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Preface

The primary goal of the ILO is to work with member States towards achieving full and productive employment and decent work for all. This goal is elaborated in the ILO Declaration 2008 on Social Justice for a Fair Globalization which has been widely adopted by the international community. Comprehensive and integrated perspectives to achieve this goal are embedded in the Employment Policy Convention of 1964 (No. 122), the Global Employment Agenda (2003) and – in response to the 2008 global economic crisis – the Global Jobs Pact (2009) and the conclusions of the Recurrent Discussion Reports on Employment (2010 and 2014).

The Employment Policy Department (EMPLOYMENT) is engaged in global advocacy and in supporting member States in placing more and better jobs at the centre of economic and social policies and growth and development strategies. Policy research and knowledge generation and dissemination are essential components of the Employment Policy Department's activities. The resulting publications include books, country policy reviews, policy and research briefs, and working papers.

The Employment Policy Working Paper series is designed to disseminate the main findings of research on a broad range of topics undertaken by the branches of the Department. The working papers are intended to encourage the exchange of ideas and to stimulate debate. The views expressed within them are the responsibility of the authors and do not necessarily represent those of the ILO.

Azita Berar Awad
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1. Introduction

The 2000s and in particular the period 2005-2008 led to optimistic assessments of labour market trends in upper-middle- and high-income countries as the national employment rates were steadily growing and the unemployment rates, including the long-term ones, were declining in most of these countries. The financial and economic crisis put an end to these optimistic expectations as unemployment recorded a sharp increase in 2009 and kept rising even when countries returned to previous levels of economic growth. Moreover, with a short time lag, long-term unemployment also started not only moving up in relation to the overall labour force but also raising its share in total unemployment. And compared with previous recessions, the steep and prolonged increase in total and long-term unemployment occurred also in countries traditionally experiencing relatively low unemployment, in particular the long-term unemployment, such as the United States, United Kingdom, Australia and Canada. However, some upper-middle- and high-income countries have managed to go through the economic crisis without any or with only a small increase in total and long-term unemployment, and in the latter case, to have reduced it in a subsequent period. This development and the remarkable diversity in labour market responses across countries has begged a number of questions concerning the nature of unemployment, such as the extent to which employment trends are connected with economic cycles, structural factors, institutional factors, specific policies, etc. A key question concerns why some countries with dynamic economic performance are constantly struggling with high aggregate and/or long-term unemployment while some other countries with significantly lower economic growth are able to maintain low total and/or long-term joblessness?

A short overview of recent research on factors behind elevated long-term joblessness in some economically advanced countries, on negative social, economic and political consequences of long-term unemployment and the efficiency of labour market policies in addressing this is provided in Nesporova (2015). This overview, however, reveals the absence of cross-country analyses of differences in the level and trends in total and long-term joblessness and the factors explaining them. Obviously, such a comparative in-depth analysis can be undertaken only on a relatively small sample of countries. In order to narrow the list of factors that may influence the level and changes in joblessness and to better identify causes of diversity in labour market performance, it has been decided to select countries that are similar with regard to their economic structure and industrial traditions, are closely linked through trade and production chains and therefore prone to synchronized economic fluctuations, are also similar culturally, and have compatible databases to allow a more detailed analysis. One such group is the five Central European countries – Germany, Austria, Czech Republic, Poland and Slovakia. The latter four countries are very dependent on Germany – their single most important production and trading partner, whose economic fluctuations are immediately reflected in their own economic performance.[1] All of them are also relying a lot on industry, which contributes from 25 per cent (Austria) to 34 per cent (Czech Republic) to their GDP and in the case of employment this share is similarly high. All of them now belong to the high-income countries category according to the World Bank classification, although Austria and Germany have significantly higher GDP per capita in comparison with the three other countries. Despite all these similarities, they have very different labour market performance, including during and after the recent economic recession. Therefore an analysis of factors contributing to these labour market diversities

[1] According to EUROSTAT, in 2004 exports to Germany contributed 29 per cent to total Austrian exports, 32 per cent to total Czech exports, 26 per cent to total Polish exports and 22 per cent to total Slovak exports. Imports from Germany constituted 41 per cent of all Austrian imports, 27 per cent of total Czech as well as Polish imports and 18 per cent of total Slovak imports.

can reveal both obstacles for jobless persons to (re-)enter the labour market as well as the direction of policies that could help in this respect and, thus, guide policy makers.

The paper is structured as follows. Chapter 2 analyses labour market performance of Austria, Czech Republic, Germany, Poland and Slovakia over the period 2000-2014. It highlights differences in their economic activity as well as in employment, unemployment and long-term unemployment levels and trends for total population and in disaggregate by sex, age, level of education and country of origin, in the case of employment also by working time, status in employment and economic sector. Chapter 3 discusses the disaggregation of total unemployment into cyclical, structural and frictional parts and applies two main approaches for estimating structural unemployment and its relationship to cyclical, frictional and long-term unemployment. Chapter 4 provides a short overview of research on factors determining structural and long-term unemployment. Chapter 5 offers a cross-country comparative analysis of issues driving structural and long-term unemployment in these five countries, such as skills mismatches, labour tax wedge, generosity of income support in unemployment, labour market regulation and incidence of temporary contracts and active labour market policies. Chapter 6 summarizes the main conclusions.

2. Labour market performance

2.1. Economic activity

A cross-country comparison of economic activity (the labour force participation rate) of the population (see Table 1) in the five countries shows that between 2000 and 2014 it increased everywhere but the pace differed a lot – it expanded by four percentage points in Austria and even by almost 8 points in Germany, while the Czech Republic, Poland and Slovakia recorded only small increments, respectively, by 2.3, 1.8 and 0.8 points. While in 2000 the differences in economic activity across the five countries were negligible (with the exception of Poland that already fell behind), the gap between Germany and Austria on the one hand and the three new EU member states significantly widened over this period. When comparing the labour force participation rates of men and women, the above mentioned gap should mainly be attributed to diverging developments of female rates. They were fairly similar in 2000 but thanks to a surge in female participation in Germany and Austria but only limited increases in the other three countries they grew to almost 12 percentage points between the leading country – Germany – and the most lagging country – Poland. With regard to male activity, diversity among the five countries existed already in 2000 and only slightly increased over the 2000-2014 period.

Table 1: Economic activity of population, total and by sex, 2000-2014 (in %)

Indicator	Country	2000	2004	2009	2014
Economic activity – total population	Austria	71.3	69.4	74.3	75.4
	Czech Republic	71.2	69.9	70.1	73.5
	Germany	71.0	72.1	74.3	77.7
	Poland	66.1	63.7	64.7	67.9
	Slovakia	69.5	69.7	68.4	70.3
Economic activity - men	Austria	80.1	76.0	80.0	80.0
	Czech Republic	79.0	77.6	78.5	81.2
	Germany	78.8	79.0	82.2	82.5
	Poland	71.8	69.9	71.8	74.6
	Slovakia	76.8	76.5	76.3	77.6
Economic activity - women	Austria	62.5	62.9	67.7	70.8
	Czech Republic	63.5	62.1	61.5	65.6
	Germany	63.0	65.1	70.4	72.9
	Poland	60.5	57.6	57.8	61.1
	Slovakia	62.8	63.0	60.6	62.9

Source: Eurostar database

A closer look at the labour force participation rates of the three main age groups – youth (aged 15-24), prime-age (25-54) and older population (55-64) reveals that for prime-age persons cross-country differences were small and further diminished over the analysed period. Economic activity of the elderly increased in all the five countries as a consequence of two factors: an increasingly difficult access to early retirement and postponement of the statutory retirement age, which both moved the effective retirement age upwards. However, the speed of this rise differed across the countries, which further widened disparities in the activity rates of the elderly: in 2000 the gap between countries with the highest (Germany)

and the lowest (Slovakia) rates accounted for 18.3 percentage points, in 2014 this difference between Germany and Poland already reached 23.5 points. The fastest growth of labour force participation of the elderly was recorded by Germany (by 26.2 p.p.), followed by Slovakia (by 25.5 p.p.) that more than doubled its rate, while Austria and Poland lagged further behind.

Table 2: Economic activity of population by age group, 2000-2014 (in %)

Indicator	Country	2000	2004	2009	2014
Economic activity of persons aged 15-24	Austria	56.1	55.7	59.5	58.0
	Czech Republic	43.9	34.6	31.8	32.2
	Germany	50.4	47.5	51.8	49.9
	Poland	37.5	35.1	33.8	33.9
	Slovakia	44.8	39.1	31.4	31.0
Economic activity of persons aged 25-54	Austria	85.3	84.5	87.0	88.0
	Czech Republic	88.5	87.8	87.7	88.8
	Germany	85.4	85.9	87.1	87.6
	Poland	82.7	81.8	83.4	85.1
	Slovakia	88.3	89.1	87.2	87.3
Economic activity of persons aged 55-64	Austria	31.4	27.2	40.5	46.9
	Czech Republic	38.1	44.9	49.6	56.8
	Germany	42.9	47.5	61.0	69.1
	Poland	32.1	29.3	34.5	45.6
	Slovakia	24.6	31.1	42.8	50.1

Source: Eurostat database

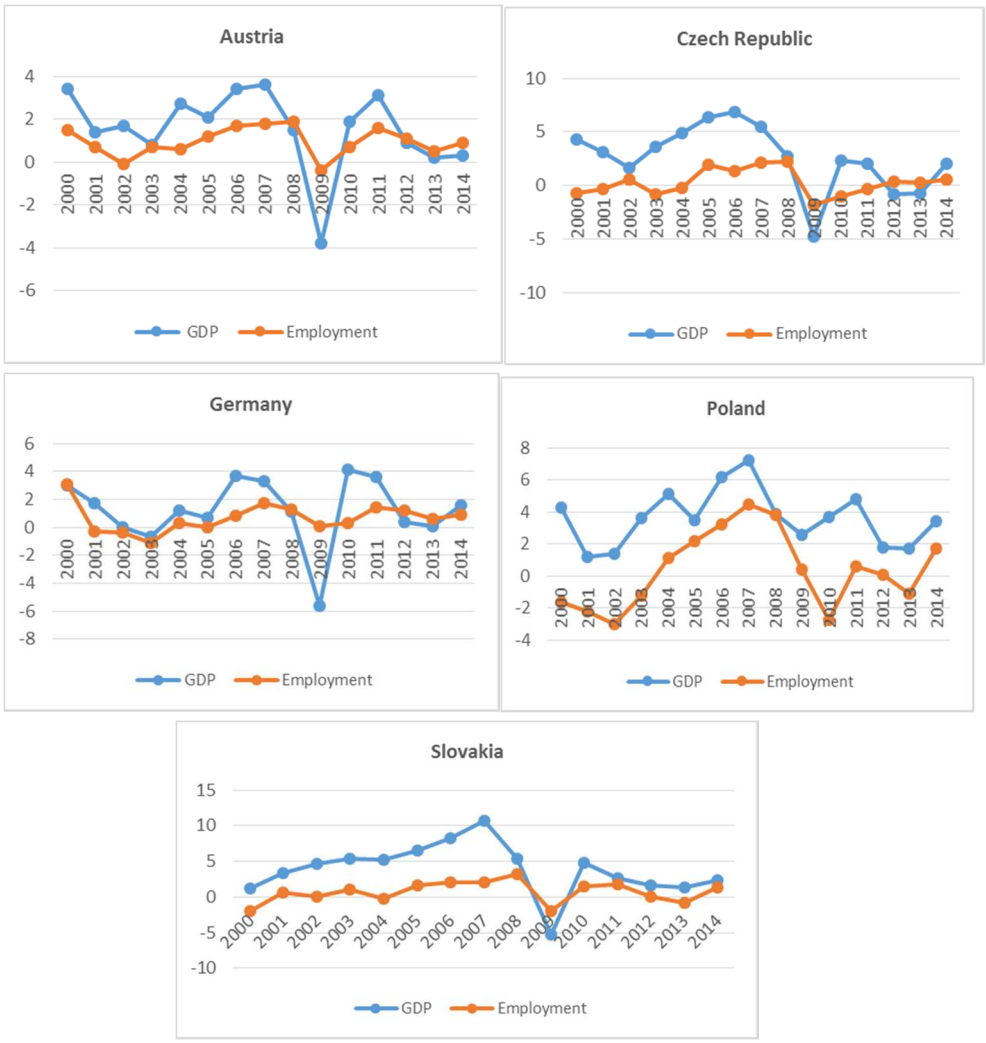
While economic activity of older persons increased everywhere, countries recorded opposite trends with regard to economic activity of youth. Austria and Germany maintained their significantly higher youth participation rates over the whole period (in Austria it further increased), compared with the three other countries where lower youth participation rates recorded in 2000 further substantially declined, in Slovakia even by almost 14 points, till 2014. There are three reasons for this different development in the two country groups: (i) increasing numbers of young people enter tertiary education in the Czech Republic, Poland and Slovakia and opt for longer studies until reaching a master degree (as bachelor degrees do not have high status and are not so much valued in these countries); (ii) many university students in Austria and Germany accept part-time jobs in order to gain practical experience in their profession that will smoothen their school-to-work transition, while this potentially very useful practice is rather rare in the other three countries; and (iii) within the widespread dual vocational education and training in Austria and Germany young people conclude labour contracts with the employers who provide the practical part of training. In contrast, in the Czech Republic, Poland and Slovakia after political changes in 1989 vocational education and training shrank in general and skipped the practical part in enterprises by shifting it to schools and the dual system is only slowly regaining the ground. If in 2000 economic activity of the elderly was significantly lower than that of youth, in 2014 it is the reverse, with the only exception of Austria.

