}}{\frac{1}{2}(L_{i(j),t-1} + L_{i(j),t})}$ (hired employees – leaving employees) captures net worker flows

'most highly educated' i.e. those with completed tertiary education. This pattern is observed both in the EU-15 and the NMS both for Central European economies (Czech Republic, Hungary, Poland, Slovakia, and Slovenia) and the Baltic states (Estonia, Latvia, Lithuania). Evidence suggests quite high net employment growth (NECR) for the low educated both in the EU-15 and the NMS. For the middle' and the 'highly' educated labour mobility is higher for migrants than for natives, but the difference amongst the 'low' educated is not significant. There are also marked differences between the sub-groups of countries. In the EU-South and the Baltics, the relative employment growth and contraction in the pre-crisis and crisis-periods was much higher for migrants than for natives, most likely to do with the construction boom and bust.

Figure 9 Gross Employment Reallocation Rates and Net Employment Creation Rates, by country group and skill-groups

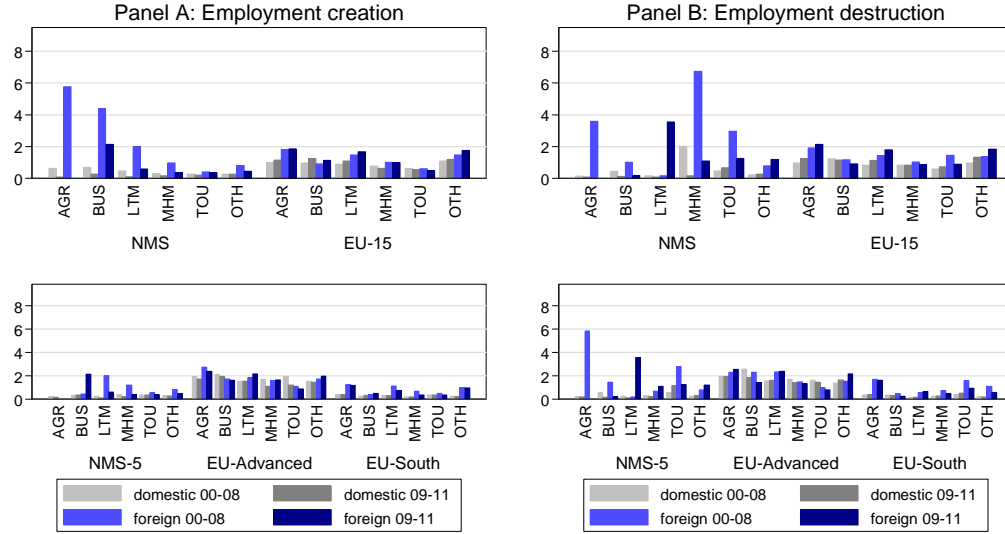


Source: Landesmann-Leitner, 2014

Inter-sector mobility, employment status change across industries was measured by GERR at the NACE 1-digit level. Significantly higher inter-sectoral job mobility can be observed for migrants than for natives in the EU-15 but not amongst the NMS. This higher inter-sectoral job mobility for migrants in the EU-15 shows up for all skill groups. By individual sectors, we find particularly high employment absorption of migrants in sectors such as hotels, finance, private households and public utilities such as electricity, gas, water.

Inter-regional mobility - employment status change across regions. For migrants significantly higher inter-regional mobility can be observed than for natives in the agricultural, the manufacturing, and tourism regions in the EU-15. This pattern also emerges by and large when we distinguish periods in which job destruction or job creation took place i.e. the greater sensitivity of migrants compared to natives to job-destruction and job-creation in these region types.

Figure 10
Inter-regional mobility: employment creation and destruction rates, by country group



Landesmann-Leitner, 2014

Note: AGR -Agriculture, BUS- Business, LTM - Low-tech manufacturing, MHM - Medium-high-tech manufacturing, TOU to tourism and OTH to other. The capital region is included in the business region

In order to shed light on key determinants of observable labour mobility rates a regression analysis was applied (specifications and detailed estimation results see in *Landesmann-Leitner, 2014*).

The results of the econometric analysis show a stronger elasticity of migrants reacting to business cycle fluctuations both in terms of gross mobility and net mobility than do natives. In general only weak and non-robust effects of a higher share of migrants being associated with more mobility of

natives in and out of employment can be observed. There is more robust evidence that the higher the share of migrants is the higher the mobility rates of migrants themselves are. However, this holds only for the EU-15. About net employment creation (NECR) there is weak evidence that a high share of migrants is associated with higher net employment creation of native workers in the EU-15 while, in the NMS, the opposite holds true. Hence, for the EU-15, there is no evidence that migrants replace native workers.

If we check whether 'the impact' of a high share of migrants is higher or lower in 'boom' or 'slump' periods (i.e. periods of above or below trend employment growth) we found a significant positive impact of a high share of migrants only in the EU-15 on GERR (and negative impact on NECR) in slump periods on migrants themselves but not on natives. No impact in boom periods was found. In the NMS, no significant effect was found altogether.

Regarding the *effect of labour market institutions/regulations*, results show that employment protection is related to significantly lower labour mobility, among both native and migrant workers in the EU27 countries. However, observable effects are higher for migrant workers. Strong labour market institutions intended to protect workers tend to reduce net employment creation of both native and migrant workers. However, the effect tends to differ between EU-15 and NMS. For instance, in the EU as a whole and the EU-15, both native and migrant workers experience significantly lower net employment creation if the degree of unionisation is high. On the contrary, for the NMS, net employment creation is unrelated to the degree of unionisation, for both native and migrant workers.

Net employment creation patterns are skill-specific and differ strongly between native and migrant workers. Particularly, for both the EU as a whole and the EU-15, relative to low-skilled native workers, net employment creation is significantly higher among high-skilled native workers. In contrast, migrant workers as opposed to native workers show no skill-related differences in net employment creation. Hence, while natives' net job creation reflects the skill-bias in additional employment, migrants' net employment does not. Gross mobility rates (GEER) of medium-skilled native workers are negatively affected in EU-15 countries (and this drives the same result for the EU as a whole) by the presence of a high share of migrants of the same skill category. That means that a higher share of migrants in this skill category reduces the pressure on natives for high gross mobility rates. On the other hand, there is a strong positive effect of a strong presence of low-skilled migrants on migrants of the same skill group's gross mobility in the EU, which is again driven by mobility patterns in the EU-15.

Amongst the NMS, we find a negative impact on gross mobility for the most highly skilled migrants from a strong presence of other high-skilled migrants in NMS labour markets. Again in this case the

presence of high-skilled migrants reduces the pressure for job mobility on migrants. When it comes to net employment creation (NECR) we find that there are positive effects on employment generation for the native low-skilled and – less pronounced – for the medium-skilled in EU-15 economies. No such effects were found for the NMS. On the other hand, we find a significant negative impact of a strong presence of medium-skilled migrant workers on net employment creation of migrants of the same skill group in EU-15 labour markets (which drives again the same result for the EU as a whole); no such effect was found for the NMS labour markets. Again we would use as an explanation the degree of substitutability between migrants and natives and migrants with each other to explain these different patterns. Furthermore medium-skilled workers are particularly employed in industrial sectors; hence we would hypothesise that the negative impact in EU-15 markets on migrants might have something to do with the general labour shedding of workers in that sector (which affects migrant workers more strongly).

Inter-sectorial mobility was analysed by calculating gross mobility flows of employment by sectors (i.e. sum of job destruction plus job creation across the various NACE 1-digit sectors). The share of migrants in the host country plays a non-negligible role for the mobility of native workers between sectors. More specifically, we find consistent evidence that a high share of migrant workers in the host country helps to spur mobility of native workers across sectors. In contrast, we find no significant effect of the presence of migrants on the mobility of migrant workers between sectors.

In the NMS, the number of years with the same employer matters for a cross-sectorial mobility of both native and migrant workers such that workers with longer years of employment with the same employer tend to be less mobile across sectors. Finally, we also find weak evidence for the role of labour market institutions for a cross-sectorial mobility of workers as the mobility of migrant workers is significantly lower if the degree of unionisation is high, irrespective of country-sample considered.

Inter-regional mobility we also found that a high share of migrants spurs mobility of native workers across regions. On the other hand, no significant effect was found for a migrant-on-migrant' impact. Hence, we did not find any evidence that a high share of migrants prior to the mobility decision exerts any significant pressure on migrant workers to move across regions for work.

About inter-regional mobility by skill types, our results consistently show that high-skilled native workers in the EU, the EU-15 or the NMS are less mobile across regions than their low-skilled counterparts. On the contrary, we find no significant differences in cross-regional mobility of migrant workers with different levels of skills. Native vs. migrant behavioural differences were also found with respect to the length of employment. In the EU as a whole, native workers with between 6 to ten years of employment with the same employer are less mobile between regions than those with less than six years with the same employer. No such differences emerge for migrant workers. For the

EU-15 alone, both native and migrant workers with between six and ten years of employment with the same employer are less mobile between regions. We also failed to find any evidence that mobility patterns of migrants differ by their years of residence in the host country, irrespective of country-sample considered.

Finally, our results again highlight that labour market institutions matter for cross-regional mobility of workers, to a limited degree. For the EU as a whole, the role of union density for cross-regional mobility differs by type of worker: while native workers show higher cross-regional mobility if union density is high, migrant workers, on the contrary, show lower cross-regional mobility if union density is high. For the EU-15 alone, we find that cross-regional mobility is higher among native workers if union density is high but no relationship between cross-regional mobility and union density for migrant workers. For the NMS, there is no significant relationship between cross-sectoral mobility and union density.

Social capital and migration of shrinking regions. In European countries, particularly in the post-communist transition region, peripheral areas are hit by strong economic, social, and demographic challenges. They seem to be the losers of economic development and are overrun by growing urban areas with abundance and diversity of human-, cultural- and real-capital. One main obstacle for development in these regions concerns out-migration, more precisely, out-migration of young and well-educated persons towards more developed agglomerations in general referred to as *brain drain*. Since on average, the leaving part is better educated than the remaining population, commentators identify a *circulus vitiosus* leading to self-reinforcing shrinking tendencies.

An often neglected dimension of labour mobility is social participation or social capital. Social capital is by itself a way to improve the quality of social life in shrinking regions when public efforts are reduced. Secondly, social participation might intensify social capital and strengthen ties to the local community. Both aspects might prevent people from leaving their home community and motivate them to search for prospects in shrinking regions – the first step to switching from the negative to positive cumulative causation scenario. The effect of different types of social capital on migration intentions was examined in the context of shrinking regions. Germany as a true natural experiment made it possible to identify the causal impact of communism on behavioural patterns (*Bönisch – Schneide- Hyll, 2013*).

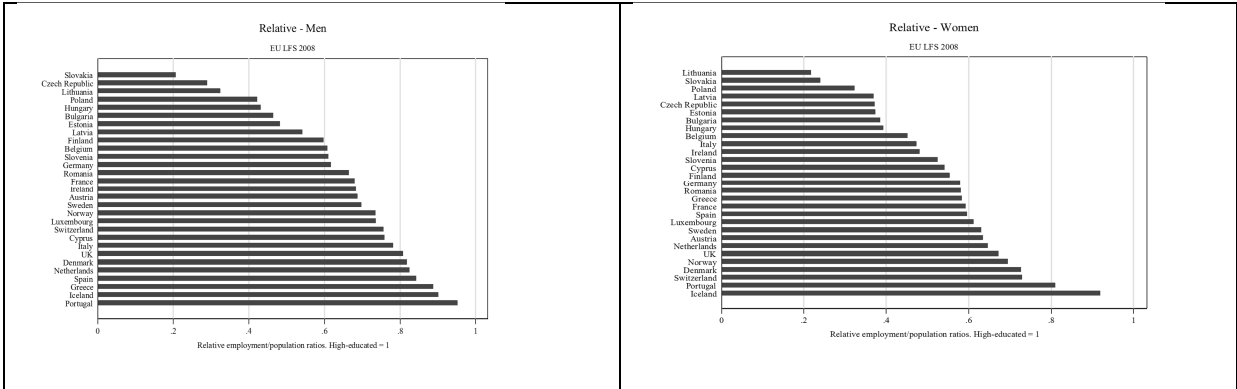
Based on data of the German Socio-Economic Panel (GSOEP), a representative survey of German households, the impact of social capital on the prospects of young people in shrinking regions was analysed with the help of econometric techniques. The model distinguished between the two basic types of social capital (formal and informal), took into account the simultaneous nature of the relationship between mobility preference and implemented an exogenous variable measuring the

effect of regional shrinking (specification of the model and detailed regression results see in *Bönisch –Schneide- Hyll, 2013*).

The results of the analysis show, that socio-economic factors, as well as social capital shrinking, does not affect mobility intentions. However, if an individual considers moving away he/she reduces his/her participation in informal and formal networks since the “returns to social capital” seem to be lost if the movement occurs and the person has to leave the local network base. Individuals characterised by strong informal ties show a significantly lower probability of moving away. In contrast, more qualified types of social capital as participation in local politics or initiatives seem to encourage spatial mobility. The reason for the mobility enhancing impact of formal social capital is the weak ties to network members living in other regions. Networks with extensive connections “to the world” but with a strong local base are required to keep the balance between openness and localness, between activating and keeping people (*Bönisch – Schneider - Hyll, 2013*).