2.2. Employment

Figure 1 proves strong correlation between the GDP and the employment growth rates between 2000 and 2008 with a certain exception of the Czech Republic where this correlation was somewhat weaker. The crisis year of 2009 saw a sharp decline of GDP in Austria, Czech Republic, Germany and Slovakia, while Poland recorded only a slowdown

of its rate. Employment reacted more mildly although its growth rate also slipped to negative figures in Austria, Czech Republic and Slovakia, while still remaining slightly above zero in Germany and Poland. Since 2010 the relationship between both indicators has developed differently across the countries: in Austria and Slovakia the correlation has strengthened again while in the three remaining countries it has significantly weakened. In Poland, despite economic recovery employment even faced a sharp absolute decline, then moved around zero and returned to a more significant rise only in 2014. Similarly in the Czech Republic employment started recovering only in 2014, while stronger employment growth since 2010 was recorded only in Austria and Germany. Between 2000 and 2014 employment rose by 13.6 per cent in Austria, 9.8 per cent in Slovakia, 8.3 per cent in Poland, 7 per cent in Germany and 5.1 per cent in the Czech Republic. When comparing GDP fluctuations across these five countries they show rather strong correlation and prove thus that economic development in Germany determines the development in the other four countries. With regard to employment, such correlation does not seem to exist, which indicates that the economic cycle is only one of several factors influencing the dynamics of employment.

Figure 1: GDP and employment dynamics, 2000-2014



Source: Eurostat database

However, developments in economic activity and employment should be compared with trends in part-time employment presented in Table 3. The table shows that while in 2000 part-time employment was already much more frequent in Austria and Germany in comparison with Poland and even more with the Czech Republic and Slovakia, it further increased considerably in the first two countries but only marginally in the Czech Republic and Slovakia, while it declining in Poland over the analysed period. In 2014 more than one

in four persons in Austria and Germany worked part-time, while only one in twenty in the Czech Republic and Slovakia and one in fourteen in Poland. The faster rise in economic activity in Austria and Germany and of employment in Austria should thus be to a large extent attributed to the growth in part-time employment.

Table 3: Trends in part-time employment, 2000-2014 (% of total employment if not otherwise stated)

	2000			2004			2009			2014		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
All workers												
Austria	16.7	4.0	32.9	19.9	4.6	38.2	23.9	7.5	42.6	26.9	9.6	46.3
Czech Rep	4.8	1.6	8.9	4.4	1.7	7.9	4.8	2.0	8.5	5.5	2.5	9.5
Germany	19.1	4.5	37.7	21.9	5.9	41.3	25.3	8.6	44.9	26.5	9.2	46.3
Poland	9.3	7.0	12.1	9.6	7.1	12.5	7.7	5.0	10.9	7.1	4.4	10.3
Slovakia	1.8	0.9	2.9	2.5	1.3	4.0	3.4	2.6	4.5	5.1	3.7	6.8
Older workers aged 55-64												
Austria	16.6	7.2	37.2	22.8	10.0	47.6	26.4	11.4	49.4	28.2	13.6	48.8
Czech Rep.	12.5	5.4	27.3	9.8	4.8	18.6	8.6	4.4	15.1	8.0	5.3	11.9
Germany	22.7	6.7	48.3	24.6	7.8	49.6	27.6	10.0	50.1	29.9	10.9	51.7
Poland	28.0	22.6	35.9	21.8	14.8	32.7	18.6	11.9	30.3	11.4	7.8	16.5
Slovakia	5.9	n.a.	13.4	7.8	3.7	19.5	6.2	4.1	10.0	6.2	3.8	9.3
Involuntary part-time employment as % of total part-time employment												
Austria	10.8	21.1	9.3	9.2	15.9	8.2	11.1	17.4	9.8	11.5	16.4	10.3
Czech Rep.	9.7	4.9	10.8	14.9	8.0	16.8	14.5	9.5	16.1	21.1	18.5	21.9
Germany	12.8	20.6	11.7	17.8	31.2	15.7	22.1	38.6	18.8	14.5	22.3	12.8
Poland	14.6	14.5	14.8	32.5	33.1	32.1	19.4	19.4	19.4	32.3	31.9	32.5
Slovakia	10.4	n.a.	14.0	10.0	n.a.	8.5	22.3	27.7	18.3	33.4	39.5	29.1

Source: Eurostat database

Table 3 demonstrates that part-time employment is much more widespread among women and older persons in all the five countries. However, the development trends in part-time employment of women and older persons largely vary across the countries. In Austria and Germany part-time employment of women further increased, while its growth was only marginal in the Czech Republic, in Slovakia it doubled but from a very low level and in Poland it even fell. Moreover, while only 10 per cent or less women work part-time in the new EU member countries against 46 per cent in Austria and Germany, almost one-third of women in the former countries do so involuntarily against one-tenth in the two latter countries.[2] There are several reasons for it: long partially paid parental leaves in the Czech Republic and Slovakia until 3 years of age of the child (in Poland such leave exists as well

[2] Some surveys, however, indicate that many German part-time women workers would actually like to work full time but cannot do so due to the lack of childcare facilities and fiscal disincentives (see e.g. Wanger, 2011).

but is unpaid); lack of childcare facilities; low level of wages; unwillingness of employers to arrange part-time jobs; and discrimination against women with small children in general.

In the case of older workers, in 2000 their part-time employment levels in Poland and the Czech Republic were not very different from those in Austria and Germany, only Slovakia had a much lower proportion of the elderly in part-time employment. While the incidence of part-time employment further rose in Austria and Germany so that in 2014 one in two older workers worked part-time, in the Czech Republic, Poland and Slovakia their proportion considerably declined to 16 per cent or less. This significant reduction in part-time employment of older workers can be explained by the rising statutory retirement age in the latter three countries. While in the past many retired persons sought part-time employment to complement their low pensions, now they have to work full-time until retirement in order to gain entitlement to full old-age pension.

Table 4 compares the composition of employment by status in employment and its development for the five countries over the period 2000-2014. It reveals that Germany and Austria have significantly higher shares of employees and much smaller weights of self-employed persons in total employment than the Czech Republic, Poland and Slovakia (in Slovakia with the exception of the early 2000s). Moreover, employers are more represented among self-employed persons in Germany and Austria than in the other three countries, while the latter countries have substantially higher proportions of own-account workers, compared with Austria and Germany. Between 2000 and 2014 the weight of wage employment had an increasing tendency in Austria and Germany but in the Czech Republic and Slovakia its contribution to total employment further decreased, in contrast to that of own account workers. This proved a rather limited job creation potential of the enterprise sector in the latter two countries in the analysed period, despite their considerably lower wage levels in comparison with Austria and Germany, so that people are increasingly pushed to self-employment. Only in Poland wage employment raised its share in total employment at the cost of both own account workers and helping family members; the reason was a shrinking number of small family farms (still widespread in Poland unlike in other Central European countries). Nevertheless, the same conclusion on a limited job creation potential of the enterprise sector is valid for Poland as well, as many subsistence farmers and their family members could not find a job outside agriculture and withdrew from the labour market as proven by the declining economic activity of the population between 2000 and 2009 (see again Table 1).

Table 4: Composition of employment by status in employment, 2000-2014 (in %)

Country	Austria			Czech Republic			Germany			Poland			Slovakia		
Status	2000	2009	2014	2000	2009	2014	2000	2009	2004	2000	2009	2014	2000	2009	2014
Employment of which	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Employees	87.8	87.5	87.8	85.1	83.6	82.4	89.6	89.1	89.9	73.9	77.9	79.2	92.0	84.4	84.7
Employers	4.9	4.6	4.6	4.2	3.7	3.4	4.9	4.6	4.4	3.9	4.1	4.0	2.5	3.4	3.1
Own account workers	5.6	6.5	6.3	10.2	12.2	13.6	4.8	5.8	5.4	17.9	14.2	13.8	5.2	12.1	12.1
Helping family members	2.5	0.9	1.3	0.5	0.5	0.6	0.7	0.5	0.3	4.3	3.8	3.0	0.3	0.1	0.1

Source: Eurostat database

Employment structure by economic sector and its development trends across the five countries are presented in Table 5 and some remarkable differences can be detected. The share of agriculture in total employment declined everywhere and most rapidly in Poland prior to the economic crisis. Nevertheless, Poland has by far the highest employment in agriculture due to a large number of small farmers. Industry, and within industry mainly manufacturing, are strongly represented in total employment in comparison with other European countries. The Czech Republic has the highest proportion of manufacturing workers in employment in the EU, closely followed by Slovakia. The weight of manufacturing was declining over the analysed period. The sharpest fall occurred during the economic recession when in 2009 in comparison to 2007, manufacturing lost 3.3 percentage points of its share in total employment in Austria, 3.2 points in the Czech Republic, 3 points in Slovakia, 1.7 points in Germany and 1.5 points in Poland. While employment in manufacturing recovered in the Czech Republic and to some extent also in Austria after 2010, their weights in employment still remained below the pre-crisis ones. Construction experienced a boom prior to the crisis in particular in the new EU member countries but also in Austria. Interestingly, while similarly hard hit by recession as manufacturing, the outflow of employment from construction was distributed over a longer period.

Table 5: Employment structure by economic sector, 2000-2014 (in %)

Country	Austria			Czech Republic			Germany			Poland			Slovakia		
Status	2000	2009	2014	2000	2009	2014	2000	2009	2004	2000	2009	2014	2000	2009	2014
Sectors I, II & III	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Agriculture Sector I	5.6	4.6	4.3	5.2	3.1	2.7	2.5	1.6	1.3	17.4	12.7	11.2	6.9	3.6	3.5
Industry	21.8	16.5	17.2	30.7	31.0	30.0	25.1	22.2	21.4	24.1	23.1	23.2	29.3	27.2	26.1
Of which manufacturing	20.6	15.1	15.8	27.5	25.4	27.0	23.8	20.5	19.8	20.1	19.5	19.3	25.8	24.0	23.4
Construction	8.4	8.8	8.8	9.4	10.1	8.4	8.5	6.7	6.9	7.6	8.3	7.5	8.0	10.9	9.5
Sector II	30.2	25.3	26.0	40.1	41.1	38.4	33.6	28.9	28.3	31.7	31.4	30.7	37.3	38.1	35.6
Trade	15.8	16.0	14.7	13.0	12.9	11.9	14.2	13.5	14.0	14.2	14.8	14.6	12.5	13.2	12.0
Transport and communications	7.1	6.4	6.2	7.9	8.4	7.5	5.5	6.0	5.8	6.3	7.2	7.3	8.3	8.0	7.7
Finance	3.8	3.6	3.4	2.1	2.2	2.5	3.7	3.5	3.2	2.6	2.4	2.4	1.8	2.1	2.2
Education	6.0	6.3	6.9	6.3	5.9	6.4	5.3	6.2	6.6	7.0	7.8	7.9	7.7	6.8	7.0

Country	Austria			Czech Republic			Germany			Poland			Slovakia		
Status	2000	2009	2014	2000	2009	2014	2000	2009	2004	2000	2009	2014	2000	2009	2014
Health and social care	8.0	9.6	9.9	6.1	6.6	7.0	10.0	11.8	12.5	6.6	5.5	5.8	7.0	6.3	7.4
Public administration and defence	6.3	6.9	6.7	6.6	6.6	6.4	8.3	7.3	7.1	5.4	6.5	6.7	7.7	7.6	8.9
Other services*	17.2	21.3	21.9	12.7	13.2	17.2	16.7	21.2	21.2	8.8	11.7	13.4	10.8	14.3	15.7
Sector III	64.2	70.1	69.7	54.7	55.8	58.9	63.9	69.5	70.4	50.9	55.9	58.1	55.8	58.3	60.9

* Due to the Eurostat's transition in classification of economic sectors from NACE 1.1 to NACE 2 in 2009 it was impossible to have comparable data for professional services over the whole period 2000-2014. Therefore they are included in other services.

Source: Eurostat database

As most professions in manufacturing and construction are specific and to a large extent non-transferable to other sectors and requalification is often unsuccessful in terms of job placement or even not offered by public employment services especially to older workers, large numbers of laid-off workers from these two sectors remained in long-term unemployment or withdrew from the labour market altogether. Recovery of manufacturing in the Czech Republic after 2011 absorbed again some of these laid-off workers but this was not the case in other countries. Similarly, redundant workers in agriculture, especially small farmers in Poland who could not resist market competition, did not have appropriate qualifications for other sectors and at least some of them ended up in long-term unemployment or inactivity.

The services sector increased its contribution to employment, in particular in the years prior to the crisis, and underwent significant structural changes. Traditional services, such as trade, transport and communications (without IT) were slowly losing their shares in employment to the benefit of social services - education, health and social care, due to an increased demand for tertiary education as well as a rising demand for health and social care by the ageing population, and of professional and personal services, demanded by enterprises and households. With the exception of personal services, these sectors typically require higher qualifications and professional services and often new types of qualifications. These structural changes thus provide new job opportunities for higher skilled population groups able to acquire new knowledge during their working life, while jobs for low skilled and less flexible persons are gradually disappearing. Moreover, available low-skilled jobs offer only low remuneration not very different from social benefits and therefore lock people with low education in a social welfare trap leading to disconnection with the labour market and a loss of working habits.

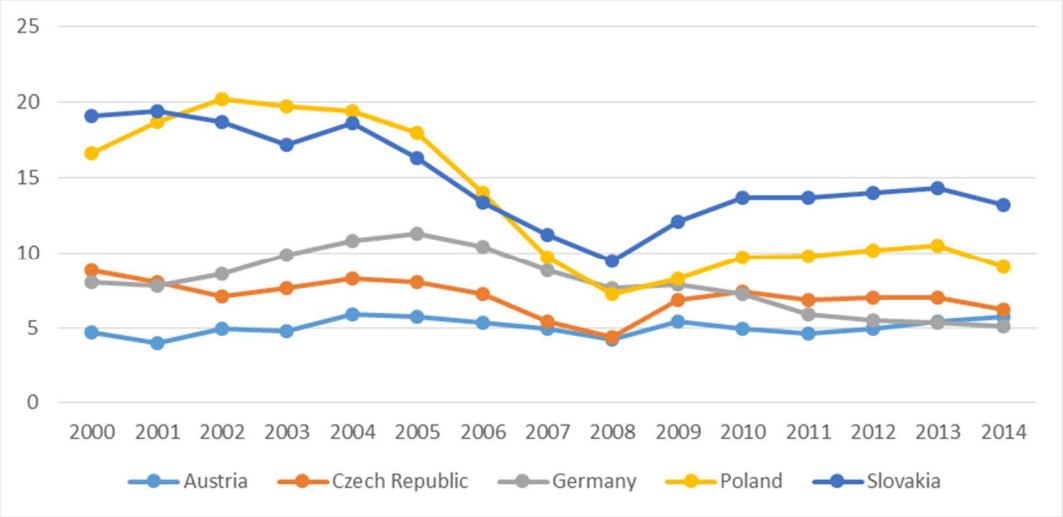
2.3. Unemployment

Figure 2 shows vast differences in the unemployment rates across the five countries in 2000, with the Austrian rate equal to one-quarter of that of Slovakia and less than one-third of the Polish one. The German and Czech rates were in the middle, at about twice the Austrian rate. Between 2000 and 2004 the rates tended to expand in Austria, Germany and Poland, while they more or less stagnated in the Czech Republic and Slovakia. The following period 2005-2008 saw a decline in unemployment[3], in the case of Poland and Slovakia a

[3] A further increase in unemployment in Germany in 2005 was artificial: it was caused by the merger of unemployment assistance and social assistance into the so-called unemployment benefit II within the Hartz labour market reforms (stage IV), when a part of social beneficiaries who were actually

steep one to single digits, while the Czech Republic managed to cut its unemployment rate to one-half. The economic crisis brought a new upswing of unemployment across the five countries in 2009. In Germany this rise was very mild and the rate immediately returned to a decreasing trend. Also in Austria the increase was only small and the unemployment rate further moved around five per cent, albeit with a recent slight upward tendency. In contrast, the Czech Republic, Poland and Slovakia recorded a more substantial growth in joblessness and the elevated level persisted, wiping out reductions achieved prior to the crisis in 2006-2008. Differences in unemployment levels thus widened again, compared with 2008.

Figure 2: The unemployment rates, 2000-2014 (in %)



Source: Eurostat database.

Table 6 provides a disaggregation of unemployment developments by sex and age. In general, unemployment drops with age: youth is most hit by unemployment, while older persons, with a certain exception of Germany, experience the lowest unemployment rates. With regard to youth unemployment, countries managed to reduce it over the analysed period except for Austria, although it grew again significantly after the crisis in the Czech Republic, Poland and Slovakia. In Germany, youth unemployment almost doubled between 2000 and 2005 but since 2006 it has constantly declined. In contrast, Austria experienced a steady increase in youth joblessness over the whole period 2000-2014. Cross-country variations in youth unemployment, despite their certain reduction since 2000, still remain vast – the difference between Germany with the lowest rate and Slovakia with the highest rate equalled 22 percentage points in 2014. Countries also differ a lot regarding the ratio between youth and adult rates: while in Germany this rate equals 1.6, in Poland it reaches three and in the Czech Republic 2.8. It is also noteworthy that except for Austria, this ratio increased in the other four countries since 2008 proving that youth was the hardest hit population group by the crisis.

inactive were included into the unemployment pool in that year. Their number was estimated at some half-a-million persons (Gaskarth, 2014).

Table 6: Unemployment rates by sex and age, 2000-2014 (in %)

Indicator	Country	2000			2009			2014		
		Total	Men	Women	Total	Men	Women	Total	Men	Women
Total population	Austria	4.7	4.8	4.6	5.4	5.6	5.2	5.7	5.9	5.5
	Czech Rep.	8.8	7.4	10.6	6.8	5.9	7.8	6.2	5.2	7.5
	Germany	8.0	7.7	8.3	7.9	8.2	7.4	5.1	5.4	4.7
	Poland	16.6	14.8	18.6	8.3	7.9	8.8	9.1	8.6	9.7
	Slovakia	19.1	19.5	18.6	12.1	11.4	12.9	13.2	12.9	13.7
Youth 15-24	Austria	6.3	6.9	5.6	10.7	11.2	10.1	10.3	10.6	9.9
	Czech Rep.	17.0	17.4	16.4	16.6	16.6	16.7	15.9	15.0	17.1
	Germany	8.5	9.5	7.4	10.7	12.5	9.8	7.7	8.3	7.1
	Poland	35.7	34.3	37.2	20.6	20.2	21.2	23.9	22.7	25.5
	Slovakia	36.9	40.0	33.3	27.3	27.8	26.5	29.7	29.5	30.1
Prime age 25-54	Austria	4.3	4.2	4.4	4.7	4.9	4.5	5.2	5.4	5.0
	Czech Rep.	7.8	6.0	10.0	5.9	4.8	7.3	5.6	4.3	7.1
	Germany	7.1	6.7	7.6	7.3	7.6	6.9	4.7	5.0	4.4
	Poland	14.2	12.3	16.3	6.9	6.3	7.6	7.9	7.2	8.7
	Slovakia	15.9	15.8	16.0	10.8	10.0	11.8	12.0	11.5	12.7
Elderly 55-64	Austria	6.7	7.1	5.9	2.7	2.9	2.5	3.8	4.5	2.8
	Czech Rep.	5.3	5.3	5.2	5.7	5.6	5.8	4.9	4.6	5.4
	Germany	12.7	11.8	14.2	8.0	7.9	8.1	5.1	5.5	4.7
	Poland	9.7	9.1	10.6	6.3	6.7	5.5	6.8	7.1	6.4
	Slovakia	12.7	14.2	n.a.	7.7	6.4	9.9	10.6	9.7	11.7

Source: Eurostat database

The lowest unemployment rate for older workers should be considered in conjunction with their economic activity as longer-term joblessness of older persons close to the retirement age is still to some extent solved through premature departures from the labour market – earlier by using early retirement schemes, now, due to increasingly restricted access to them, with help of disability pensions. This is the case, in particular, of Austria, but also of Poland and the Czech Republic, much less so of Germany and Slovakia.

With regard to the incidence of unemployment among men and women (Table 6), in 2000 three out of the five countries – Czech Republic, Germany and Poland - faced higher joblessness rates for women, compared with those for men, and in the case of the Czech Republic and Poland the gap was large. In contrast, in Austria and Slovakia men were slightly more hit by unemployment than women. Gender differences moderated over the analysed period, only in the Czech Republic they remained more substantial. Women were more struck by joblessness in three countries in 2014 but this time it concerned the Czech Republic, Poland and Slovakia.

When examining gender gaps in the three main population groups in 2000, prime-age female workers were more frequently unemployed than their male counterparts in all the five countries. Their situation, however, gradually improved so that in 2014 prime-age women in Austria and Germany faced lower unemployment incidence in comparison with

prime-age men, while the female rate remained higher than the male one in the Czech Republic and Poland but the gap narrowed. Only in Slovakia the gender difference grew till 2009 and then slightly diminished. The trends for prime-age workers contrast with those for youth: in 2000 young women enjoyed lower unemployment than their male colleagues everywhere with the only exception of Poland. However, over the 2000s the relationship between youth male and female joblessness reversed and in 2014 only Austria and Germany recorded higher unemployment rates for young men as compared to young women. As far as older people are concerned, men were more hit by unemployment in Austria and Slovakia in 2000, while the opposite occurred in Germany and Poland and both rates were equal in the Czech Republic. Over the analysed period gender differences among the elderly moderated and reversed in four out of the five countries: in the Czech Republic, Germany and Poland older men faced higher unemployment than women in 2014, while in Slovakia higher joblessness occurred among older women. Only Austria kept the same relationship.

Table 7 presents the unemployment rates by level of education and the main age groups. It shows that the incidence of unemployment sharply decreases with the rising level of education. In the 2000s, prior to the economic crisis, the joblessness rates of persons with tertiary or upper secondary education steadily declined in all countries but the largest reduction of unemployment concerned persons possessing upper secondary education in the Czech Republic, Poland and Slovakia. In contrast, with the exception of Poland, the joblessness rate of the least educated persons only marginally shrank in the Czech Republic and Slovakia or even increased in Austria and Germany. However, in 2009 the rise in unemployment hit all the three education groups, although most profoundly low skilled workers. The period 2009-2014 saw a new rise in the unemployment rates for all education levels in Austria, Poland and Slovakia, while Germany and the Czech Republic (except for university graduates) experienced again a decline. In 2014 the smallest gap between the unemployment rates of persons with the highest and the lowest education emerged in Germany (9.5 percentage points), while the largest difference was recorded in Slovakia (35 percentage points).