Low unskilled employment. The problem of massive unskilled unemployment is a common and distinctive feature of CEE labour markets (*Figure 11*). The gap between high and low educated people in terms of job prospects is nowhere as wide within the EU and the OECD as in the post-socialist countries of Central and Eastern Europe. East-West mean differential in the unskilled employment to population ratios is significantly larger than the within-region variance (*Köllő, 2013*)

Figure 11 The relative levels of unskilled (ISCED 0-2) employment (High educated=1)



Source: Köllő, 2013. Based on EULFS data

Note: the data relate to the population aged 15-64 excluding students and persons older than 35, who never worked. Unskilled stands for those classified as ISCED 0-2

The region’s persistent failure to provide its unskilled population with work poses the risk of destructive social fragmentation, erosion of the legal and market institutions and slower growth through mechanisms discussed in *Easterly, Ritzen & Woolcock (2006)* and elsewhere. The

unequivocally poor performance of the post-socialist countries calls for explanations that derive the problem from their common legacies and contemporary histories rather than their highly diverse national labour market institutions. These common points have implications for the composition of jobs by skill content, firms' incentives to hire unskilled applicants, people's capacity to start small businesses and the scope for civil integration (*Köllő, 2013*).

The post-communist transition destroyed a multitude of simple jobs in the wake of de-industrialization, the demise of agricultural co-operatives and growing import competition. Both domestic privatization and FDI had a detrimental effect on the share and within-firm relative wages of blue collars. Job destruction in old firms and job creation in new ones were strongly biased against low-educated workers (See *Earle & Telegdy 2012* and *Commander & Köllő*).

Competition in the product markets also undermined what *Ellman (1979)* characterized as the 'labour intensive variants of capital intensive technologies'. As a consequence, firms had to employ an unusually high number of auxiliary labourers in order to keep the production process afloat. Even in the absence of trade shocks and technical progress these technologies had to disappear as they produced goods of inferior quality.

On top of the transition-specific effects, CEE economies were subject to the more general process of skill-biased technological change (SBTC) that shifted the relative demand curve for unskilled labour inwards. The recent increase of demand for low-educated workers, observed in several highly developed market economies and discussed in the job polarization literature has not reached the CEEs as yet, or, its impact has so far been offset by overwhelmingly negative effects in the tradable sector. This is probably explained by low demand for personal services on the part of a weak and small middle class i.e. lack of an important driver of job polarization in the West (*Manning 2004*).

The relative demand for primary degree holders within blue collar jobs is further reduced by substitution with workers of uncertified vocational qualification. Skill obsolescence forced many of these workers to take elementary and semi-skilled positions at a wage that only slightly exceeds the wage paid to primary degree holders. (*Kézdi- Köllő- Varga 2009*). Minimum wage regulation and benefits generally set a floor to wages at the bottom of the job hierarchy but the transition process created further limits. Unskilled wages could not adjust immediately and fully in a period when the communist wage grid was abolished and the wage offers started to move toward marginal products. In settings like that the low-productivity groups tend to set too high reservation wages in a potentially lengthy initial period since their unemployment benefits are high relative to their prospective wages, irrespective of whether the benefits are flat-rate or set as a fraction of previous earnings. Low-productivity workers learn this indirectly, from having poor prospects of being re-hired, and they obviously do so with substantial delay.

Part of the common heritage is the tiny size of the small firm sector relative to countries of similar development, where self-employment and micro firms are the major providers of jobs to the low educated. In terms of self-employment the gap is enormous, as shown in *Maloney (2004)* . The total gap is smaller because family-owned farms and shops in Romania, Poland and Hungary are often operated as unincorporated companies. Therefore these countries have low self-employment rates but relatively high small-firm density.

The CEEs jointly lag behind Western and Northern Europe, less so behind Southern Europe also, in terms of participation in civil activities (*Pichler- Wallace 2008*) and adult learning (*Hermann, 2014*).

Based on data of ALL Survey three countries were compared in respect of how the distribution of jobs by complexity and firms' willingness to hire low educated labour for jobs of different complexity contribute to unskilled employment: Hungary, as a representative of the CEE region, to Norway and Italy, two countries that integrate their low educated population more or less successfully and do so in characteristically different ways (*Köllő, 2013*).

Two indicators were used to characterize the complexity of a job: the number of literacy tasks⁵ present at a job and the weighted sum of tasks⁶. In order to distinguish between the effects of job composition (by complexity and firm size) and the within group shares of low educated workers the unskilled employment ratios were decomposed⁷.

Figure 12 shows the distribution of jobs by complexity and the share of low educated workers by job complexity, also indicating their population share. In Norway the modal job involves 10 different literacy-related activities. By contrast, in both Italy and Hungary the largest group of jobs requires no

⁵ Task 1 (tasks that are typical at white collar positions) Task2 and overall

⁶ Weights were coefficients of a wage regression that estimated the effects of literacy-related tasks at the workplace on earnings (for details see *Köllő, 2013*)

⁷

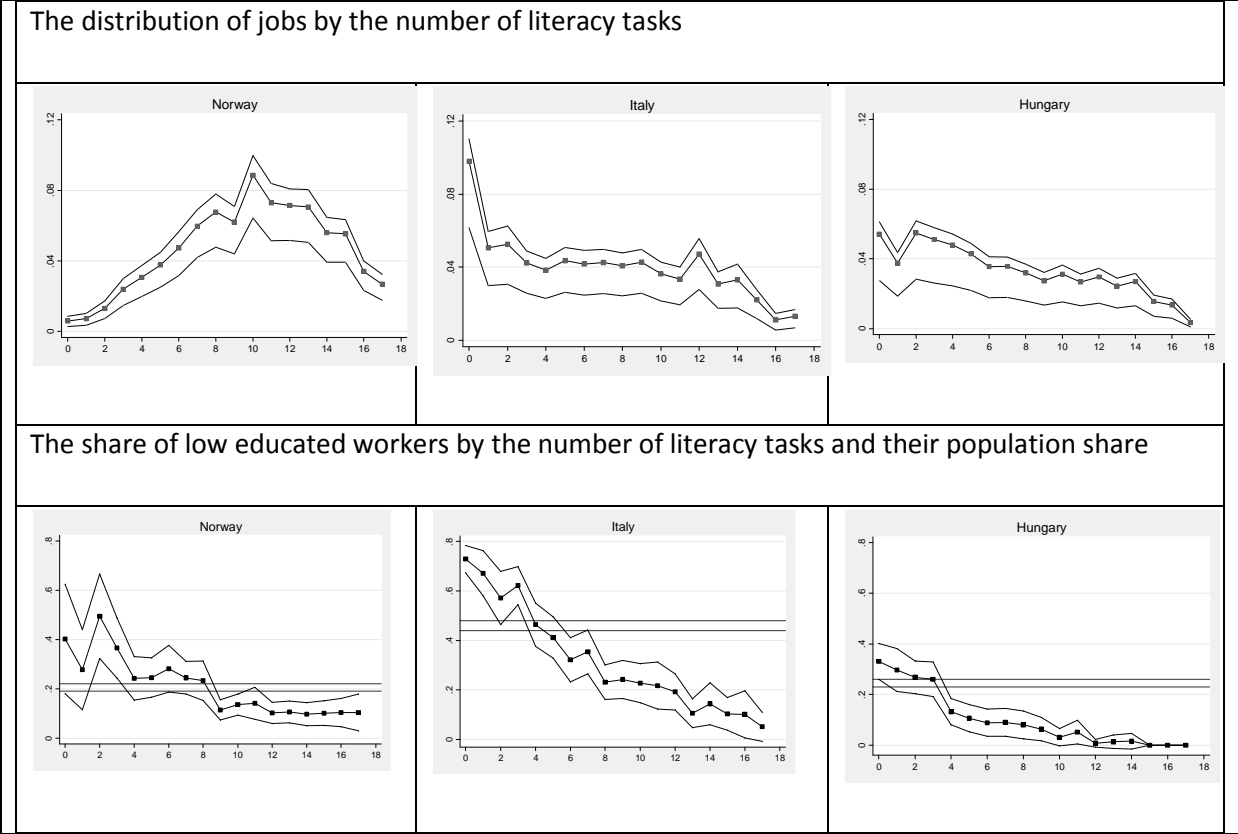
$$\sum_{j=1}^{17} \frac{E_j^L / E_j}{P^L / P} \cdot \frac{E_j}{P} = \sum_{j=1}^J \varphi_j \Omega_j = \frac{1}{P^L} \sum_{j=1}^J E_j^L = e_L$$

Where E_j stands for the number of employed persons in jobs requiring $j=0,1,\dots,17$ literacy tasks, L for low educated people while P and P^L denote the size of the total and the low educated populations. The first term in the first expression (φ) measures the representation of the low educated in j -type jobs, with $\varphi_j=1$ meaning that their share in j -type employment is equal to their population share. φ reflects a *share effect*. The second term (Ω) measures the ratio of total employment in j type jobs to the total population attached to the labour market. This is a *size effect*, which indicates how many j -type jobs are 'at the disposal' of the entire labour force. The product of the share effect and the size effect ($\varphi\Omega$) measures the contribution of j type jobs to the unskilled employment to population ratio in percentage points (e_L).

literacy tasks (present in our list) at all. The Italian economy operates a particularly large number of very simple jobs. Otherwise the curves for these two countries fall close to each other but Italy's higher aggregate employment rate is reflected in a larger area below its curve.

The share effect indicates that many low educated Norwegians attend complex jobs: their share in employment exceeds their population share in the domain of 0-8 literacy tasks unlike in Italy and Hungary, where low educated people are under-represented in jobs requiring more than 3 tasks. Compared to Hungarians, low educated Italians have a higher probability of being employed in all categories of jobs. Results are very similar restricting the attention to Type 1 literacy tasks typical of white collar positions (See in Köllő, 2013).

Figure 12 The distribution of jobs and the share of low educated workers by job complexity

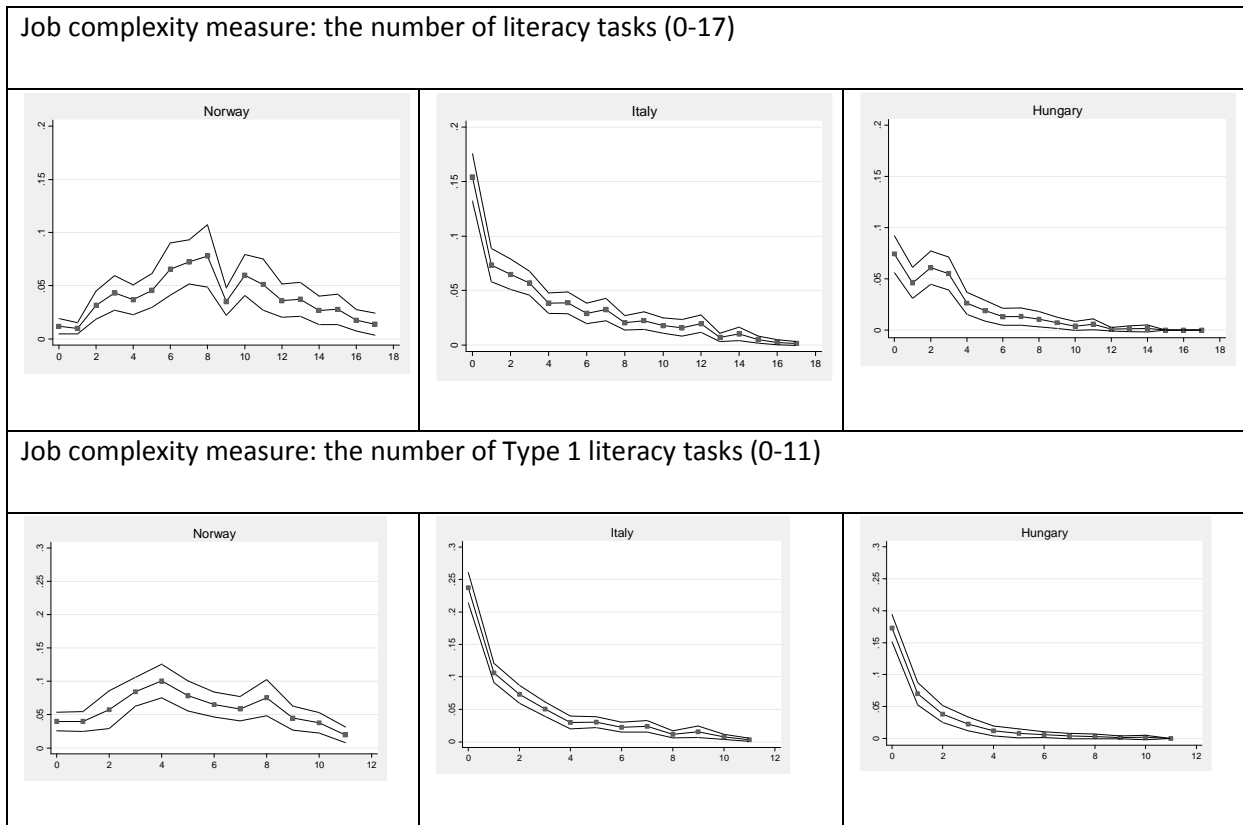


Source: Köllő, 2013

Figure 13 shows the total contribution of jobs distinguished by the number of all and Type 1 literacy requirements. In Norway, the bulk of unskilled employment comes from jobs requiring 6-11 different literacy tasks. In Italy, simple jobs demanding no literacy and numeracy at all play the most important role and the contributions monotonously decrease as we move toward complex

workplaces. Hungary follows a similar pattern but the contributions are smaller at almost all levels of complexity.

Figure 13 The total contribution of jobs of different complexity to the unskilled employment to population ratio



Source: Köllő, 2013

The results of a similar decomposition by firm size are presented in *Table 1*. Small firm density is far the highest in Italy and so is the share of low educated workers in both absolute and relative terms. The contribution of small firms to unskilled employment is small in Norway, roughly equal to large firms' contribution in Hungary and decisive in Italy.

The gap between skill requirements and low education can potentially bridge by different mechanism: adult training, informal learning and civil activities, which potentially develop the cognitive and non-cognitive skills of the adults with primary school background. More efficient screening and selection is a plausible explanation of how some low educated workers can attend complex jobs.

Table 1 Accounting for the role of small firms in unskilled employment

	Norway	Italy	Hungary
<i>Size effect</i>			
Jobs in small firms/working age population	0.23	0.39	0.24
<i>Share effect</i>			
Unskilled share in small firms	0.16	0.43	0.11
Unskilled share in the population	0.20	0.46	0.25
Unskilled share in small firms/share in the population	0.77	0.94	0.66
<i>Total contributions</i>			
Unskilled employment to population ratio	0.69	0.49	0.34
Large firms' contribution	0.52	0.13	0.18
Small firms' contribution	0.17	0.36	0.16

Source: Köllő, 2013

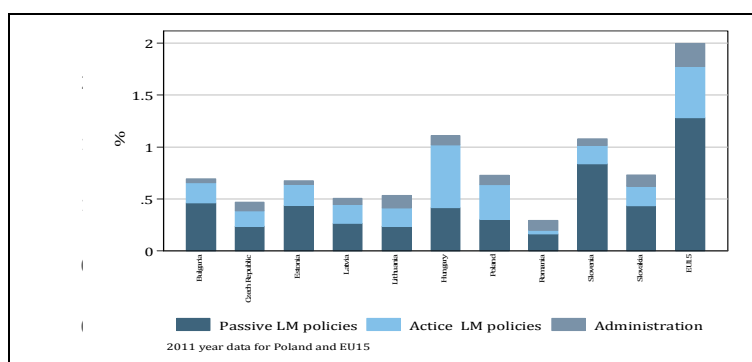
The results of the analysis suggest that unskilled employment in Norway benefits from synergies between work in skill-intensive jobs, intense adult training, informal learning and involvement in civil activities. In Italy, workplaces requiring no literacy skills at all have the largest contribution, but small businesses tend to employ low educated workers at a large scale even in highly complex jobs. In Hungary, insufficient skills (relative to Norway) and an undersized small-firm sector (relative to Italy) set limits to the inclusion of the low educated. An extreme degree of social isolation is likely to deteriorate their skills and jobs prospects further.

Hungary, together with other post-socialist countries, spectacularly fails at integrating its low educated population and the findings on the two comparators do not predict easy escape from this position. The characteristics found important for Hungary are undoubtedly region-specific. The traditional small firm sector was destroyed in all communist countries with the partial exception of private farming in Poland and Slovenia. The heritage of a low educated population trained for lifelong work in elementary jobs is also a common feature and so is the scarcity of governmental and civil organizations that could promote post-school skill formation and build bridges to the rest of the society.

II. EFFECTIVENESS OF EMPLOYMENT POLICIES (Task 2)

Employment policies in CEE countries – descriptive analysis. The CEE countries had introduced similar institutions as the old EU member states, with some differences across countries. In CEE countries, both passive and active labour market policy measures relative to the GDP have been below the EU-15 level. In 2010 expenditures varied between 0.58% in Bulgaria and 1.34% in Hungary, while the respective value in the EU-15 was exceeding the 2% mark. After 2010 the expenditures on labour market policies decreased in all CEE countries, but Bulgaria. In 2012, the latest year for which data are available, expenditures on labour market policies as a percent of GDP was the lowest in Romania (0.29 %) and the highest in Hungary (1.14 %) among CEE countries (Figure 14).

Figure 14 Expenditures on Labour Market Policies, in % of GDP, 2012



Source: Source: Based on Eurostat DG EMPL data

Unemployment benefits schemes in the CEE countries are characterised by high initial replacement rates (dropping remarkably in the first year of entitlement), limitations in terms of their benefits level and duration, low coverage and restricted access. Moreover, the role of Public Employment Services (PES) and the range of available services are not very developed with limited monitoring or obligations to participate in activation strategies. While unemployment assistance is very uncommon in the CEE countries – with the exception of Estonia, Latvia and Hungary - the unemployed can draw on substantial means-tested income support provided by housing and social benefits.

Throughout the past decade, there have been numerous changes in the unemployment insurance schemes in the CEE countries (*See Table 2*). In Bulgaria, the Czech Republic and Romania four or more changes have occurred in the period 2001-2012. The revisions of the unemployment schemes, especially the tightening of the eligibility criteria, but also active labour market policy measures

contributed to a reduction in the share of unemployment benefits recipients in most CEE countries in the past two decades. In Poland and Hungary, about 80% and 60% respectively of registered unemployed were entitled to unemployment benefits in 1990 while in 2011 the respective share shrank to 16.5% and 19%; in the Czech Republic, Hungary and Romania the share was cut by half while it increased somewhat in Slovenia. In 2011 the share of unemployment benefits recipients varied between 10% in Slovakia and 40% in Romania.

Table 2

Major changes in the unemployment benefits systems in the new EU Member States 2001-2012

	Unemployment insurance (UI)	Unemployment Assistance (UA)	Social Assistance (SA)
Country			
Bulgaria	2000,2004, 2007,2009, 2010	Absent	Absent
Czech Republic	2004, 2007, 2012, 2012	Absent	No significant change
Estonia	2007, 2009	2009	No significant change
Hungary	2005, 2011	2005, 2011	No significant change
Latvia	2010	2002, 2010	2009
Lithuania	2005, 2008	Absent	2009
Poland	2003, 2008	Absent	2004
Romania	2002, 2004, 2007, 2008, 2009, 2010	Absent	2012
Slovakia	2003, 2004	Absent	2003
Slovenia	2006, 2010	Removed in 2006	2010

Source: Vidovic, 2013. Based on Eurofound, 2012.

The individual countries responded differently to the crisis in terms of eligibility criteria: while in Estonia, Romania and Slovenia eligibility criteria were somewhat relaxed after 2007, they were tightened in the Czech Republic, Hungary, Lithuania and Romania. With respect to the duration of benefit the maximum duration (depending on the years of service, the period insured, age of the applicant) ranges between two years in Slovenia and only three months in Hungary, which introduced very tight restrictions in 2011. In most other CEE countries, the maximum benefits duration is 11-12 months. In most cases the amount of the benefit is determined as a share of the recipient's previous earnings such as in Bulgaria, Estonia, Hungary and Slovenia; in the Czech Republic it represents a proportion of the average wage in the national economy, in Romania a variable rate of the national reference indicator, while in Poland it is dependent on the applicant's records and in Lithuania it consists of a fixed and a variable component.

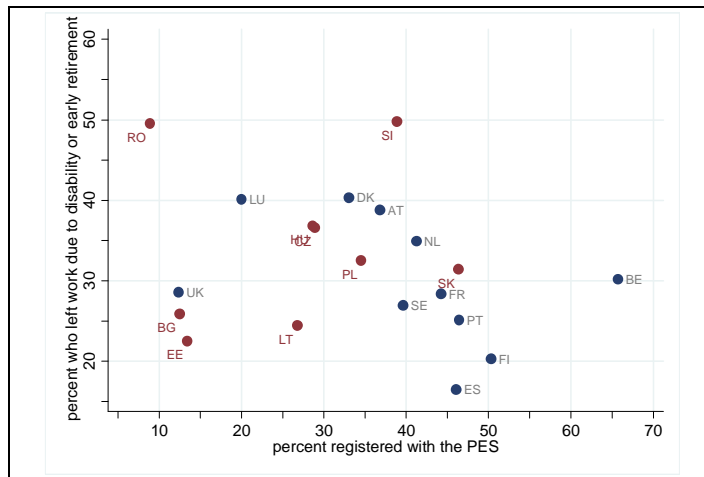
In the CEE countries, expenditures on ALMPs as a percent of GDP were below the EU-15 level in the period 2004-2012, excepting Poland in 2010. With the exception of Bulgaria and Romania all countries of the region reported rising expenditures on ALMPs after the outbreak of the economic and financial crisis. In 2010, the last year for which data are available, ALMP expenditures varied

between 0.09% in Bulgaria and 0.6% in Poland; also, Hungary and Latvia reported values above 0.5%. In 2012, the last year for which data are available ALMP expenditures varied between 0.03% in Romania and 0.61% of GDP in Hungary. During the crisis in some countries major shifts were observed from active to passive measures, with the most dramatic in relative and absolute terms recorded in Bulgaria, where rising expenditures for unemployment benefits have largely crowded out spending on active measures (*Eurofound, 2010*). Remarkable shifts were also reported in Lithuania and Slovakia. Over that period, NMS used for financing ALMPs primarily funds provided by the European Union, the European Social Fund – ESF in particular (*Tvrdon and Cieslarova, 2012*). The priorities of ALMPs differ from country to country: while the Czech Republic and Poland support employment and rehabilitation, Hungary focuses on employment incentives and Slovakia on direct job creation.

Effectiveness of activation policies. Activation policies are targeted at people of working age who are not in work, but who could potentially work and are in unemployment benefit or sometimes on social assistance or disability benefit. Policymakers in Central and Eastern European countries have taken varied approaches to the activation of non-employed persons, and while there has been a move towards stricter eligibility criteria and a larger emphasis on jobseekers' obligations since the year 2000, large differences in policies persist. In broad terms, the behavioural conditions of unemployment benefits follow Western European standards in all the CEECs, but with much variation in the details of activation rules and most probably in the implementation as well (*Csillag – Samu-Scharle, 2013*).

Figure 15 shows to what extent the non-employed are registered at the Public Employment Services (PES) and the use of disability and early retirement benefits. Registration at the PES can be relatively easily influenced by legislation, and which can serve as a precondition for being targeted by more intensive activation measures. Disability and early retirement benefits grant access to welfare benefits without job search requirements and hence these are the most often used ways of withdrawal from the labour force, especially among older workers.

Figure 15 Registration rates and proportion of the non-employed who left their job due to disability or early retirement



Source: Csillag – Samu- Scharle, 2013. CEEs are marked with red other EU countries with blue.

In CEE countries, there is a pronounced variation in terms of registration rates of the non-employed, which ranged from below 9 percent in Romania to above 46 percent in Slovakia. What is however more remarkable is that registration rates tend to be at a lower level in CEE countries, where the median registration rate was 29 percent, much lower than in EU15 countries, where the same figure was 44 percent. It is likely that this has to do not only with the differences registration policies, but also with the fact that the generosity of benefits is lower in CEE, and the eligibility conditions are slightly stricter.

There also appears to be a moderate negative correlation between the registration rate and the proportion of non-employed on disability/early retirement benefits in EU15 countries, and this negative association lends empirical support to the assumption that those on disability/early retirement benefits are usually not targeted by activation policies. In CEE countries, no pronounced relationship between these two variables can be observed, or in other words, in CEE countries a relatively large proportion of those who have not retreated from the labour force via disability/early retirement benefits are not in contact with PES.

Table 3 shows the expenditure on PES and the strictness of job-search monitoring. CEE countries tend to spend on PES services less than half of what EU15 countries do. It also appears that while those EU15 countries that enacted stricter job search monitoring rules tend to spend more on PES services than those with relatively lenient rules. No similar pattern is found in CEE countries. It is also worth noting that, while quite naturally countries with higher registration rates tend to spend more on PES services, this does not apply to stricter EU15 countries.

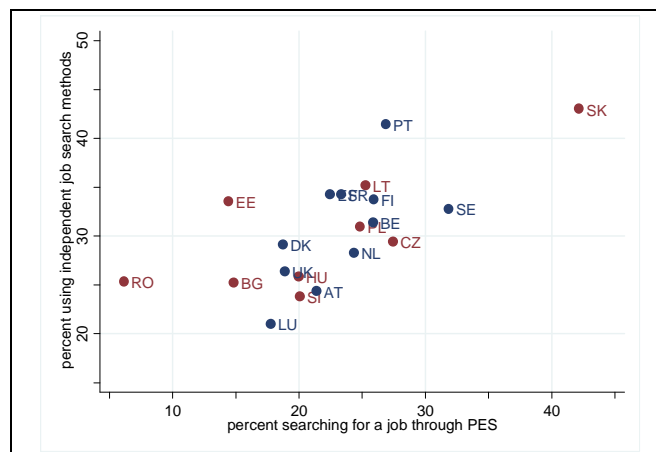
Table 3 Registration rates and expenditure on PES, by strictness of job search monitoring and region

	Lenient job search monitoring				Strict job search monitoring				Total			
	Percent registered with PES	Standard Deviation	Expenditure on PES services (% of GDP)	Standard Deviation	Percent registered with PES	Standard Deviation	Expenditure on PES services (% of GDP)	Standard Deviation	Percent registered with PES	Standard Deviation	Expenditure on PES services (% of GDP)	Standard Deviation
EU15	42.46	15.61	0.13	0.06	36.22	13.82	0.23	0.10	39.62	14.45	0.18	0.09
NMS	26.13	9.51	0.09	0.03	26.85	16.02	0.07	0.04	26.53	12.74	0.08	0.04
Total	35.93	35.93	0.12	0.12	31.53	31.53	0.15	0.15	33.73	14.93	0.13	0.09

Source: Csillag – Samu- Scharle, 2013.

There is substantial variation across countries in the proportion of non-employed using both the services of PES and the proportion conducting independent job search (*Figure 16*). Nevertheless these two proportions mirror each other relatively closely.