Table 7: Unemployment rates by education age (in %)

Country	Indicator	2000			2009			2014		
	Education level	I.	II.	III.	I.	II.	III.	I.	II.	III.
Austria	Total population	8.2	4.2	2.3	11.0	4.7	2.6	11.8	5.1	4.0
	Youth 15-24	8.3	5.4	n.a.	15.2	8.1	n.a.	14.4	9.0	7.2
	Prime-age 25-54	8.2	3.7	2.2	10.4	4.3	2.7	11.7	4.6	3.9
	Older pop. 55-64	7.6	7.9	n.a.	3.8	3.0	n.a.	6.4	3.6	2.7
Czech R.	Total population	22.8	7.9	3.0	24.4	6.2	2.5	22.4	6.1	2.9
	Youth 15-24	44.2	14.1	13.4	41.1	13.7	13.6	32.4	13.9	13.3
	Prime-age 25-54	21.1	6.9	2.6	24.2	5.4	2.3	23.2	5.5	2.8
	Older pop. 55-64	8.0	5.4	2.8	13.1	5.6	1.8	14.0	5.0	1.5
Germany	Total population	12.7	7.9	4.3	15.9	7.7	3.4	12.0	4.7	2.5
	Youth 15-24	9.7	7.0	6.8	14.2	9.2	6.0	11.8	5.4	4.5
	Prime-age 25-54	13.3	7.2	3.7	17.4	7.3	3.2	13.0	4.4	2.3
	Older pop. 55-64	16.3	14.3	7.7	13.7	8.8	4.3	8.3	5.6	3.0
Poland	Total population	23.4	17.1	5.4	15.4	8.8	4.4	19.7	10.2	4.7
	Youth 15-24	37.0	35.7	26.1	24.5	20.2	19.6	29.8	23.9	19.5
	Prime-age 25-54	24.4	14.1	4.6	15.2	7.3	3.7	19.7	8.9	4.3

Country	Indicator	2000			2009			2014		
	Education level	I.	II.	III.	I.	II.	III.	I.	II.	III.
Slovakia	Older pop. 55-64	7.1	12.1	8.4	9.3	6.6	3.0	13.5	7.1	2.5
	Total population	40.5	18.4	5.2	41.7	11.5	4.3	41.4	12.6	6.4
	Youth 15-24	77.2	35.0	26.4	64.6	24.3	22.4	55.7	26.4	30.0
	Prime-age 25-54	37.4	14.9	4.0	41.8	10.3	3.6	43.7	11.5	6.1
	Older pop. 55-64	33.5	10.2	n.a.	22.6	7.3	n.a.	25.4	10.2	4.1

I Persons holding less than primary, primary or lower secondary education

II Persons holding upper secondary or port secondary (non-tertiary) education

III Persons holding tertiary education

Source: Eurostat database

Of particular concern is the labour market situation of unskilled youth: in 2000 more than three in four unskilled young labour force were jobless in Slovakia and although since then their situation improved, still more than one in two persons from this group were without a job in 2014. In the Czech Republic and Poland their rate also dropped but was around 30 per cent in 2014. Even though significantly lower in comparison with the previous group, the unemployment rates of upper-secondary and tertiary educated youth are still very high in the these countries (in Slovakia joblessness of university graduates even exceeds that of upper secondary school leavers) surpassing similarly educated total population two to five times. Moreover, the upswing in unemployment in the period 2009-2014 was steeper for young people with upper secondary and tertiary education than for unskilled youth. Higher unemployment levels together with their low labour force participation rates highlight serious problems of youth in transition from school to work and point to possible skill mismatches, insufficient quality of education (confirmed also by many complaints from employers) and a lack of practical experience as only a handful of students work part-time in their profession during studies, unlike in Austria or Germany.

The situation of youth in Austria and Germany differs a lot from the three new EU member countries: in 2000 unemployment rates of youth possessing up to upper secondary education were below those of prime-age workers in Germany and only slightly higher in Austria, only university-educated youth faced double rates, compared with prime-age workers. Over the analysed period joblessness of unskilled youth remained below the rate for prime-age group in Germany but exceeded it in Austria, similar to the rates for youth with upper secondary education and university education in both countries. Nevertheless, the differences between the joblessness rates for youth and adult workers regardless of their level of education in Germany and Austria are much smaller in comparison with the other three countries.

Regarding older workers, their unemployment rates were steadily lower in comparison with any other age group for all the three education levels in Austria, Czech Republic, Poland and Slovakia. Only Germany recorded higher rates for the older population having any level of education in comparison with youth and prime-age workers in 2000. Since 2000 the rates for the elderly population constantly declined, in the case of unskilled elderly to well below the rate for unskilled prime-age workers, while the levels of unemployment for older persons with upper secondary and university education remained above those for prime-age workers but the gap is now small.

In summary, returns to education are significant in all the five countries with regard both to economic activity, employment and unemployment and are enjoyed by all age groups. Moreover, the returns are remarkably higher in the three new EU member countries, compared with Austria and Germany. However, the latter two countries are much more successful in supporting young people in their transition from school to work.

A lot of attention is given to migrant workers and their labour market position. Table 8 compares unemployment rates of migrant workers with those of the native population. It shows that with two exceptions (Poland in 2004 and Slovakia in 2014) migrant workers face significantly higher unemployment than the native population. While their joblessness rates declined over time similarly as for native population, differences remain, most significantly in Austria.

Table 8: Comparison of unemployment rates of immigrant and native workers

Country	2004		2009		2014	
	Migrants	Natives	Migrants	Natives	Migrants	Natives
Austria	10.8	5.9	10.5	5.4	10.1	5.7
Czech Rep.	12.8	8.3	9.6	6.8	7.0	6.2
Germany	14.6	10.8	12.9	7.9	7.9	5.1
Poland	18.2	19.4	11.6	8.3	12.1	9.1
Slovakia	24.7	18.6	13.1	12.1	10.7*	13.2

Source: Eurostat database

In this respect it would be interesting to compare also economic activity of migrant and native workers. Table 9 shows that with the exception of evidently incomparable data on economic activity of migrant workers for Poland until 2009 there is a clear difference between the Czech Republic, Poland and Slovakia on the one hand and Austria and Germany on the other. In the former group of countries with much lower shares of migrants in total population the labour force participation rates of migrants are higher than the rates of native population. The explanation could be connected with less generous social systems in these countries that force persons with migrant origin to seek employment. This contrasts with the situation in Austria and Germany where migrant workers have a significantly higher percentage in total population but the participation rates of migrants are lower. Migrant workers thus face bigger problems in the labour markets in these two countries but also may "afford" to be inactive due to more generous social systems and support from their families.

Table 9: Comparison of economic activity of immigrant and native workers

Country	2004		2009		2014	
	Migrants	Natives	Migrants	Natives	Migrants	Natives
Austria	68.1	69.6	70.2	75.2	72.2	76.1
Czech Rep.	65.3	70.0	72.7	70.0	77.3	73.4
Germany	68.0	73.1	71.6	77.2	74.1	78.5
Poland	33.3	63.9	51.5	64.7	71.6	67.8
Slovakia	69.7	69.7	69.7	68.4	71.3	70.3

Source: Eurostat database

However, there is one group of the population, which faces very low economic activity and very high unemployment — Roma minority. The highest concentration of Roma population among the five countries is in Slovakia where their number stands at around 10 per cent of total population. The unemployment rate of Roma people aged 15-64 equalled 70 per cent in Slovakia in 2011 (Messing, 2014).

2.4. Long-term unemployment

Table 10 provides a comprehensive picture of trends in long-term unemployment (defined as joblessness longer than 12 months) as a share of total unemployment and disaggregated by sex and the three main age groups. Among the five countries, Austria can boast of the lowest level of long-term unemployment that stood at around one-quarter of total unemployment over the whole analysed period. In the years before the crisis long-term unemployment was on a decline in most countries, except for Slovakia facing a steep surge and Germany with only a small increase.

In 2009 massive layoffs resulted in a substantial cutback in the long-term unemployment incidence in all the five countries. Between 2010 and 2014 the share of long-term jobseekers in total unemployment climbed more or less everywhere with the only exception of Germany. The steep rise in the incidence of long-term unemployment in Slovakia is particularly worrying as in 2014 almost three in four jobseekers were jobless for more than one year. The vast majority of unemployed persons from the Roma minority are jobless for more than one year and their extremely high long-term unemployment incidence also adds to total long-term unemployment in Slovakia.

Table 10: Long-term unemployment incidence by sex and age (shares in percent of unemployment disaggregated by sex and age)

Indicator	Country	2000			2008			2009			2014		
		Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
Total population aged 15-64	Austria	28.5	29.3	27.3	24.3	25.9	22.6	21.7	21.9	21.3	27.6	28.3	25.8
	Czech Rep.	50.0	49.1	50.7	49.3	49.6	49.1	30.1	27.8	32.3	43.6	43.9	43.3
	Germany	51.5	50.1	53.1	52.5	53.2	51.7	45.5	44.4	46.9	44.3	46.2	41.9
	Poland	44.6	40.2	48.6	33.5	31.7	35.2	30.3	27.9	33.0	42.7	42.8	42.6
	Slovakia	54.7	54.5	54.8	69.5	69.1	70.0	54.0	50.9	57.4	70.2	72.9	67.1
Youth 15-24	Austria	14.2	n.a.	n.a.	13.7	14.4	12.9	12.7	13.8	11.3	13.5	12.7	14.5
	Czech R.	38.2	37.7	38.9	31.2	34.4	26.5	19.8	18.8	21.3	27.8	32.1	22.0
	Germany	23.5	23.7	23.2	29.3	30.4	27.9	27.3	28.0	26.1	23.0	26.1	18.8
	Poland	35.2	30.6	40.1	22.0	21.5	22.6	21.1	20.1	22.2	31.1	32.4	29.6
	Slovakia	43.7	46.1	40.4	52.8	55.2	49.4	41.9	41.5	42.6	57.2	59.3	53.8
Prime age 25-54	Austria	28.5	28.4	28.6	26.6	28.4	24.8	24.0	24.0	23.9	29.3	29.9	28.5
	Czech R.	54.6	55.1	54.2	53.0	54.9	51.7	32.5	30.8	33.9	46.6	47.6	45.9
	Germany	51.0	49.1	52.9	53.6	54.6	52.6	46.3	45.0	47.9	44.2	46.2	41.7
	Poland	47.9	44.0	51.2	37.1	34.6	39.4	33.2	30.1	36.0	44.8	45.0	44.7
	Slovakia	59.4	58.3	60.6	73.2	72.6	73.7	57.0	53.6	60.4	72.3	76.1	68.2
Elderly 55-64	Austria	52.1	55.6	n.a.	56.3	n.a.	n.a.	42.8	n.a.	n.a.	51.0	54.5	n.a.
	Czech R.	44.2	45.6	41.1	55.4	52.2	59.3	33.4	30.1	38.2	48.8	45.1	53.2
	Germany	69.1	69.1	69.0	71.6	71.8	71.4	61.8	60.8	63.0	62.7	63.2	62.0
	Poland	51.8	46.9	57.9	40.5	39.3	43.5	37.0	35.0	41.1	53.2	51.6	55.9
	Slovakia	60.0	59.5	n.a.	80.7	81.9	79.1	60.5	59.0	62.1	77.3	78.1	76.4

Source: Eurostat database

Before the crisis women were more hit by long-term unemployment, compared with men, with the only exception of Austria. However, the crisis hit predominantly male-dominated and better paying sectors, such as the car industry, metallurgy or construction, while newly created jobs in other sectors required different skills and often offered lower salaries. As a result, men became more represented in long-term unemployment in comparison with women.

Developments of long-term joblessness of prime-age workers, both men and women, followed that of total population aged 15-64 (see again Table 10). However, the situation is different with regard to youth and the elderly. Youth recorded the lowest incidence of long-term unemployment of the three age groups in all the five countries. Among them Austria has the lowest share of long-term jobless youth. Moreover, between 2000 and 2014 long-term joblessness among youth declined in all but one country – Slovakia, which faced a steep growth of the long-term unemployment incidence also for young people. Austria, Czech Republic and Poland experienced a significant fall in youth long-term joblessness until 2009 and thereafter, an increase but to levels below those of 2000. Long-term joblessness is more widespread among young men and the gender gap is quite important, only in Austria young women face slightly higher long-term joblessness as compared with men.