Figure 16 The proportion of non-employed search for a job through the Public Employment Services and the proportion conducting independent job search



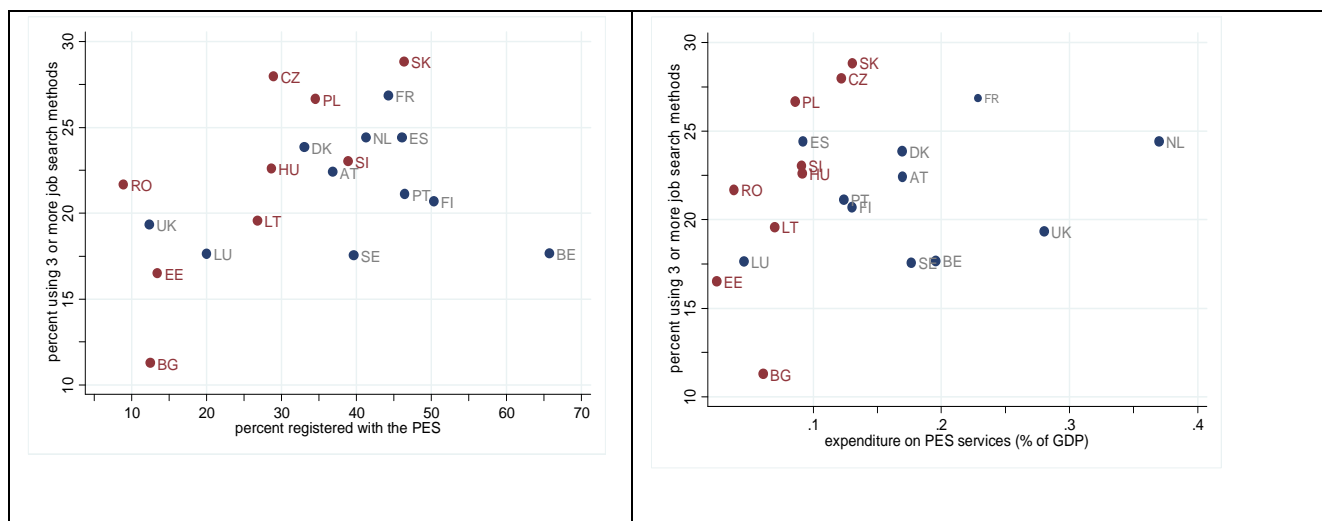
Source: Csillag – Samu- Scharle, 2013. CEEs are marked with red other EU countries with blue.

Only a minority of non-employed were searching for a job intensively as the proportion reporting using three or more job search methods was in the range of 17 to 27 percent. Job search effort seems to increase with registration while the co-movement of the spending of PES services and search effort is much weaker (*Figure 17*).

Figure 17 The relationship between intensive job search and (a) registration rates, (b) expenditure on PES

(a)

(b)



Source: Csillag – Samu- Scharle, 2013.

Various activation approaches may lead to different search activity. The effect of various activation policies on search activity was analysed with regression estimates (the different specifications and detailed estimation results see in *Csillag – Samu- Scharle, 2013*). Search activity was measured with three alternative measures: (i) the proportion of non-employed looking for a job through the PES, (ii) through other channels, and (iii) the proportion of jobseekers using at least three different search methods. Variables representing activation policies were: the registration with the PES (which captures the extensive margin), spending on PES (which represents the intensive margin.) Disability/early retirement status, spending on other elements of labour market programs, as well as a set of background characteristics was also controlled for. Grouped data were used to perform regressions, where a group represented a gender/age group/education level/length of non-employment spell combination. *Table 4* summarizes the expected outcomes of the different activation policies.

Table 4 PES strategies and expected outcomes

Registration	PES spending	Search monitoring	Examples	Expected outcomes
Low	Low	Lenient	BG, CZ* Hu, PL*	Low search activity
Low	Low	Strict	RO, EE, LT	Low search activity
Low	High	Lenient	DK	Low search activity, counselling
Low	High	Strict	AT, UK	Search intensity increases
High	Low	Lenient	BE, FI	Search via PES increases Independent search might decrease
High	Low	Strict	SI, SK	Search via both PES and independent methods increase, no increase in search intensity
High	High	Strict	NL	Search via both PES and independent methods increase, higher search intensity

*The Czech and Polish activation approach is not lenient in some aspects, so their grouping depends on the choice and weighting of indicators of activation rules.

The estimation results are in line with earlier research in old member states and confirm the effectiveness of a consistently strict approach to activating the non-employed population and also point to synergies between certain policy elements. A combination of high spending on Public Employment Services and strict monitoring of job search yield high search intensity irrespective of the coverage of registration requirements. This is an effective strategy to the extent that high search intensity yields high reemployment rates. At the other extreme, limited registration requirements and low spending on PES yield low search activity, even if job search monitoring is strict. In-between activation approaches appear to yield mixed results.

Quality of labour market related decision-making and policy design. Employment rates show great variation across Central and Eastern European countries, as shown by their trends (*See Figure 1. and Figure 2*). Research evidence suggests that labour market institutions are important determinants of employment/unemployment. The institutions though that could explain that difference, however, range from legal traditions to pension systems, from union strength to education policy. Even if we concentrate on labour market policies proper, like labour taxation, unemployment benefits, employment protection legislation, wage setting, or working time regulations, and active labour market policies, these are different norms, designed and implemented by different agencies, calling on different skills and consultations with different groups, having effects in different horizons and on different constituencies that effect the motivations of political decision makers in different ways.

Instead of trying to compare these different measures across countries for analysing the quality of labour market related decision-making and policy design a one-dimensional measure was estimated (*Váradí, 2014*). One -dimensional measures of government quality have been routinely used in cross-country comparative research in general (e.g. World Bank Government Effectiveness Index, Quality of Government measure of the professionalism of public administration).

The one-dimensional measure of the quality of labour market related decision-making and policy design that was used in the analysis was a time average of budget spending on active labour market policies (ALMP) as a percentage of GDP corrected for European Social Fund spending, in proportion to the size of the labour market problem to tackle: the proportion of men not employed that is who are inactive plus unemployed. The reason for using male employment was that female employment is, to a large extent, related to other policy measures (e.g. child benefits).

This proxy variable might be a good measure as ALMP-s are meant to affect almost exclusively the labour market (as opposed to other measures with multiple effects like changes taxes or social

transfers), and they are in the purview of designers of labour market policies. Well-targeted ALMP programs have tangible positive effects: job search assistance programs are best in the short-run impacts, whereas classroom and on-the-job training programs tend to show better outcomes in the medium run. *Table 5* summarizes the values of the uncorrected and corrected labour quality proxy variable and *Table 6* the ranking of CEE countries according to these variables.

Table 5 Proxy for labour market quality, year?

Country	Average ALMP spending/GDP over the men not employed ⁸	Corrected average ALMP spending/GDP over the men not employed ⁹
Poland	2.02	2.2
Czech Republic	1.38	1.64
Estonia	0.93	1.33
Slovenia	0.99	1.19
Latvia	0.96	1.18
Slovakia	0.87	0.92
Lithuania	0.77	0.87

⁸ Average ALMP spending as a percentage of GDP, 2007-2010, excluding public works over the proportion of men not employed

⁹ Average ALMP spending as a percentage of GDP, 2007-2010, excluding public works, according to Eurostat plus average active ESF spending 2007-2013 as a percentage of GDP over the proportion of men not employed

Hungary	0.66	0.73
Bulgaria	0.41	0.71
Romania	0.24	0.43

Source: Váradi, 2013.

At the bottom of the list are Bulgaria and Romania. Just above them, in the 8th position, Hungary, that spends about the same (low) percentage of its GDP from the budget on non-public works ALMP as Estonia, Lithuania, Slovakia and Slovenia, but has a greater employment problem to tackle with it than the others. Lithuania and Slovakia come next, with similar spending levels, but Lithuania has a larger employment gap, if not as large as Hungary. The order of the next three, Latvia, Slovenia and Estonia is the only part of the ranking that is sensitive to whether the Eurostat data is corrected with the ESF data or not. It is Estonia that spends most by far of its structural funds on ALMP. It is the Czechs, who spend a relatively sizable chunk of their GDP on a problem that is less than it is for the others, who get the silver medal, and Poland, with a much more generous ALMP-budget than the others, comes in first. It might occur that Poland could afford to be more generous than the others as its cumulative real GDP growth rate over the 2006-2010 period was the highest in the region. However, that cannot be the full story: Slovakia was not motivated by its stellar 2007 growth rate to similarly increase its ALMP budget, and countries in downturn did not get rid of their ALMP spending either.

Surprisingly the three Baltic states, often referred to as poster children from Eastern Europe and as successfully emulating Scandinavia in many respects of policy do not come out on top at all (3rd, 5th and seventh place)- Table 6. This is in line with the conclusion of *Toots and Bachmann (2013)*, who, surveying the welfare and employment policies of the three states conclude that poor performance in meeting new social risks poses a greater challenge for the [three Baltic] post-communist welfare states than their lag in terms of gross welfare expenditure and who blame Baltic political elites to just „push the old things harder” instead of moving towards building what they call an efficient ‘social investment state.’

Table 6 Rankings of LMP quality, year ?

Country	Average ALMP spending/GDP over the men not employed	Corrected average ALMP spending/GDP over the men not employed

Poland	1	1
Czech Republic	2	2
Estonia	5	3
Slovenia	3	4
Latvia	4	5
Slovakia	6	6
Lithuania	7	7
Hungary	8	8
Bulgaria	9	9
Romania	10	10

Source: Váradi, 2013.

Considering the theory, previous studies and the case of Hungary and the Czech and Slovak Republics (see in Váradi, 2013) a set of structural determinants was identified (Table 7) that may have caused the LMP quality proxy to be high or low. With the help of fuzzy-set qualitative comparative analysis combinations of those factors that might explain the cross-country variation were identified (for detailed description see Váradi, 2013).

Table 7 Explaining quality of labour market decision making in CEE

Country	Dependent variables		Independent variables						
			Region		Structural				
			BALTIC	SOUTH	Government effectiveness index ¹⁰	GDP growth rate ¹¹	Unemployment ¹²	Party ¹³	Openness ¹⁴
Bulgaria	0.41	0.71	0	1	0.00	7.21	6.1	2.25	118
Czech Republic	1.38	1.64	0	0	0.97	6.67	4.1	1.75	131
Estonia	0.93	1.33	1	0	1.15	-8.62	4.0	1.75	165

¹⁰ World Bank Government Effectiveness index, 2007-2010 average

¹¹ Real GDP Growth rate, 2006-2010

¹² Long-term unemployment, 2006-2010 average

¹³ Ruling party in government 2007-2010 average: 1=right, 5=left

¹⁴ Trade openness in 2009-2011

Hungary	0.66	0.73	0	0	0.73	-4.64	4.0	4	163.3
Latvia	0.96	1.18	1	0	0.59	-13.56	4.1	2.25	105.7
Lithuania	0.77	0.87	1	0	0.67	-2.29	3.1	2.5	136.5
Poland	2.02	2.20	0	0	0.54	18.49	9.5	2	86.2
Romania	0.24	0.43	0	1	-0.24	5.36	4.3	2.25	77.9
Slovakia	0.87	0.92	0	0	0.84	16.07	3.1	3.75	160
Slovenia	0.99	1.19	0	0	1.08	3.23	11.3	4	130.6

*Inactive plus unemployed

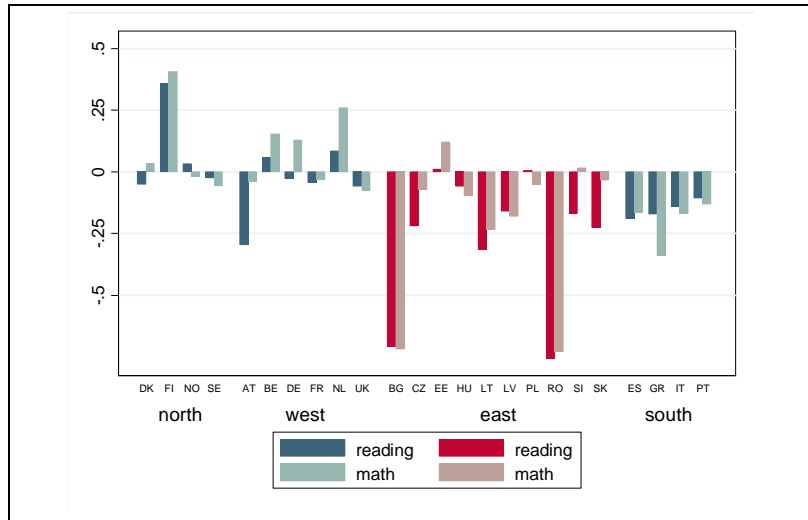
Source: Váradi ,2013

The results show that there is no good labour market policy without the public administration in general being effective. Differences in whether left-wing or right-wing parties ruled governments and whether the country is more or less open to trade do not seem to matter that much in the CEE region. It is likely that a serious social challenge in the shape of serious long-term unemployment is necessary to provoke the response that is decent quality labour market policy.

III. EFFECTIVENESS OF TRAINING AND EDUCATIONAL INSTITUTIONS FOR SKILL FORMATION (Task 3)

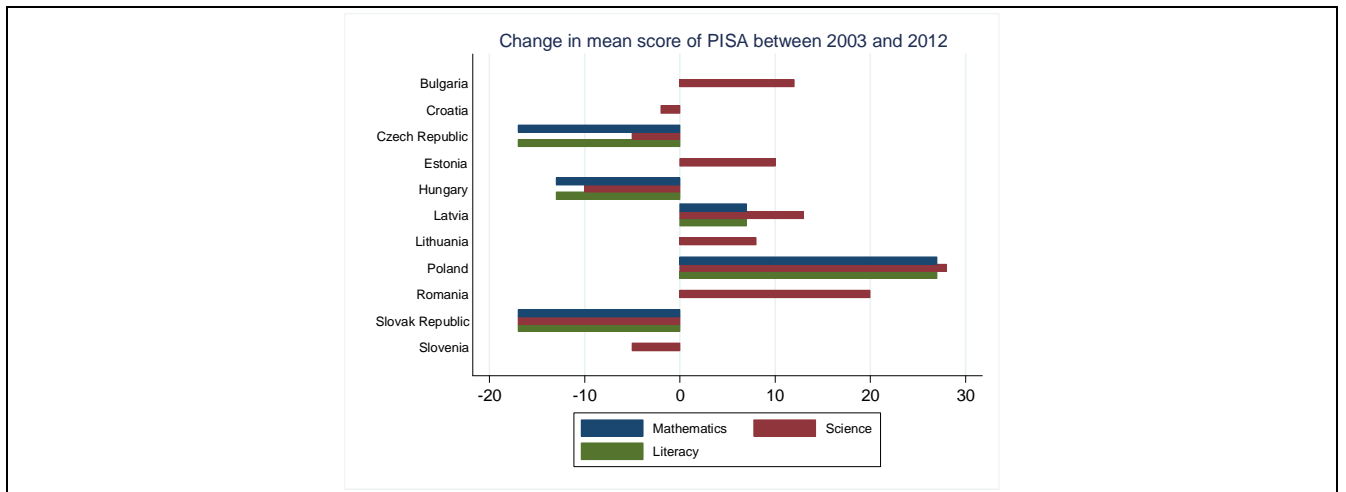
Weak basic skills might contribute to low employment probabilities of certain groups in CEE countries as it was discussed earlier. International student achievement data indicate weaker basic skills in most of the CEE countries compared to Western and Northern countries (*Figure 18*). Nevertheless there are marked differences across CEE countries concerning changes of students' performance. While in some CEE countries (Poland, Latvia) student performance improved in all skill categories – literacy, numeracy, science - in others students' performance deteriorated significantly (Czech Republic, Hungary,). The deterioration in the latter group could be observed not only in average results, but on the one hand in growing share of students whose skills are insufficient and on the other hand in decreasing share of students whose achievement is above average (*Figure 19*). It seems feasible that these differences are – at least partly – due to different education policies the countries adopted.

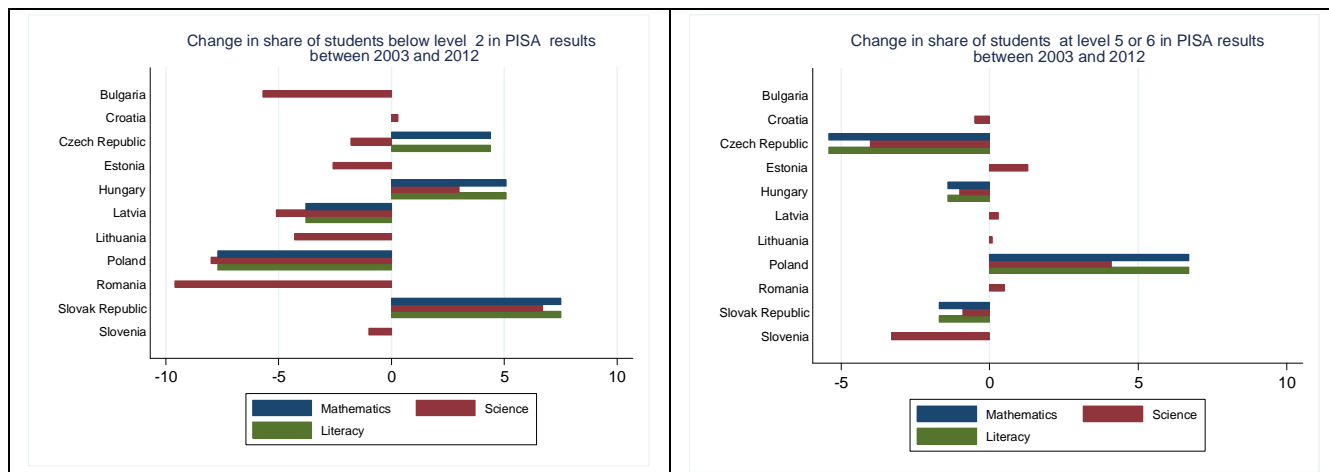
Figure 18 Standardised student test scores, 15 years old – PISA 2009



Source: Hermann, 2014

Figure 19 Changes in PISA score in CEE countries





Source: Varga, 2014. Based on OECD PISA data

The effect of education institutional changes on students' performance. To assess what kind of educational reforms would add to improve students' achievement a comparative analysis of four educational systems (Czech Republic, Hungary, Poland, Slovakia) was conducted on the sample of countries selected according to the Most Similar System Design setting (*Herbst- Wojciuk, 2014*). Out of these four countries, Poland strongly improved the quality of its education and the performance of its students. In 2012 PISA tests, Poland ranked among the top 15 OECD countries. The average achievement in the other three countries has decreased over the same period. The proportion of 15-year old students performing below the baseline level fell in Poland while increased in the other three countries.

Education system of the Czech Republic, Hungary, Poland, and Slovakia were very similar at the end of communism. These four countries were at a similar level of development. The structure of secondary schooling corresponded to the needs of socialist economies - as perceived by the central planners in the respective countries. In all the four countries primary school lasted for 8 years, followed by tracking into academic, vocational and basic vocational and academic program of which the first two concluded with final examination, obligatory for graduates intending to enter tertiary education. In all considered countries vocational path dominated general secondary education at the beginning of the 1990s. During 1990s all four countries experienced a peaking demand for general secondary and tertiary education. The central planning for enrolment in different vocational profiles was suspended and the number of candidates for vocational training fell dramatically. While at the beginning of the 1990s the share of basic vocational training was reaching 40% in secondary education enrolment in 2008 basic vocational schools attracted only 16% of students in the corresponding age cohort in Hungary, 18% in Slovakia, 26% in Czech Republic, and 15% in Poland.

The shift towards general schools and growing demand for tertiary education was related to the transitional shock on the labour market and increasing returns to education and general skills. Faced

with sudden restructuring and uncertainty as to the skills which would be required by employers, a general education gave better chances of employment and higher wage than specialized training, while vocational training programmes were seen as inadequate. Enrolling in higher education also delayed the moment of entering the labour market, making it possible to wait out the difficult economic period. The existence of this mechanism is confirmed by OECD analyses, showing that the estimated private returns to education in all four discussed countries are much higher than the OECD average.

With respect to education management, the new governments started with the relaxation of central bureaucratic control and extending autonomy on the level of schools and local self-governments. New curricula, in some countries competing with each other, establishment of school-level bodies with representatives of parents and giving space to the market to operate were means to weaken state monopoly in education. All four countries started to extend school autonomy at the beginning of the transformation process, already in early 1990's. Nevertheless in the course of reforming their educational systems these countries applied different institutional solutions that may have influenced learning outcomes.

The following results of the comprehensive analysis show the most distinctive differences between education reforms in Poland and the other three countries:

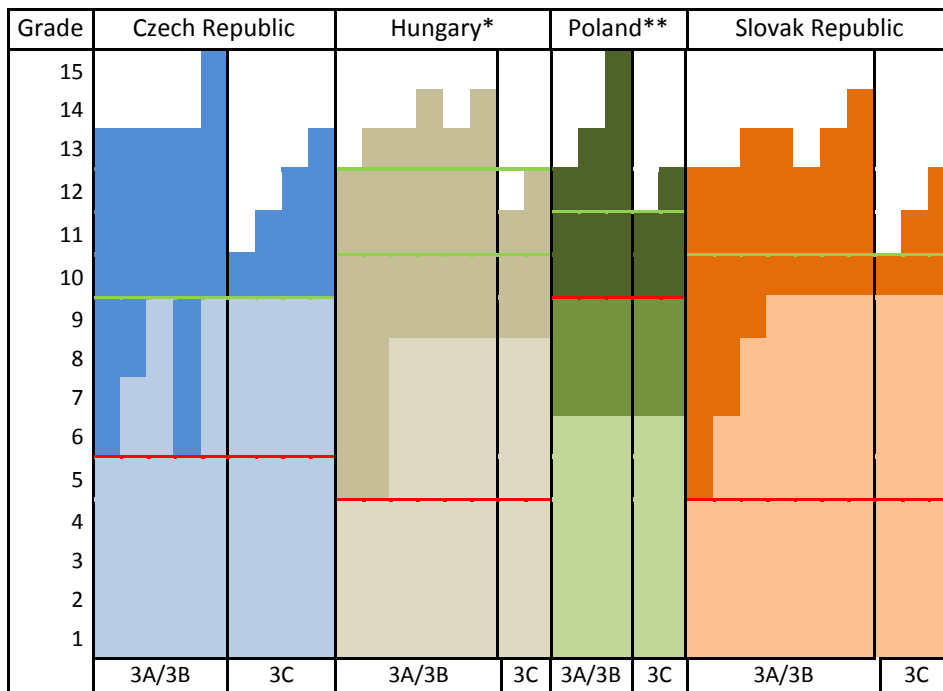
In all 4 countries some crucial competencies with respect to education are in the hands of local authorities or school principals. And in all of them questions are being raised if all local governments and schools have sufficient skill and knowledge to fulfill the assigned tasks properly. One way to look on this issue is to examine the fragmentation of school system and territorial administration. The smaller the units, the more likely some of them may miss resources to provide education of good quality. Local governments in all countries contribute financially to education system maintenance, so it is also important to look at the fiscal strength of school governing municipalities.

Both local administration and primary school network in Czech Republic, in Slovak Republic, are very fragmented and so was it in Hungary before the latest reforms in 2011. Average municipal population is below 2000. Even if not every municipality runs a primary school, the average school is very small. In contrast, Polish municipalities are rather large (15500 inhabitants on average). Mean municipality in Poland maintains between 4 and 5 primary schools. Fragmentation of municipalities and schools may cause difficulties in effective school management and this might be one of the reasons for declining students' performance in the Czech Republic, Slovakia and Hungary.

Another and perhaps even more important difference between Poland and the other three countries was what kind of changes took place concerning tracking students into various schooling paths

(Figure 20).

Figure 20 Organization of schooling in Czech Republic, Hungary, Poland, and Slovak Republic



Notes: Green line represents the end of compulsory education; red line represents the stage when first tracking to schools of different profiles occurs

Source: *Herbst- Wojciuk (2014)*

In the Czech Republic, Slovakia and Hungary in the course of education reforms early tracking and streaming of students based on academic abilities was favored. In all the three countries a growing number of secondary schools started to enroll students even after grade 4 and 6. On the contrary Poland's approach to tracking is very restrictive. Until 1998 (before introduction of lower secondary school) first tracking took place after graduating from primary school (thus after grade 8). After introducing the separate middle tier of schooling, common and compulsory education lasts till grade 9, and first tracking follows graduation from lower secondary school. It is not possible to enroll to upper secondary school before graduation from the lower secondary level, so there is no opportunity to track students before they conclude grade 9.

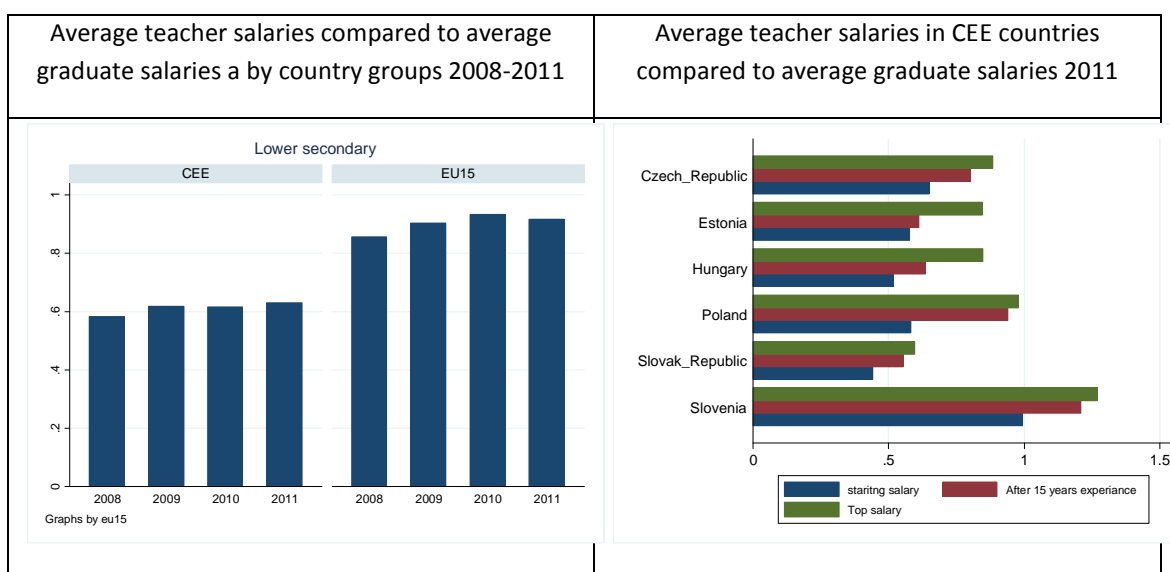
Finally, there are differences between Poland and the other three countries concerning changes in relative position of teachers.

Teacher salaries – teacher quality. Teacher salaries – teacher quality. Research evidence suggests the quality and effectiveness of education; students' performance strongly depends on teaching quality. The best performing education systems recruit their teachers from the top third of each graduate cohort. Quality of teachers is likely to be higher if their real and relative level of remuneration is higher as higher pay attracts more able graduates into the teaching profession for

example *Dolton, and Gutierrez (2011)* found that pupil scores rise significantly as teacher salaries rise. The potential casual mechanism to link teachers' pay and student outcomes is that higher pay induces more able individuals into the teaching profession, that higher wages make teaching profession more selective.

In most CEE countries, teacher salaries are low in comparison with other graduate salaries and the difference between teacher salaries and other graduate salaries is much larger than in the EU15 countries (*Figure 21*). Among CEE countries, relative teacher wages are more attractive in Slovenia and Poland than in other CEE countries.