Regarding older persons, their situation is in many respects the opposite to that of youth. In 2000 long-term joblessness of the elderly was significantly higher than for any other age group in Austria and Germany, while in Poland and Slovakia the gap still existed but was rather small in relation to prime-age jobseekers. In contrast, in the Czech Republic their long-term joblessness was lower than for prime-age workers. However, in 2014 the long-term unemployment incidence exceeded that of other age groups everywhere. The reason is that between 2000 and 2014 the incidence of long-term joblessness among older persons grew in the Czech Republic, Poland and Slovakia, while it only slightly declined in Austria. In 2014 the long-term joblessness of the elderly exceeded that of prime-age workers more than twice in Austria, while in Germany the difference is almost 20 percentage points. In absolute terms the highest incidence is in Slovakia where more than three in four older jobless persons were without a job for over 12 months in 2014. Older men are more hit by long-term unemployment in Austria, Germany and Slovakia, while in the Czech Republic and Poland it is the opposite.

Table 11 compares the incidence of long-term unemployment among migrant and native population in Austria, Czech Republic and Germany (data for other countries are not available). Only the Czech Republic reports that the share of long-term joblessness in total unemployment is systematically higher for migrant workers, compared with the native population. In Austria migrant jobseekers experienced lower long-term joblessness than the native population until the crisis when this relation temporarily changed but after 2010 it returned again to the previous state. In Germany, migrant workers faced higher long-term unemployment until 2010 but since then native jobseekers have been harder hit by long-term joblessness than migrants.

Table 11: Comparison of the long-term unemployment incidence of migrant and native population (% of the respective group of unemployed persons)

Country	2005		2009		2014	
	Migrants	Natives	Migrants	Natives	Migrants	Natives
Austria	25.8	25.3	24.2	20.5	27.5	27.0
Czech Rep.	66.6	52.6	30.8	30.0	51.9	43.2
Germany	52.9	53.0	47.6	44.7	43.8	44.5
Slovakia	73.6	72.0	n.a.	54.0	n.a.	70.3

Source: Eurostat database

With regard to the composition of the long-term unemployment pool, Table 12 shows that prime-age persons are by far the largest age group contributing between two-thirds (in Germany) and three-quarters (in Austria, Czech Republic and Slovakia) to total long-term joblessness and its share remained more or less constant. In the two countries with relatively low total and long-term unemployment of young people – Austria and Germany, the share of youth in long-term joblessness was on the rise until the crisis and then declined to the previous low levels, below 10 per cent. In the Czech Republic, Poland and Slovakia the proportion of youth in long-term joblessness amounted to 20 per cent and more in 2000 but dropped since then, including during the crisis years. Nevertheless it remained above 10 per cent in 2014. In contrast, in the period 2000-2014 older jobseekers significantly expanded their share in the long-term unemployment pool in the Czech Republic, Poland and Slovakia, while in Austria and Germany their proportion first declined and then turned again upwards. In Austria and Germany the segment of older persons thus exceeded that of youth by some two to three times, while in the other three countries the proportions of these two age groups were rather similar, slightly higher for the elderly in the Czech Republic and for youth in Poland and Slovakia.

Table 12: The composition of the long-term unemployment pool (in %)

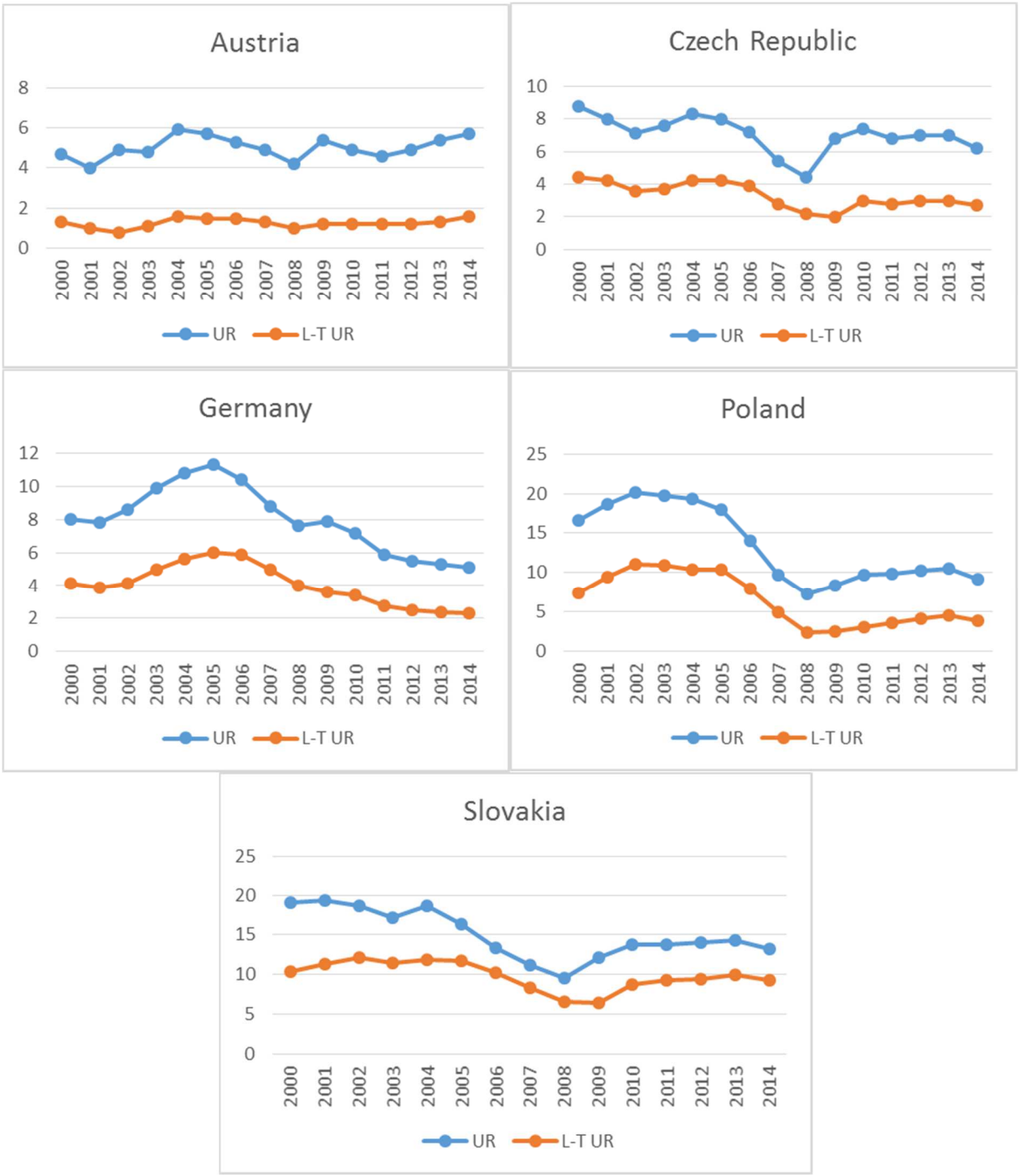
Country	Age group	2000	2009	2014
Austria	Total	100	100	100
	15 - 24	9	17	8
	25 - 54	71	72	73
	55 - 64	19	11	14
Czech Republic	Total	100	100	100
	15 - 24	20	13	11
	25 - 54	76	74	75
	55 - 64	4	13	14
Germany	Total	100	100	100
	15 - 24	6	11	8
	25 - 54	67	69	66
	55 - 64	27	20	26
Poland	Total	100	100	100
	15 - 24	21	18	16
	25 - 54	74	72	70
	55 - 64	4	10	14
Slovakia	Total	100	100	100
	15 - 24	24	17	14
	25 - 54	72	75	74
	55 - 64	3	8	12

Source: Eurostat database

Figure 3 shows that the aggregate and the long-term unemployment rates are strongly correlated in all the five countries. The gap between both rates significantly narrowed in the boom period 2006-2008, which would point to a rather robust labour demand that was naturally first of all directed to short-term unemployed persons but also some long-term jobseekers finally benefited from the favourable labour market situation. When the crisis hit the economies in full strength in 2009 aggregate unemployment jumped up but long-term joblessness reacted with a time lag due to the inflow of newly laid-off persons into unemployment, which increased their share in total unemployment while that of long-term jobless persons temporarily declined. Over the whole period 2000-2014 the long-term

joblessness rate more or less stagnated in Austria. In Slovakia after larger fluctuations, the rate returned to almost the same value as in 2000. In contrast, the other three countries recorded a downward trend, albeit also with fluctuations.

Figure 3: Trends in aggregate and long-term unemployment, 2000-2014 (rates in % of the labour force)



Source: UR – Eurostat database; L-T UR – own computation on the basis of the Eurostat database

In conclusion, the analysis revealed significant differences in labour market performance between Austria and Germany on the one side and the Czech Republic, Poland and Slovakia on the other. The former two countries achieved much faster increases in economic activity and employment of their population, in particular of women and youth. To a large extent, this more rapid growth should be attributed to growing part-time employment widespread especially among women and older persons. The latter countries recorded a certain limited rise of labour force participation as well but only due to growing

economic activity of the older population and in Poland also prime-age persons, while economic activity of youth substantially declined. This together with the rising level of youth unemployment after the crisis, and in particular the faster growth of joblessness of youth possessing upper secondary and tertiary education, points to strengthening difficulties of young people in transition from school to work in these three new EU Member States. In contrast, Germany and Austria were able to smoothen the labour market entry of young people through the dual system of vocational education and training (which existed in the Czech Republic, Poland and Slovakia before 1989, too, but largely collapsed during the transition process) as well as through much higher involvement of young people in part-time professional employment during their studies.

The research also discovered a limited potential of new job creation in the enterprise sector of the Czech Republic, Poland and Slovakia as the share of employees in total employment was declining, while that of own account workers was on a steady increase. In Poland this phenomenon was masked by numerous closures of small subsistence farms but many former small farmers could not find new jobs outside agriculture and ended up in long-term unemployment or inactivity. The economic crisis hit in particular manufacturing and construction and numerous laid-off workers from these two sectors could not find new jobs in services due to the lack of appropriate skills and problems with reskilling as well as due to their significantly higher reservation wages in comparison with what available jobs in services could offer, and therefore they fell into long-term unemployment. Similarly, employment in transport, communications (excluding IT) and trade also shrank and laid-off workers could get new employment in booming service sectors only to a limited extent as many of them (professional services, education and healthcare) require higher qualifications. This explains a new rather strong rise in the incidence of long-term unemployment since 2009 in the Czech Republic, Poland and Slovakia.

Aggregate unemployment underwent a steep reduction everywhere especially in the period 2005-2008 but since 2009 it grew again in all but one country – Germany. In 2014 the unemployment rate finally also dropped in the Czech Republic, Poland and Slovakia but slightly increased again in Austria. Nevertheless, while it moved around 5-6 per cent in Austria, Czech Republic and Germany, Poland recorded a 50 per cent higher unemployment rate (9.1 per cent) and Slovakia even a double rate (13.2 per cent) in 2014. It is also important to note that gender gaps in unemployment narrowed over the 2000-2014 period.

Long-term unemployment developed similarly as aggregate unemployment. However, the incidence of long-term joblessness vastly differs across the five countries, in Austria hitting only one in four jobseekers, while in Slovakia almost three in four jobseekers are without a job for more than one year. Young people have the lowest and declining share of long-term joblessness but still it ranges from slightly over 10 per cent in Austria to more than one-half in Slovakia, which was the only country where this share increased over the 2000-2014 period. In contrast, older persons have the highest incidence of long-term unemployment and, except for Germany, there is no tendency towards its decline.

Migrant workers faced significantly higher unemployment rates than native populations in all the five countries. Moreover, in Austria and Germany their elevated unemployment was combined with lower economic activity, which points to possible discrimination against them in the labour market. Conversely, their labour force participation rates were slightly higher than those of native people in the Czech Republic, Poland and Slovakia but these countries have only small percentages of migrant populations in comparison with Austria and Germany. Migrant workers are also more hit by long-term unemployment than native populations with the only exception of Germany in recent years.

These results thus raise the question, what are the reasons for such differences in labour market performance, unemployment and long-term unemployment levels and trends. Answers to this question will be sought in the following parts.

3. Structural unemployment and its estimation

3.1. Types of unemployment

There are three basic types of unemployment: frictional, cyclical and structural.