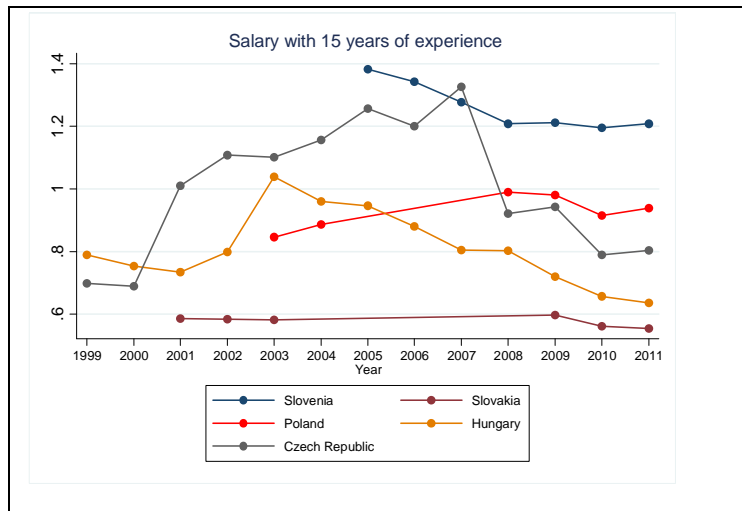
Figure 21 Teacher salaries compared to average graduate salaries



Source: Varga, (2014). Based on OECD data

Not only the level of relative teacher salaries is low, but there had been a marked decrease in relative teacher salaries also in most of the CEE countries in the 1990s during the transition period. Demand was increasing for higher education graduates and teacher salaries could not keep up with growing wages of higher education graduates outside the public sector. In some countries, teacher wages exhibited a cyclical pattern, the long period of sustained decline was followed by a dramatic increase which was followed again by a substantial decline (Hungary, Czech Republic). The worsening of relative salaries might have affected selection into teaching and the quality of stock of teachers. In Poland since 2000, the government adopted a program of teacher wage increases and the average teacher wage in Poland was increasing gradually during the subsequent years (*Figure 22*).

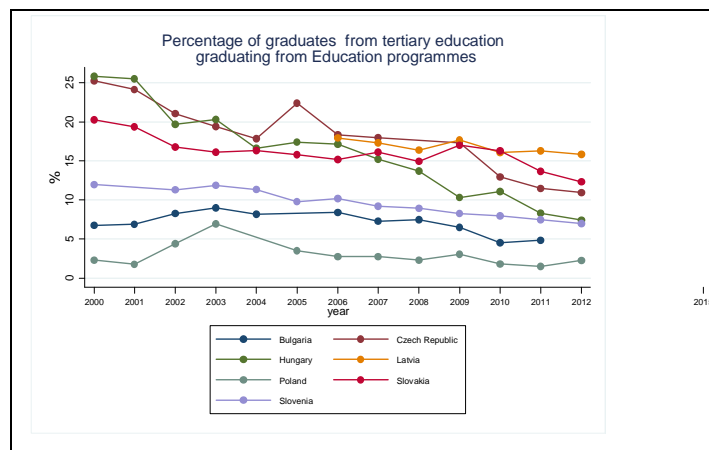
Figure 22 Ratio of teacher salaries to per capita GDP – lower secondary education



Source: Varga, 2014. Based on OECD data

Expansion of higher education also weakened the attractiveness of teaching in CEE countries. Before the transition, the number of students admitted to higher education was very limited, but after the transition the number of admitted students to higher education has increased steadily. As a consequence for prospective students, the alternative possibilities of higher education courses to teacher training have increased (Figure 23). This might also lead to declining quality of teachers in some CEE countries.

Figure 23 Percentage of graduates from tertiary education graduating from Education programs



Source: Varga, 2014. Based on UNESCO data

A common proposal for improving teacher quality is to increase teachers' salaries. Nevertheless teachers' salaries are the largest cost in school education. Compensation is, therefore, a critical consideration for policy makers seeking to maintain both the quality of teaching and a balanced education budget. The size of education budgets naturally reflects trade-offs among many related

factors: teachers' salaries, ratio of students to teaching staff, instruction time planned for students and number of teaching hours.

Using Hungary's case as a natural experiment the question how overall wage increases could affect teacher turnover was investigated. In Hungary, there was a 50 percent wage increase for public servants, including teachers in 2002, but in the subsequent years teachers' relative salaries have declined again. Based on data of a large merged administrative dataset collecting information from the Hungarian Pension Directorate, the Health Insurance Fund, the Treasury and the Public Employment Service the role of earnings and earnings in alternative occupations in decisions of teachers to leave the profession was analysed. A special focus of the analysis was how the public sector wage increase in 2002 had altered teachers' decisions to leave the profession. Duration models were estimated: binary choice Cox proportional hazard models (leaving the teaching profession or not), then competing risk models that distinguish exits to another occupation and exits to no-working state (detailed specifications and estimation results see in *Varga, 2014*).

Results show that earnings matter. Higher wages reduce the probability of exiting teacher profession, to go to another occupation or to non-employment. The public sector wage increase has decreased the probability of leaving the teacher profession for inexperienced teachers but only temporarily: after one or two years as relative wages began to worsen again the effect disappeared. For experienced teachers, the wage increase found to reduce attrition permanently.

The different effects of the wage increase for the different groups of teacher's highlights that an overall shift up of wages of all teachers cannot improve the quality of teaching immediately. The stock of low-quality teachers can be changed only gradually even if the quality of new recruits to the profession improves. In the case of an overall wage increase the existing teachers would have an incentive to stay with no responsibility to become better teachers.

Effect of workplace-based vocational training on school to work transition. All CEE countries provide a mix of tracks in their secondary schooling: general secondary schools, a higher level of vocational secondary schools (technical schools or vocational secondary schools) and a lower level of vocational schools including apprenticeship programs. General secondary schools and higher level vocational schools give students the right to follow their studies in any higher education. The vocational path used to dominate over general secondary education at the beginning of the 1990s in all CEE countries with the exception of Estonia and Lithuania. Although enrolment in the lower level of vocational education decreased substantially in the subsequent decade in all countries, 15-20 per cent of an age cohort is still enrolled in the lower level of vocational education. The lower level

vocational tracks without any follow-up courses normally give students access solely to the labour market, so the effectiveness of training is of considerable interest.

Training in vocational tracks is delivered either in the form of apprenticeship or in school. Workplace-based training has long been praised for its effectiveness in preparing non-college bound youth for the labour market. The effects of firm-based schooling as opposed to the effects of in-school training was tested using a unique panel dataset (Horn, 2013).

While apprenticeship training is usually associated with the dual-education systems, most of the CEE countries have also had experiences with workplace-based vocational training (Table 8).

Poland is the only country with a sizeable and distinct apprenticeship sector. Smaller apprenticeship arrangements are present in Latvia, Slovenia and Croatia, organized through craft chambers, and half of the relatively low number Hungarian basic vocational school students have individual contracts with employers for their work experience. A number of countries (Estonia, Lithuania, and Romania) have recently introduced regulations to recognize apprenticeship as an educational form, but take-up so far seems very limited. (West, 2013)

Table 8 The predominant form of organization of VET

	School-based	Dual system
Bulgaria	X	
Czech Republic		X
Estonia	X	
Hungary		X
Latvia	X	
Lithuania	X	
Poland	X	x
Romania		X
Slovakia	X	x
Slovenia	x	X

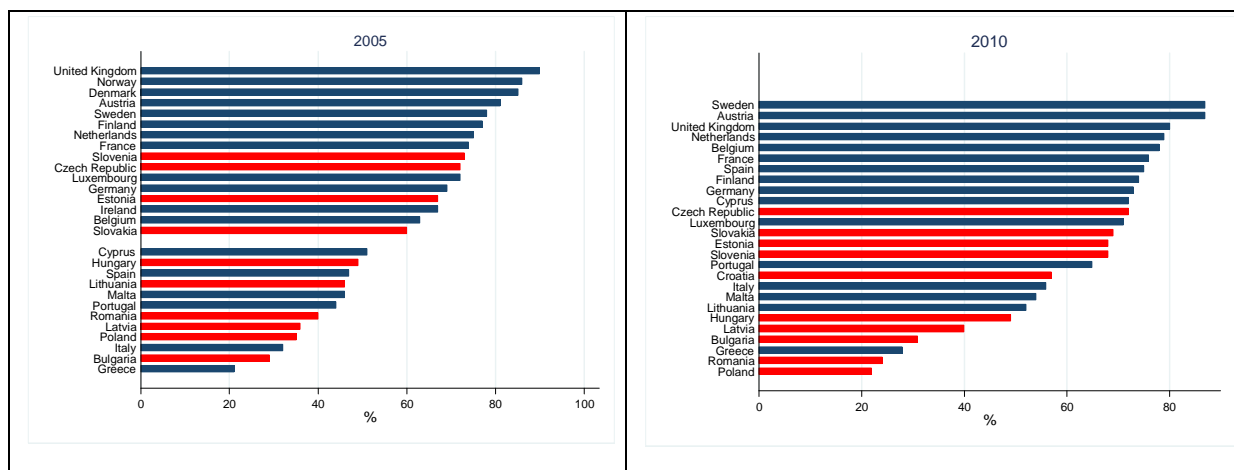
Source: Horn, 2013. Definitions according to??

In the dual systems – such as Germany, Austria, Switzerland or Denmark – the industry/business and the education sectors cooperate closely in the coordination of the vocational segment of education, in non-dual systems this cooperation is less developed. In many CEE countries, apprentice training that was established during the pre-war period had continued during the socialist era as well, but its essence has changed dramatically and had much less resemblance today to the traditional dual systems. The nature of apprenticeship training in socialist countries was changed mainly due to the huge national enterprises, as compared to the pre-war network of smaller independent firms and businesses, where apprenticeship training had originated. The provision as well as the content of training changed markedly. Also since the competitive market was demolished, and people were essentially guaranteed a job, having an early work-experience mattered much less both for the individual and the firm, which decreased the motivational aspects for both parties. Under the socialist era the students spent most their practical training time in large enterprises, rather than being in contract with several smaller factories, but at the same time not being jointly educated in shared off-the-job facilities, as in the dual apprentice training systems (*Horn, 2013*).

During the transition period in CEE countries, employers withdrew from the provision of training opportunities. The loss of the links between employers and the training system has led to the alteration of the basic curricula, the divergence of the taught material and the up-to-date requirements of the workplace, and meant that obtaining workplace-based practical training for students has become a challenge.

Figure 24 shows the training enterprises as a percentage of all enterprises. Apparently the typical dual education systems of Austria, Denmark or Germany are all above the EU mean. However, the conclusion from this table is less straightforward. Firstly, this statistic is also high in non-dual Western countries (as the UK or Sweden and Finland), and secondly, countries from Central and Eastern Europe are scattered along the distribution (although on average below the EU mean). Note, however, that – with the exception of Estonia – all ex-Austro-Hungarian empire members have higher percentages of training firms than the other CEE countries. This fact also points toward the fact that workplace-based training can be important in the CEE countries, and especially in those, where dual-training have a tradition. However, whether apprentice training is just as effective in this region as it is in the Western dual economies is yet unclear.

Figure 24 Training enterprises as a % of all enterprises



Source: Based on *Horn, 2013*.

The causal effects of apprenticeship training on individual level labour market outcomes were examined with the help of data of the Hungarian Life Course Survey (HLCS). HLCS is an individual panel survey conducted annually and which contains detailed information school track, the apprenticeship status, labour market outcome, data on achievement, ethnicity, family background – including parental education and employment –, and many other dimensions. In Hungary every student in the lower level vocational training track had to do at least two years of practical training, which could either be done in the school or at the firm. Early labour market success of these two groups of students was compared with the help of econometric analysis (multinomial logit estimates). Selection into apprenticeship was also analysed, and robustness checks were taken to determine that the results were not driven by the model specification, by omitted variables or by the time of the measured outcome (detailed model specification and estimation results see in *Horn, 2013*).

The results underline that workplace-based training improves initial employment chances of apprentices in a Central Eastern European setting of Hungary. The results show that vocational training graduates, who have done their practical training at private firms, are around 10-15% more likely to be employed after they finish education, than those who had their practical training in schools and are otherwise similar to the workplace-based group. The effect is net of individual skills, school attainment, parental background, motivation, gender and ethnicity, and robust to the inclusion of industry fixed effects, and for school fixed effects, but only for students trained in mid-sized firms. Also results show that the significant marginal effect of apprenticeship training declines rapidly for students trained at large firms while this decline is less marked in medium or small firm trained apprentices, suggesting that large turnover could eliminate the positive effects of apprenticeship training more quickly.

As a non-dual system, this country study should especially be important for countries with less experience in apprentice training. Findings from a non-dual system, where the workplace-based training is still widely utilized, could be informative for those countries where apprenticeship training is less widely spread, but its development is considered.

Causes of Roma/non-Roma school achievement gap. Large ethnic disparities are among the most severe impediments to social cohesion. In Central and Eastern Europe, the most disadvantaged ethnic minority is the Roma minority. The Roma constitute one of the largest and poorest ethnic minorities in Europe. The size of the Roma population is notoriously hard to assess because ethnic data collection is problematic. Official census data differ markedly from unofficial estimates for countries with large Roma populations. One of the more reliable estimates of the size of the Roma population in East Central Europe put it slightly over 4 million in the early 1990s (Barany, 2002). According to these figures, the percentage of Roma in the total population was close to 10 percent in Bulgaria and Slovakia, between 4 and 7 percent in Hungary, Macedonia, Romania and Serbia, and around 2 percent in Albania and the Czech Republic. According to data of the UNDP survey of 2011, the employment rate among the Roma aged 20 to 64 was between 20 and 30 per cent in most East Central European countries. While labour market discrimination is likely to play a role it is unlikely to explain such low levels (Kertesi-Kézdi, 2014). The role of skills in the ethnic employment gap, it is likely to be significant in East Central Europe. Understanding the extent and the origins of the gap in skills is therefore a very important step towards understanding the origins of the gap between the Roma minority and the non-Roma majority in many areas of life.

The gap between Roma and non-Roma in the chances to get secondary education is substantial in all countries (Table 9). The unweighted average gap in the 12 countries combined is over 50 per cent. Comparing the Roma figures to national averages they show smaller but still substantial gaps.

Table 9 The percentage of 20 to 24 years old with upper secondary education. Roma and non-Roma respondents in the UNDP 2011 survey and population figures

Country	Percentage of 20 to 24 years old with secondary education ^a		National average	The ethnic gap	
	Roma (1)	Non-Roma (2)		Non-Roma vs. Roma (2) – (1)	National avg. vs. Roma (3) – (1)
Albania	3.1	43.5	22.6	40.4	19.5
Bosnia and	15.8	86.2	n.a.	70.4	n.a.

Herzegovina					
Bulgaria	20.7	65.2	42.3	44.5	21.6
Czech Republic	30.1	76.1	79.0	46.0	49.0
Slovakia	18.1	48.0	42.5	30.0	24.4
Montenegro	7.0	79.3	n.a.	72.3	n.a.
Croatia	19.7	72.8	42.0	53.1	22.4
Hungary	21.3	62.0	70.4	40.7	49.2
Macedonia	19.1	82.5	n.a.	63.4	n.a.
Moldova	7.5	56.9	n.a.	49.4	n.a.
Romania	11.5	67.1	42.2	55.7	30.7
Serbia	12.9	82.8	41.2	69.9	28.3

^a Upper secondary education (ISCED level 2) or vocational education .

Source: Kertesi-Kézdi, 2014

To decompose the achievement gaps to social background and ethnic components regressions were estimated for each country separately with secondary education on the left-hand-side and the Roma dummy variable on the right-hand-side together with a measure of income and parental education. These were linear probability models: the left-hand-side variable is whether the 20 to 24 years old respondent has an upper secondary or vocational degree (*detailed results see in Kertesi-Kézdi, 2014*)

According to the results, 15 to 85 per cent of the achievement gap is explained by lower incomes among the Roma, and 35 per cent to 100 per cent is explained by lower incomes and lower parental education. 50 per cent of more of the achievement gap is explained by the income measure in Bulgaria, the Czech Republic, Slovakia and Hungary, around 40 per cent is explained in Bosnia, Croatia and Serbia, and at most 30 per cent is explained in Albania, Montenegro, Macedonia, Moldova and Romania. When comparing people with the same parental education as well as the same income, the

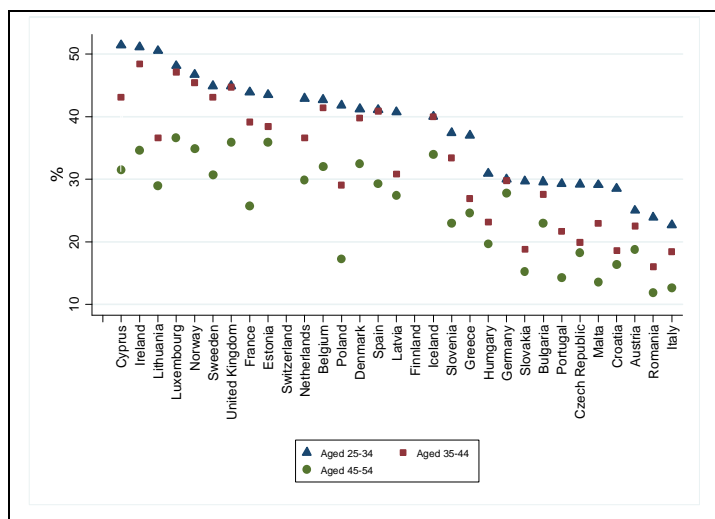
achievement gap between Roma and non-Roma 20 to 24 year old respondents is less than 10 percentage points and statistically insignificant in Bulgaria and Slovakia, and it is between 10 and 20 percentage points but also statistically insignificant in the Czech Republic, Croatia and Hungary. These results suggest that the larger part, and perhaps all, of the gap between young Roma and non-Roma in terms of their secondary school completion rates can be explained by non-ethnic family background variables, and family income status plays a major role.

At the same time, the analysis cannot answer the question about the mechanisms that make children in poor families achieve lower levels of education. The income measure used in the analysis is also imperfect in the sense that it corresponds to family incomes when the children were in their twenties, whereas the appropriate question would involve income status during childhood. Moreover, the analysis was carried out for a subpopulation of those still living with their parents. Fortunately, unique data from Hungary made it possible to do a more thorough analysis of the achievement gap between Roma and non-Roma students.

Results show that it is comparable to the size of the Black-White test score gap in the U.S.A. in the 1980's; however, that gap has since narrowed significantly. To a large extent, these deficits explain Roma students' later lack of success on the labour market and the intergenerational transmission of Roma minority disadvantage. The results show that social differences (in income, education and place of residence) account for a large part of the gap. Disadvantages in the home environment that play a key role in the school performance gap are largely explained by social differences. Ethnicity plays no additional role in the significant cognitive disadvantages associated with the parenting of Roma families; these disadvantages are fully or almost fully explained by the parents' lack of education, poverty, and residential disadvantages. Another key factor in the test score gap between Roma and non-Roma students, in addition to the disadvantages of the home environment, is Roma students' lack of access to good schools. This lack of access is due to residential disadvantages and the school system's selection mechanisms. Students of low social status have a significantly greater chance of ending up in a class segregated by ability, independently of ethnicity. However, Roma students also suffer the effects of ethnic segregation.

Reform of higher educational systems in CEECs and the effectiveness of its link with R&D policy. A specific feature of the transition in CEE countries' education systems was the dynamic increase of demand for university education. Population that has attained tertiary education has increased considerably in the young age cohorts although there were some differences between particular countries. Among the CEEs, higher educational attainment has increased the most in Poland and the Baltic states while, in Romania, the Czech Republic, Slovakia and Hungary the increase was moderate and in the latter group the share of higher educated is still below the EU average. (*Figure 25*).

Figure 25 Population that has attained tertiary education, percentage by age group (2011)

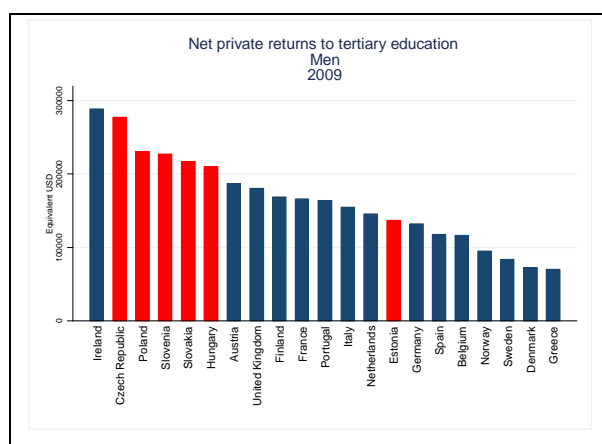


Source: Based on OECD data (EAG, 2013)

Growing demand for higher education was a consequence of increasing returns both in terms of wages (and terms of relative employment probabilities). Net private returns to tertiary education in all CEE countries, but Estonia is above the EU average (Figure 26).

Figure 26

Net private returns to tertiary education

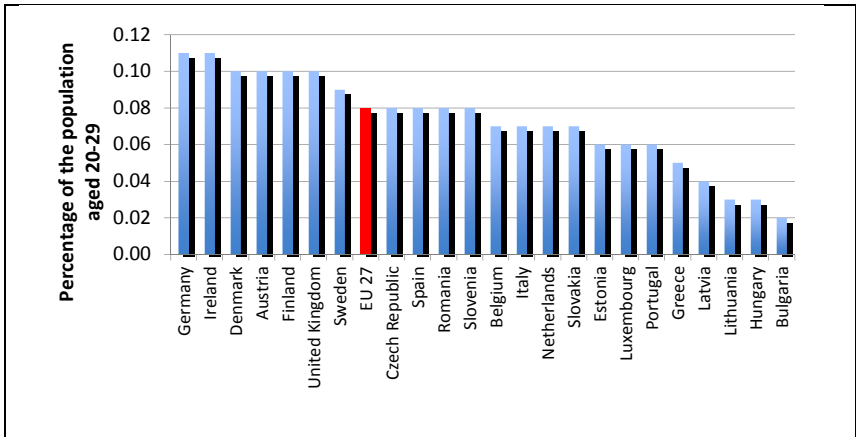


Source: Based on OECD data (EAG, 2013)

Different member states, and regions in the European Union are different as far as the role of knowledge, technology, innovation and related specialisation are concerned. Thus, the context for introducing or encouraging further knowledge-based economic specialisation can be profoundly different. The competitiveness challenge to the regions and countries, which so far have only limited industrial R&D activities, is, thereby, not to increase R&D expenditure itself. The real challenge is to establish strong new medium-high and high-tech industries and to create a substantial number of technology-relevant jobs. While doing so, a sufficient supply of a qualified workforce, i.e., well-functioning higher education system, is obviously crucial.

Not only the industrial R&D investments, but more importantly industrial R&D jobs and researchers' training, where European cohesion countries tend to fall behind in comparison to the more advanced countries. Many European cohesion countries award significantly less PhD degrees in STEM disciplines as the share of the population aged 25-34 than more advanced EU member states, while Germany, the United Kingdom, and the Nordic countries also perform very well in this area (Figure 27).

Figure 27 PhD graduates in science, math and computing, engineering, manufacturing and construction



Source: Tiits-Kalvet- Mürk, 2014.

The higher education and R&D systems of the two European best performing economies (Finland & Sweden) were compared with those of the two neighbouring cohesion economies (Estonia & Lithuania) (Tiits-Kalvet- Mürk, 2014). The case study aimed to assess how higher education and R&D policies in the latter countries are contributing to economic development and cohesion, especially in terms of specialisation to CEEs. Results of the analysis show, that the achievement of the 3% research intensity target established in the European Unions' Lisbon and EU 2020 strategies presupposes a substantial structural change toward a more science-intensive industry in the European cohesion regions. Contrastingly, these economies have demonstrated so far a relatively slow build-up of the science-intensive industry. The economic growth observed in these economies has to date relied on a number of other factors, such as learning by doing and adoption of the foreign-made technology, and in 2000s, the finance, consumption and real estate boom; rather than domestic, industrial R&D and science-based innovation.

The number of researchers employed by industry needs to increase significantly in cohesion economies to allow them to catch up with more science-intensive economies in Europe, e.g., Finland and Sweden. However, higher education and public R&D systems of cohesion economies such as Estonia and Lithuania have suffered for an extended period from underinvestment and unnecessary

institutional fragmentation. Consequently, the quality of higher education, especially at the level of graduate studies, is weaker than the European top universities. The number of Ph.D. graduates in STEM disciplines remains also insufficient for building up modern science-intensive industry in cohesion economies (See Figure 27).

The shortage in the supply of future research personnel is reinforced further by demographic challenges as the number of potential new students has declined or will decline in the coming years significantly in the European cohesion economies. Theoretically, cohesion regions could attempt to compensate for the decline in new higher education enrolments by taking advantage of rapidly increasing international student mobility. It appears, however, from the example of Estonia and Lithuania that they are late in responding to the demographic challenges, and their higher education systems are not as attractive for foreign students as those of the UK or Germany for example. In sum, there has been, despite Barcelona Process and numerous institutional changes little meaningful reforms to increase substantially competitiveness of the higher education systems in the European cohesion economies.

One should consider, when applying the RIS3 concept (what emphasizes the role of knowledge, technology and innovation in economic development and social well-being) that education policy, capability building, acquisition and mastering of foreign-made technology are in the immediate term often more important for economic development in cohesion countries, than the R&D based innovation processes that RIS3 Guide primarily focuses upon. Furthermore, RIS3 seems also to overlook the fact that the various European economies are increasingly integrated with terms of innovation, production and trade. Accordingly, imported technology, flows of foreign direct investments and relocation of economic activities influence the structure of industry and trade of the European economies more strongly than indigenous R&D efforts.

European small economies, such as those in the Baltic Sea Region, need clear macro-regional division of labour in higher education and public R&D that would allow different universities and public research institutes to collectively cover cutting edge science and technology. This will allow them to attract across the world the very best mobile talents and to benefit from them. There might also be a need for joint venture capital facilities, or similar mechanisms, that allow for greater risk sharing in nurturing future emerging industries. Finally, the possibilities of FDI-led economic development – in supporting both the upgrading of existing as well the future emerging industries – should not be underestimated.

Participation in adult education. Training participation in CEE countries lags behind that in Western and Northern countries with a few exceptions. The east-west differences are present both for the

employed, the unemployed and the inactive population (*Table 10*). The most notable differences in training participation are related to educational attainment. More education goes together with more training. This is in line with standard human capital theory: more able people invest more in education, and they are expected to do so beyond the age of schooling, as well. However, the relative differences are strikingly high in the CEE group. In this group training participation of those with a higher education degree is on average ten times of that of the low skilled, and three times higher compared to those with a middle level education.

However, there is substantial variation within the CEE group. In the Czech Republic, Estonia and especially Slovenia training is at the Western European level. At the other extreme, it is almost negligible in Romania and Bulgaria. The mean in the east and south group is below the half of that in the west (*Figure 28*).