Frictional unemployment is defined as unemployment that results from regular labour market turnover, when people enter or leave the labour force or are moving between jobs. Both employers and workers spend some time searching for the best match when seeking new employees or a new job and during the period of search jobless persons are frictionally unemployed. Frictional unemployment is thus always present in the economy and by definition is of a temporary nature. The level of frictional unemployment depends on the rate at which people enter or leave their jobs and on the rate at which jobs are created and destroyed. In times of large-scale structural changes frictional unemployment expands. It can also increase as a result of communication gaps between employers and jobseekers when employers cannot find workers with certain skills, although such workers are available in the local labour market, or when jobseekers are unable to find appropriate vacancies despite their availability in the market. Obviously, there is a role for public employment services and private employment agencies to overcome this communication gap and help match employers and jobseekers. Also labour market policies may impact on the readiness of employers to hire new workers or lay off redundant employees as well as on the job search activity of unemployed persons.

Cyclical unemployment is associated with the business cycle. It emerges in its downturn phase when many jobs are destroyed and workers laid off, while at the same time demand for new labour is low and the laid-off workers cannot find new jobs. Cyclical unemployment should disappear in the boom period when labour demand recovers and laid-off workers are again absorbed by the labour market.

Structural unemployment arises from technological changes, shifts in the composition of output resulting from changes in demand for goods and services or from geographical changes to where work is located. If workers laid off due to these changes do not have skills demanded in jobs available in the labour market or their reservation wage exceeds the offered wage in these jobs or they are not able or willing to move to regions with vacancies or have other handicaps for which they cannot find a new job, they become structurally unemployed. However, it may also be connected with institutional and policy changes that create obstacles for re-employment or for new labour market entry. Typically, structural unemployment coexists with a number of vacancies due to a mismatch between what employers need and offer and what workers can offer and accept. Unlike frictional and cyclical unemployment, structural unemployment is longer-lasting and its remedy usually requires a committed longer-term approach (Nesporova, 2015).

3.2. Estimation of structural/natural unemployment

As structural unemployment is associated with characteristics of the labour force as well as with longer-term processes in the economy and with institutional changes and is unique for each country, it constitutes the basis of the “natural” rate of unemployment, defined as the unemployment rate at which the economy would settle in the long-run in the absence of economic shocks (see e.g. Orlandi, 2012). In this sense structural unemployment is identified with the “natural” rate of unemployment estimated as a trend component of unemployment developments, when fluctuations associated with the business cycle and with possible changes in frictional unemployment are filtered away. There are two approaches used for measuring the “natural” rate of unemployment and thus structural unemployment.

The first one is called the non-accelerating inflation rate of unemployment (NAIRU) and is defined as the lowest level of unemployment at which inflation remains stable over a certain period of time. If unemployment falls below this rate, inflation will rise while unemployment climbing above this rate will cause a decline in inflation.

An alternative approach is the non-accelerating wage rate of unemployment (NAWRU). This notion is connected with wage inflation and represents the lowest unemployment rate at which the wage level does not exercise pressure on inflation. If unemployment drops even lower, wages start growing due to evident shortages of the labour force and inflation also strengthens and vice versa, if unemployment increases, wage pressures fade and inflation declines. The natural rate of unemployment includes structural unemployment and frictional unemployment but assumes that frictional unemployment is constant.

NAIRU is currently calculated by the OECD for the OECD countries, while NAWRU has been developed and is mainly used by the Directorate-General for Economic and Financial Affairs of the European Commission (ECFIN) for estimating structural unemployment in the EU countries. As all the five countries are members of both the EU and the OECD, it is interesting to compare these two estimates – see Table 13. It shows that the two estimates of the level of structural ("natural") unemployment provide rather similar results. The main difference concerns Poland for the whole period and in particular Slovakia until 2009, which are significantly higher when measured by NAWRU as compared to NAIRU. Also for Germany NAWRU estimates exceed the NAIRU ones until 2009. For the period 2010-1014 both estimates get closer to each other, with the only exception of Poland.

Table 13: Structural ("natural") unemployment estimated by NAIRU and NAWRU, 2000-2014 (% of total unemployment)

Country	2000	2004	2008	2009	2012	2014
NAIRU						
Austria	4.1	4.3	4.3	4.4	4.4	4.5
Czech Republic	7.4	7.7	6.6	6.6	6.4	6.3
Germany	8.0	8.7	7.4	7.1	5.9	5.6
Poland	13.4	13.4	10.3	9.6	8.7	8.5
Slovakia	12.1	12.1	13.0	13.1	13.1	12.5
NAWRU						
Austria	3.7	4.2	4.4	4.5	4.7	4.9
Czech Republic	7.6	7.8	5.5	6.8	6.5	6.3
Germany	8.9	9.2	8.0	7.6	5.9	4.9
Poland	14.8	14.2	12.3	11.8	10.0	8.8
Slovakia	16.0	15.8	14.1	13.9	13.0	12.2

Source: NAURU – OECD database; NAWRU – ECFIN AMECO database

Both NAIRU and NAWRU reveal a significant declining trend in structural unemployment in Germany and Poland in the period 2004-2014. In contrast, they indicate a small increase in structural unemployment in Austria over the whole analysed period. In the case of the Czech Republic and especially Slovakia they are in disaccord. With regard to the Czech Republic, both estimates conform to a slight rise in structural unemployment between 2000 and 2004, followed by a decrease until 2008. For 2009 NAWRU estimates an upsurge and then a slight but steady fall in structural unemployment, while NAIRU does not find any change in 2009, compared with the previous year, and further shows only a negligible decline. For Slovakia NAWRU suggests a steep decrease in structural unemployment over the whole period 2000-2014, while NAIRU proposes a small increase until 2013 and then a slight decline in 2014.

Now it would be interesting to compare both proxies of structural ("natural") unemployment with actual unemployment rates. If the actual unemployment rate occurs above the natural unemployment rate, the difference is to be attributed to an excess of labour supply over labour demand and to a combination of increases in cyclical and frictional unemployment. In contrast, if actual unemployment occurs below the natural rate it indicates labour shortages but also improved matching between jobs and jobseekers. Results for the five countries are depicted in Figure 4.

Figure 4: Developments of structural, cyclical and total unemployment, 2000-2014 (%)

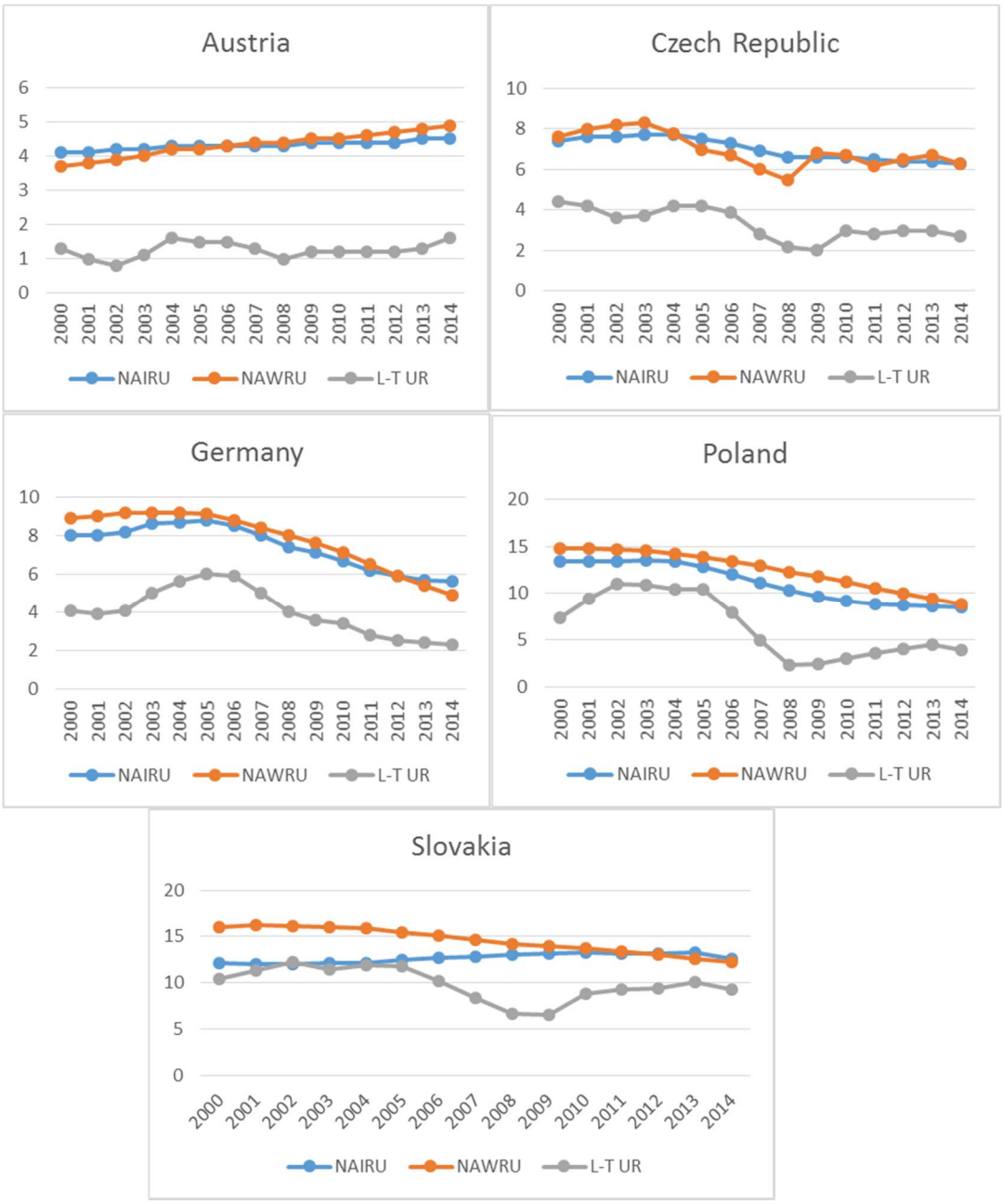
Sources: NAIRU – OECD database; NAWRY – ECFIN AMECO database; Total unemployment rate – Eurostat database

Figure 4 suggests that over the period 2000-2014 total unemployment in Austria moved in general above the natural rate of unemployment with the exception of three years: 2001, 2008 and 2011. It means that cyclical and frictional unemployment were non-negligible

outside these three years, reaching up to 1.7 percentage points in 2004. In the Czech Republic total unemployment fluctuated around the natural rate, exceeding it before 2001 and again slightly in 2004-2005 and 2010-2013, i.e. cyclical unemployment was fairly low. In contrast, in the two periods 2002-2003 and 2007-2008 total unemployment fell below the natural unemployment rate revealing labour shortages, in particular during the second period just before the economic recession. In Germany cyclical unemployment occurred only in the period 2004-2007, otherwise aggregate unemployment seemed to follow closely natural unemployment. In Poland aggregate unemployment significantly exceeded structural unemployment in the period 2001-2005, which indicates an increase in cyclical and frictional unemployment, and slightly also in 2013, while between 2007 and 2009 the labour market seemed to face labour shortages. Finally, in Slovakia the relationship between aggregate and structural unemployment was similar as in Poland: total unemployment exceeded the natural one significantly between 2000 and 2005 and slightly also in 2013 revealing substantial cyclical and frictional unemployment, while in the period 2007-2009 it moved below the natural rate suggesting unsatisfied labour demand and possibly improved matching between jobs and jobseekers.

Both estimates of structural unemployment are compared with long-term unemployment in order to examine their relationship. Figure 5 shows a rather strong correlation between the estimates of the structural (natural) unemployment rate and the long-term unemployment rate trend. This is no surprise as long-term unemployment is by nature of mostly structural character but unlike structural unemployment it also includes cyclical fluctuations. In Austria both structural and long-term unemployment more or less stagnated, with a mild tendency towards an increase since 2008. In Germany both indicators were rising until 2005 and since then they steadily declined till the end of the analysed period, including during the economic recession. In the Czech Republic, Poland and Slovakia the development of structural and long-term unemployment was very similar, only the magnitude differed: they stagnated (from 2000 in the Czech Republic and one year later in the two other countries) until 2005, then they recorded a steep fall till 2008 and between 2009 and 2013 they again had an increasing tendency.