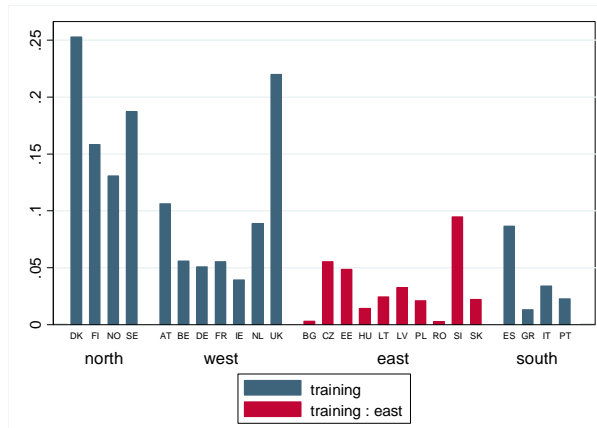
Table 10 Mean training participation rates overall and by population subgroups in country groups

	North*	West	East	South
overall	0.182	0.088	0.032	0.039
by labour market status				
employed	0.202	0.099	0.039	0.042
unemployed	0.161	0.086	0.025	0.049
inactive	0.103	0.054	0.014	0.029
by gender				
female	0.211	0.096	0.037	0.043
male	0.154	0.080	0.027	0.035
by education				
low (isced 0,1,2)	0.104	0.038	0.007	0.017
middle (isced 3,4)	0.162	0.080	0.024	0.044
high (isced 5,6)	0.261	0.142	0.075	0.087

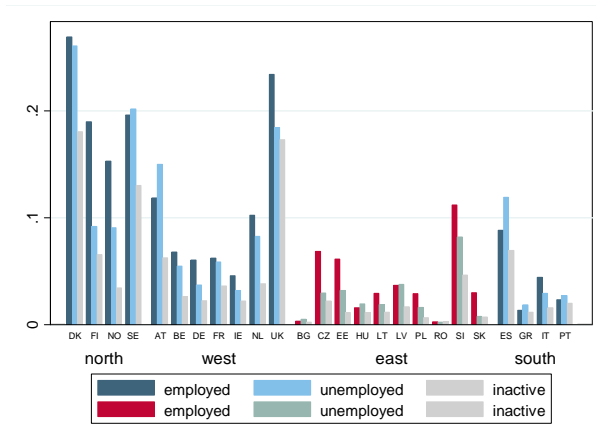
*The North group covers Scandinavian countries, including Norway, the South the Mediterranean countries, East the new EU member CEE and Baltic countries ; West the old EU continental countries together with the UK and Ireland.

Source: Hermann, 2014. Based on EU-LFS, 2004-2011 data

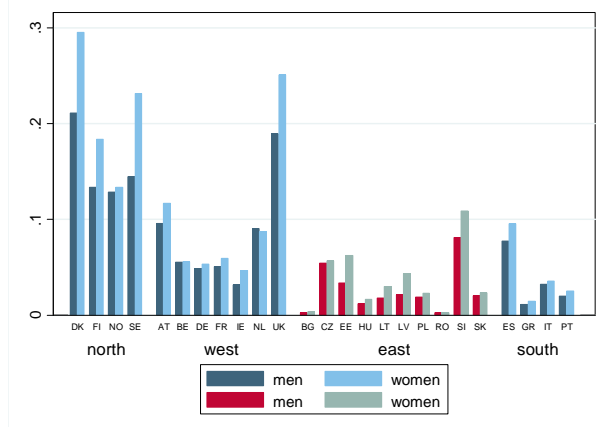
Figure 28 Training participation rates overall and by population subgroups over countries



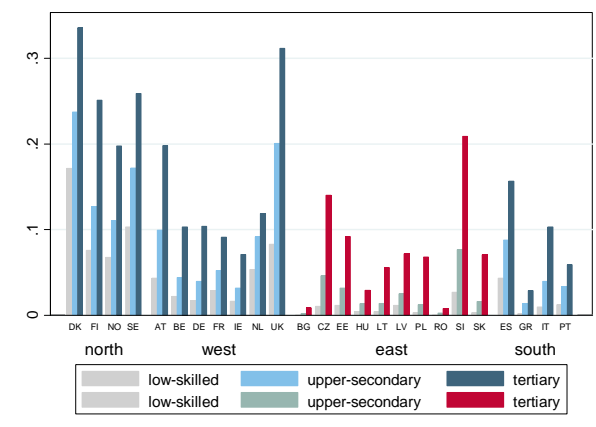
a. overall



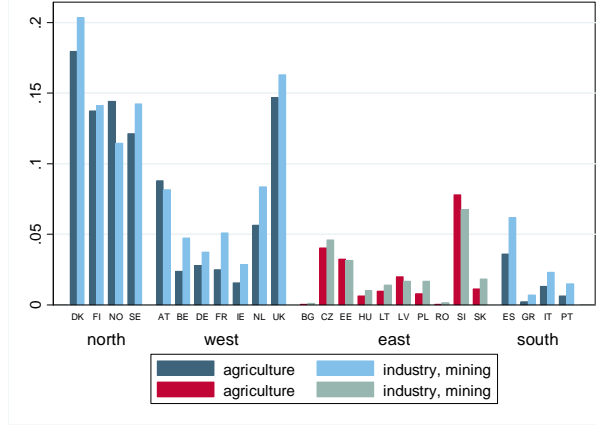
b. by labour market status



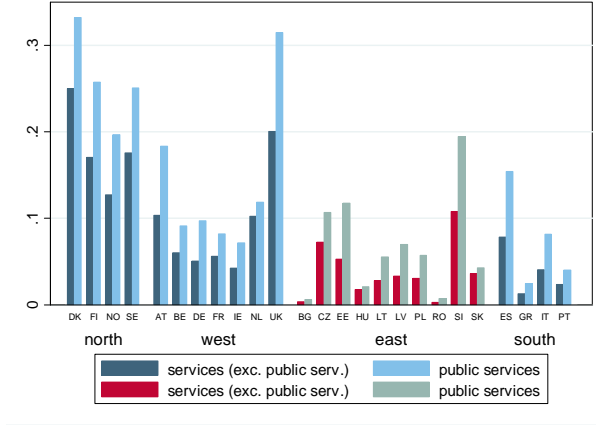
c. by gender



d. by education



e. by economic sector
 industry: manufacturing, construction, utilities



f. by economic sector
 public services: public administration, education, health and social services, other community services

Source: Hermann, 2014. Based on EU-LFS, 2004-2011 data

Assuming that the association between individual characteristics and training participation is similar in the four country groups analysis found that the training gap cannot be explained by composition in terms of simple individual and firm characteristics (education, age, gender, family structure, immigrant status and settlement size, economic sector, occupation type firm size, tenure at firm, and some other characteristics of the job (detailed regression results see in *Hermann, 2013*)

The results of estimates aiming to explore if the effects of individual characteristics on training different in CEE countries show that the most prominent difference is in the effect of educational attainment. Training participation is generally increasing with education, but in the CEEs (east country group) education matters more, especially for the employed. In the east the odds of training for employees with a tertiary degree is about two times / almost five times higher compared to workers with an upper secondary degree in white collar / blue collar jobs, and seven times higher than for the low skilled. In comparison in the west the odds for the graduate employees are only one and a half, two and a half and three times higher than those with lower level degrees. But this is not only about the graduate-non-graduate difference. In the east the low-skilled are also trained less often compared to those with a medium level of attainment (detailed regression results see in *Hermann, 2013*).

Using the OECD Programme for the International Assessment of Adult Competencies (PIAAC) data and LFS data the potential reasons behind low participation rates in training in CEE countries were analysed (*Hermann, 2014*).

The first possible reason for the gap in participation rates between the CEEs and Western and Northern countries is the more frequent usage of general skills at work in the latter groups. More tasks related to reading, writing, planning and solving simple problems goes together with a higher probability of training. Skill requirements due to different technologies may result in different demand for skills in general and training in particular. This hypothesis was tested by estimating probability of training participation when indicators of skill requirements of the jobs were controlled for. The results appear to be consistent with the hypothesis that the lag of most CEE countries in training is in part due to a lower demand for skills and training in current jobs (*Hermann, 2014*). Regarding the differences across

CEE countries training participation in the Czech Republic and Estonia does not significantly differ from that in Western Europe; as these countries (and Slovenia) have training levels exceptionally high within the CEE group.

Education quality and institutions may also affect training in several ways. Education and training are usually regarded as complements, as better general skills acquired in education make training more profitable. The positive correlation between educational attainment and training participation can be interpreted as empirical evidence for this complementarity. However, if this mechanism is at work, the quality of education may also affect training. Weaker general skills may also explain differences in training participation. In the majority of CEE countries, the period of comprehensive education is relatively short and vocational or pre-vocational tracks in upper-secondary education provide extensive vocational training. This initial vocational training might substitute for on the job training at

firms compared to education system with shorter initial vocational training. Estimation results are consistent with the vocational track – on the job training substitution hypothesis, though the difference between the odds ratios across the educational attainment groups is relatively small, suggesting that it is not a crucial factor in the east-west difference (Hermann, 2014).

1.2. Policy implications and recommendations

Suggestion for structure to make recommendations more visible

- **Improving employment prospects for the low educated.**
 - Policy should be targeted at the points where the region's countries jointly fail. The problem of massive unskilled unemployment, a common and distinctive feature of CEE labour markets needs to be addressed.
 - Better schools, more adult training, deepening civil integration and efforts to create a feedback from work to skills by bringing the unskilled 'in from the cold' with the help of targeted programs and subsidies may help to ease unskilled unemployment.
 - In the lack of mechanisms providing the low educated with a 'second chance,' the quality of education bears special importance. Primary and vocational schools should equip the students with basic competencies that enable them to participate in formal adult training and learn informally after leaving the school system.
 - The regulation of employer-provided training is worth to be reconsidered in order to alleviate possible market failures and to induce firms to increase long-term investment in the human capital of their employees. The employer-employee contracts seem to be of particular importance.
 - Carefully designed and implemented training programs for the unemployed can have positive effects both on employment prospects and social inclusion of the low skilled. However, as positive employment effects cannot take for granted, thorough economic evaluation studies of these, both ex-ante and ex-post, are indispensable.
 - As far as the training gap is related to the lack of basic skills, this provides another argument for policies aimed at increasing the quality of public education. If basic skills are important for adult training, vocational training tracks, providing specific skills at the expense of general skills, may be beneficial for the employment of the youth, but prove to be a disadvantage later in the life-cycle of workers.

- **Improving the educational system.**

- The transition countries as a group need to invest more in the quality of primary and secondary education, which in turn implies that they must also invest more in tertiary, especially undergraduate, education so as to improve teacher quality and the evaluation and monitoring of the overall education system.
- Comprehensive reforms of the educational system and avoiding early student selection may have a positive impact on students' performance. It is worth reconsidering to defer early student selection to upper secondary education while reinforcing comprehensive schooling in countries where early tracking regime is applied, Bulgaria, the Czech Republic, Hungary, and the Slovak Republic and Slovenia. These countries could decrease inequality by rising the tracking age.
- In addition, it is important to balance decentralisation/local autonomy with resource accountability to ensure support to schools. School autonomy needs a well-functioning environment to unfold positive effects, and can even be harmful in a dysfunctional setting.
- Increasing teacher quality is crucial for improving students' performance. Higher wages attract better quality teachers to the profession. Increasing teachers' salaries will help to attract better quality teachers. Nevertheless teacher quality can be raised only gradually. Overall salary increases have adverse effects they give an incentive to low quality teachers to remain in the profession and put a financial burden on school systems. Improving the salary advancement, in-service training to improve the stock of existing teachers and improving incentive mechanism would have an impact on teacher quality and students' performance.
- Research findings suggest that there are advantages to targeted vocational training programmes that are not school-based. Workplace-based training seems to enhance early labour market employment of the non-college bound youth. Hence, the support of workplace-based training during compulsory vocational education may have a positive effect, unless the acquiring of basic skills is hindered.

- **Reducing Roma/non-Roma school achievement gap.**

- The Roma/non-Roma school achievement gap is primarily due to poverty and associated disadvantages at home and school. Aside from the phenomenon of school segregation, none of the causes of the achievement gap requires a social policy intervention directed at the Roma minority in particular. The academic deficits and social exclusion of disadvantaged children, both Roma and non-Roma, should be remedied by universal and color-blind policies. Interventions should clearly aim to prevent extreme poverty in families with children; income and family support policies should pay particular attention to struggling social groups. Societies cannot always rise to the challenge of significantly alleviating poverty or preventing the emergence of mass poverty among families with children. However, targeted policy interventions can successfully reduce the skills gap of children who grow up in poverty and marginalized social groups. The perhaps most promising method of preventing failures at school is to provide children with an environment (objects, tools, activities, services) that facilitates their cognitive and linguistic development, and to promote complementary parenting methods.

- **Improving labour market and activation policies.**

- A higher capacity, better selected, better trained, better-motivated civil service can be expected to contribute to improving policy making quality in a field that is by its nature highly dependent on those qualities for the success of its measures

- There is considerable room for improvement in the policies of most NMS. In countries that opted for no/or lenient activation (Bulgaria, Czech Republic, Hungary, Poland), the first step towards activation should be an increase in the coverage of registration, rather than a tightening of job search monitoring or increased spending on Public Employment Services (PES). For those countries that combine low spending on PES with limited registration coverage and strict monitoring, an increase in PES spending may be effective, especially if they can prevent outflows into other welfare benefits. Expanding the coverage of registration without increasing PES spending would take them to the Slovak and Slovene strategy, which we found to yield mixed results. For Slovenia and Slovakia, the obvious choice is to increase PES spending, but it would take further research to evaluate the cost effectiveness of this choice.

- **Regional mobility.**

- Activating *and* keeping young people in shrinking regions cannot be achieved when regions become isolated or when local ties are cut. Regional development is dependent on the

vitality networks and/or communities. Existing community structures should be reinforced directed into the direction of openness or towards local ties.

- **Higher education.**

- The number of researchers employed by industry needs to increase significantly in cohesion economies to allow them to catch up with more science-intensive economies in Europe.
- European small economies need clear macro-regional division of labour in higher education and public R&D that would allow different universities and public research institutes to collectively cover cutting edge science and technology. This will allow them to attract across the world the very best mobile talents and to benefit from them. There might also be a need for joint venture capital facilities, or similar mechanisms, that allow for greater risk sharing in nurturing future emerging industries.
- In setting a future policy agenda, we see benefits from the smart specialisation concept as it emphasizes, similarly to the innovation literature, the role of knowledge, technology and innovation in economic development and encourages careful priority setting. The key to success is to ensure that various policy makers and stakeholders are involved in the process and will have a good command of the latest developments in key emerging technologies and relevant industrial and market dynamics.

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