Figure 5: The relaltionship between structural (natural) and long-term unemployment, 2000-2014 (in % of the labour force)



Sources: NAIRU – OECD database; NAWRU – ECFIN AMECO database; long-term unemployment rate – own computation on the basis of the Eurostat database

3.3. The Beveridge curve

The decomposition of unemployment into cyclical, frictional and structural unemployment is also estimated with the help of the so-called Beveridge curve. The Beveridge curve depicts a relationship between the unemployment rate and the job vacancy rate, which measures the number of unfilled jobs as a proportion of the labour force. Ideally, it is hyperbolic shaped and describes movements during the business cycle: in times of economic recession job vacancies disappear and unemployment increases, which is represented by moving on the curve downwards and the increase in unemployment is of a cyclical type. In contrast, economic booms lead towards new job creation, a decline in the cyclical type of unemployment and a movement on the hyperbolic curve upwards.

However, if the curve moves inwards, towards the origin, or outwards, away from the origin, it signifies changes in frictional and/or structural unemployment. If for example the matching process between jobs and jobseekers becomes more efficient, the curve moves towards the origin as frictional unemployment is reduced. Frictional unemployment usually declines in periods of economic stability or boom, when job destruction is low when people changing their jobs and new labour market entrants can find new jobs easily. This also shifts the Beveridge curve inward. On the contrary, if matching between vacancies and jobseekers deteriorates due to, for example, less efficient work of public employment services, or job destruction and layoffs of workers strengthen as a result of economic recession while job search takes longer, frictional unemployment increases and the curve moves outwards. Moreover, in periods of economic and political uncertainty employers may hesitate with new recruitments and hold vacancies open longer, which also stimulates frictional unemployment and shifts the curve outward.

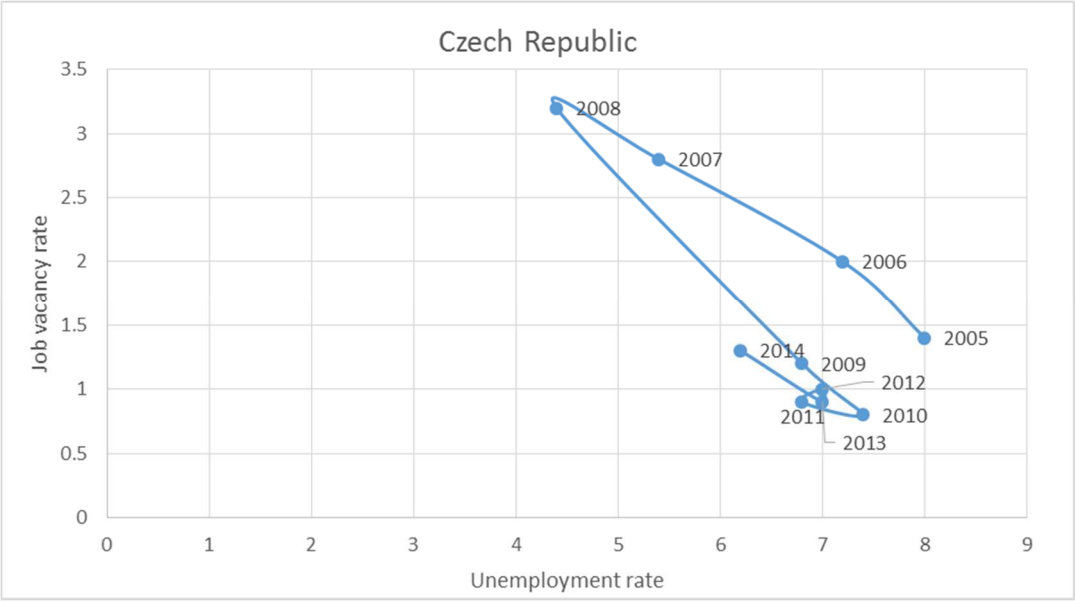
If skills mismatches strengthen in the economy due to technological changes or changes in demand for goods and services and structural unemployment grows, the Beveridge curve moves away from the origin. As explained earlier, structural joblessness may also grow because of institutional and policy changes or because of negative changes in the structure of the labour force (resulting e.g. from the ageing of the population, geographical immobility, higher percentage of people with employment barriers) that has the same impact on the position of the Beveridge curve. And vice versa, when structural unemployment declines as a consequence of positive movements in education and skills of the labour force or higher geographical mobility of workers (supported by appropriate labour market policies) or other factors, the curve will move towards the origin.

Also a strong and prolonged increase in the labour force participation rate that is not accompanied by adequate job creation will lead to higher unemployment and push the Beveridge curve outward, while a reduction in economic activity of the population without job destruction will result in labour shortages, decline in unemployment and an inward move of the curve. Similarly, an increasing incidence of long-term unemployment pushes the curve outward as employers do not hire long-term jobless persons on available vacancies due to their deteriorated skills or other (real or perceived) handicaps lowering their labour productivity.

The Beveridge curve has been constructed for the Czech Republic, Germany, Poland and Slovakia based on the availability of data on job vacancies. Unfortunately, job vacancy data for Austria are not published and therefore the curve is missing for this country.

Figure 6 presents the Beveridge curve for the Czech Republic. It documents a north-west move, i.e. a strong job creation associated with a steep decline in the unemployment rate as a result of economic boom in the period 2005-2008. Its strong westward direction indicates a certain reduction in structural unemployment. Deep economic recession in 2009 and 2010 led to a sharp fall in the number of vacancies and a new increase in unemployment and the curve moved in the typical south-east direction. However, as the unemployment rate in 2010 remained below the level of 2005 it proves that the structural part of unemployment still stayed lower than in 2005. Between 2010 and 2013 there was no development in the labour market with regard to the unemployment and job vacancy rates as the economy remained depressed. Economic recovery started occurring with very modest job creation and a small decline in both aggregate and structural unemployment only in 2014.

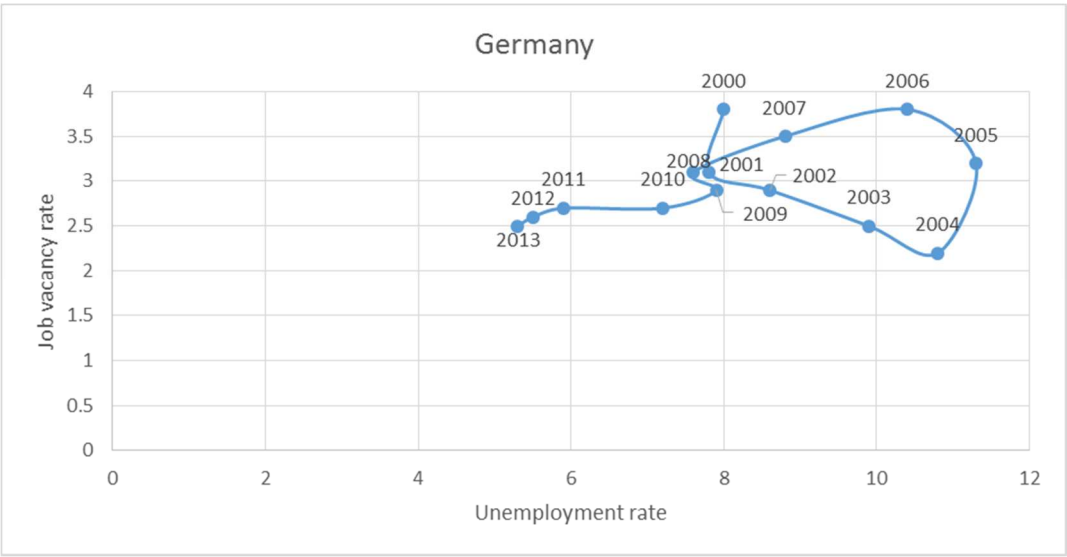
Figure 6: The Beveridge curve for the Czech Republic (rates in % of the labour force, annual averages)



Source: Owen construction using data from the Eurostat database

Figure 7 provides the Beveridge curve for Germany which was the only country with data on the job vacancy rate for the whole period 2000-2013. The shape of its Beveridge curve is very different from the "ideal" curve depicting cyclical fluctuations. Between 2000 and 2004 it moved outward in the south-east-east direction, which signaled structural problems but also an increase in cyclical unemployment. Since 2005 the curve shifted strongly inward, initially until 2008 in a south-west-west direction that indicated a decline in structural unemployment in combination with a reduction in frictional unemployment but between 2009 and 2013 the pure westward movement showed a clear reduction of structural unemployment.

Figure 7: The Beveridge curve for Germany (rates in % of the labour force, annual averages)



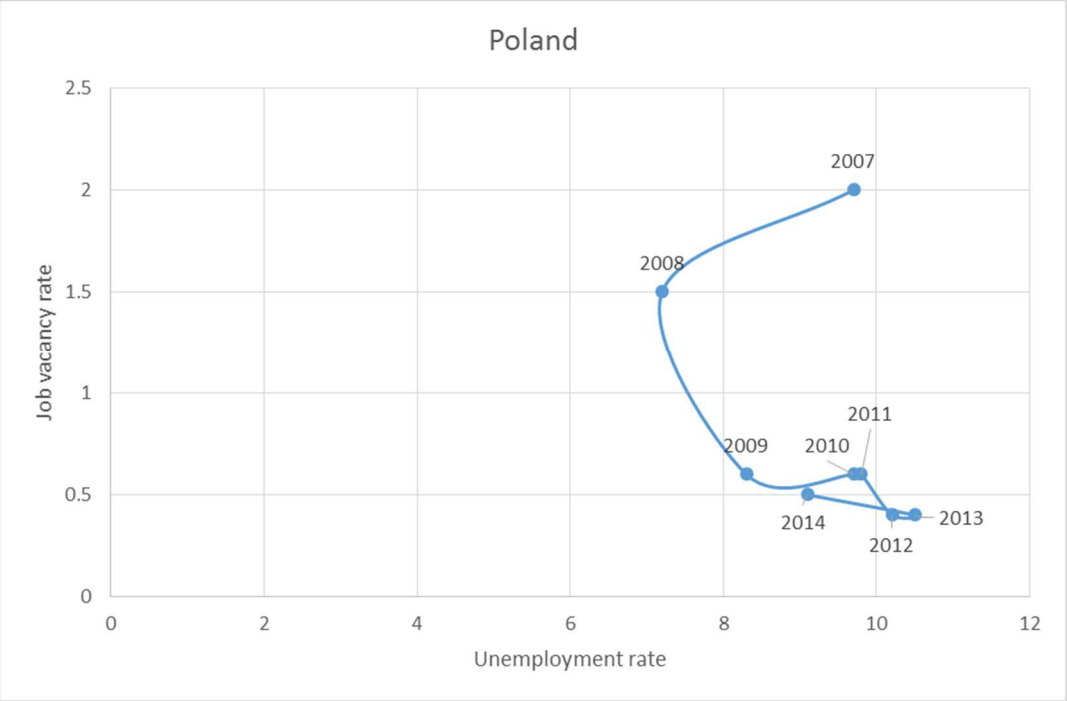
Source: Own construction using data from the Eurostat database

What distinguishes Germany's Beveridge curve is its position around the significantly higher magnitude of the job vacancy rate in comparison with that of Slovakia, Poland (see below) and the Czech Republic. One possible explanation could be the underestimation of the real job vacancy rate in the latter three countries as their enterprises no longer have the

obligation to announce vacant jobs to the public employment service and prefer other channels for recruitment of new workers to their vacant jobs. Nevertheless, the possible underreporting of vacancies can only partially explain this difference between Germany on the one hand and the three countries on the other: another reason is the higher job creation potential of Germany in comparison with the three other countries.

The Beveridge curve for Poland is shown in Figure 8 (data on job vacancies are published only as of 2007). The initial movement of the Beveridge curve south-west-west signals a decline in structural unemployment combined with some reduction in frictional joblessness. Between 2008 and 2009 and again between 2011 and 2012 Poland went through some increase in cyclical unemployment but the shift of the curve eastward would also point to a rise in structural and/or frictional unemployment. Since 2013 the curve again moves in the western direction suggesting a decline in structural unemployment.

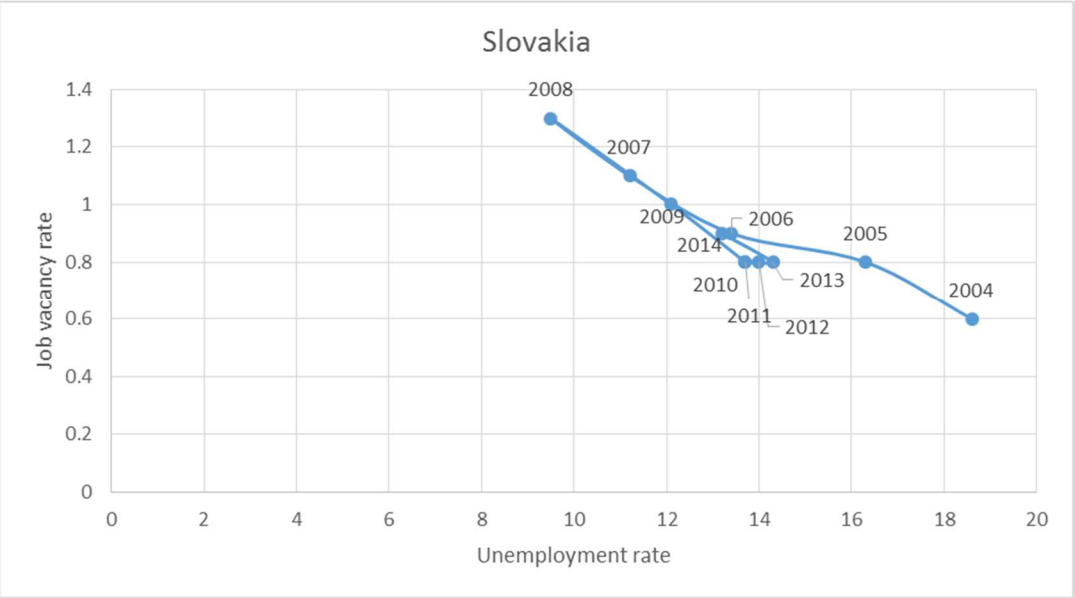
Figure 8: The Beveridge curve for Poland (rates in % of the labour force, annual averages)



Source: Own construction using data from the Eurostat database

Finally, Figure 9 shows the Beveridge curve for Slovakia. Between 2004 and 2008 it moved in the north-west direction characteristic for the boom period when the economy creates new jobs and unemployment declines. As the slope of the curve is flatter and westward oriented it would indicate a certain reduction of not only cyclical but also structural unemployment. In contrast, during the period 2008-2010 the curve returns on the same route back south-east signalling an increase in cyclical unemployment combined with a small increase also in structural unemployment that however is still significantly smaller in comparison to the level of 2004-2005. Furthermore, the curve does not move from 2010 till 2013 which implies stagnation in the labour market. In 2014 the curve north-west which could mark a new labour market recovery that may bring along a decline in cyclical and structural unemployment.

Figure 9: The Beveridge curve for Slovakia (rates in % of the labour force, annual averages)



Source: Own construction using data from the Eurostat database

In sum, a comparison of the analysis of unemployment and its decomposition to structural, cyclical and frictional parts undertaken with the help of NAIRU and NAWRU on the one hand and the analysis using the Beveridge curve on the other, shows that both methods provide fairly similar results. They point to significant differences in structural unemployment and its development across the five countries. Austria kept low and stable levels of structural unemployment (with a slight upward tendency) over the whole analysed period. The Czech Republic and Germany had initially similarly high levels of structural unemployment but from 2005 Germany managed to reduce it significantly and systematically over the time while in the Czech Republic this positive tendency was interrupted by economic recession, when its level increased again and since then until 2013 no movement was recorded. Poland and Slovakia had similar developments: they started with very high levels of structural unemployment and both countries succeeded to cut total unemployment prior to the crisis, apparently due to a combination of reductions of all the three types of unemployment. During economic recession cyclical and structural unemployment increased somewhat again and between 2010 and 2013 the labour market situation remained almost without change but in 2014 a turnaround to positive developments seemed to have occurred. The analysis also confirmed that the Czech Republic, Poland and Slovakia struggled with the low job creation capacity of their economies.

While this analysis can separate cyclical fluctuations in unemployment, i.e. fluctuations caused by the business cycle, from structural and frictional unemployment, it does not reveal possible reasons why structural unemployment reaches the given level and which factors are behind its changes for a certain country and what are the reasons for remarkable cross-country differences.

4. Determinants of structural and long-term unemployment

The structural or natural rate of unemployment was first introduced by Friedman (1968) who determined that it depended on labour market features such as the minimum wage, trade unions and their wage bargaining strength and frictions in matching the unemployed with job vacancies. Research on the issue of possible determinants of structural unemployment has developed since then, expanding the list of labour market institutions affecting structural unemployment but has also including various economic variables impacting demand for labour. Gianella et al. (2009) summarized the research on the determinants of structural unemployment (e.g. IMF, 2003; Bassanini and Duval, 2006; Nickel et al., 2005) and identified the following main factors: the labour tax wedge, user costs of capital, the average unemployment benefit replacement rate, the trade union density, product market regulations, the level of the minimum wage, the employment protection legislation, the extent of skill mismatches and the efficiency of active labour market policies and of the job matching process.

The suggested reasoning is that an excessive tax wedge discourages employers from hiring additional (formal) workers and similarly dissuades workers to seek employment in the formal economy. Higher costs of capital induce higher production costs and may lead to labour shedding and larger joblessness. Also the elevated average unemployment benefit replacement rate as well as longer paid benefits do not stimulate jobless persons, in particular lower skilled ones, to return to employment. Rather, they may become trapped in the so called benefit trap. Larger trade union membership as with an excessive level of the minimum wage in relation to the average wage may push the overall wage level up and may again reduce new recruitments and through high reservation wages hinder unemployed persons to take up available lower paid jobs. Strict employment protection legislation with regard to contracts without limit of time may on the one hand protect workers holding such contracts against layoffs and thus preserve employment but at the same time suppress hiring of new workers and maintain higher unemployment. If fixed-term contracts are strictly regulated it may seriously limit employers' ability to adjust to changing market conditions with possible negative impact on employment and unemployment, while the combination of stricter regulation of permanent contracts and loose regulation of temporary contracts contributes to labour market duality and increased tensions in the labour market. Also strict product market regulations may protect large firms to the detriment of smaller firms and prohibit the entry of new firms, increase overall production costs and result in lower employment and higher unemployment. Large mismatches between skills required in vacant jobs and skills of jobseekers obviously lead to lower productivity and higher structural unemployment. Efficient active labour market policies can at least partially remedy skill mismatches through training and alleviate other handicaps of jobseekers, while the efficient job matching process can accelerate new or re-employment of jobless persons.

Gianella et al. (2009) estimated the impact of some of these factors on the level of structural unemployment measured by NAIRU for 23 OECD countries for the period 1976-2003. Similarly as in previous research (e.g. OECD, 2006; Nicoletti and Scarpetta, 2005), they included only factors related to the labour tax wedge, the user cost of capital (using the real interest rate as a proxy), the unemployment benefit replacement rate, union density, an indicator of regulatory impediments to product market competition and the minimum wage. Their results suggested that the level of tax wedge, the product market regulation and the user cost of capital were the most important determinants of structural unemployment, while the level of unemployment benefits and the trade union density were also statistically significant variables but with only a limited impact (the higher values of all these variables increased structural unemployment). The minimum wage was not found to have any significant direct impact on structural unemployment. The main problem with such regressions, however, is that important factors of structural unemployment, such as the

extent of skill mismatches or geographical mismatches as well as the availability and efficiency of active labour market policies and of the job matching process in general were omitted as it was implicitly assumed that e.g. the lowering of the tax wedge or of the unemployment or social benefit level can be sufficient for overcoming any negative effect of these factors.

Blanchard and Wolfers (2000) included some other variables reflecting the role of economic "shocks" stemming from technological change and globalization, such as changes in total factor productivity, on the development of structural unemployment. In reaction to the kick-off of the recent economic and financial recession by the burst of the housing bubble, Estevao and Tsounta (2011) pointed to the housing market fluctuations as another factor that reduces geographical mobility and through its interaction with skill mismatches contributes to higher structural unemployment. They found strong evidence in support of this thesis as the collapsing housing market suppresses housing prices and eventual sales of housing by people who lost their jobs due to skill mismatches and who might wish to move for re-employment would mean a significant loss of their wealth, thus become a prohibitive factor.

Some authors also point to a hysteresis effect (see e.g. Ball, 2009), namely that long periods of high unemployment tend to increase the share of long-term unemployment and unemployment thus becomes entrenched. The reason is that with prolonged unemployment persons often give up their search for jobs as the interest of employers to hire them sharply declines. In addition, employed persons do not need to worry any longer about competition for jobs from the side of the long-term unemployed and do not moderate their wage demands, which has an adverse impact on the creation of new jobs.

Orlandi (2012) further built on this additional research and divided determinants of structural unemployment into labour market structural indicators and non-structural factors. Among structural factors he included the labour tax wedge, the unemployment benefits replacement rate, the trade union density and the expenditure on active labour market policies. As non-structural factors he specified the real interest rate (as high real interest rate lowers capital accumulation, discourages job creation and increases unemployment), changes in the trend of total factor productivity (deviations from its trend growth are assumed to cause adjustment problems for firms and workers and can contribute to structural unemployment) and the housing boom-bust fluctuations (using the employment share in construction as a proxy). Apart from the factors considered by Gianella et al. (2009), Orlandi thus took into account in addition three variables: active labour market policies, changes in total factor productivity and changes in the construction share in total employment. The two latter variables together with developments in the real interest rate are implicitly supposed to reflect the effect of skills and geographical mismatches on structural unemployment. Then he estimated the impact of these factors on the sample of 13 (old) EU countries for the period 1985-2009. While all the above listed factors appeared to be statistically significant and their sum explained some 90 per cent of variations in structural unemployment, the effect of individual factors on the level and developments of structural unemployment estimated by NAWRU largely differed. The most influential factors were the employment share in construction (a one percentage increase cut structural unemployment by 0.66 percentage points) and the labour tax wedge (growth of one per cent pushed structural unemployment up by 0.29 points), while the impact of changes in the real interest rate, total factor productivity, trade union density and generosity of unemployment benefits were much smaller. And the influence of active labour market policies on the reduction of structural unemployment, although also statistically significant, was minimal.

The EC (2012) suggested several factors as the driving forces of high and persistent long-term unemployment: the economic cycle, skill mismatches, geographical mismatches, mismatches between wages offered in available jobs and reservation wages of jobseekers, the labour tax wedge and the generosity of unemployment benefits and other social

benefits/assistance, stricter employment protection legislation with regard to regular contracts as well as regulation of temporary contracts (as temporary contract holders have lower access to training, are the first to be laid-off during economic recession and when economic recovery comes, due to their already obsolete skills they may remain unemployed), outcomes of active labour market policies and efficiency of the job matching process. When comparing these factors of long-term unemployment with the above listed determinants of structural unemployment, they are fairly similar, with the exception of economic cycle fluctuations (as these by definition are excluded from structural unemployment). Remedies for structural and long-term unemployment are thus more or less identical.

The next section provides a closer look at these factors of structural and long-term unemployment in the five analysed countries and endeavour to determine, which of them were important for each of these countries and thus were the cause of the observed large differences in structural and long-term unemployment across them.

5. Factors driving structural and long-term unemployment in Austria, Czech Republic, Germany, Poland and Slovakia

5.1. Skills mismatches

Skills mismatches cover a range of imbalances when skills of workers do not correspond with the skills required in the jobs performed by them (i.e. they are over-skilled or under-skilled or have the required level but different type of skills for their job) or when skills of jobseekers do not match with the skills demanded in available vacancies (i.e. supply of skills does not match with demand for skills). Empirically it is very difficult to measure skills directly and therefore skill proxies are used, such as years of education on the supply side and occupations on the demand side (see ILO, 2014).

Empirical research (ILO, 2014) shows that persons with higher levels of education than is actually required in their job are usually better remunerated than those, whose skills are more appropriately matched to the job in question. But, as their potential is underutilized they are generally less satisfied in their work, which may have a negative impact on their work performance, and they are also inclined to change their job more quickly. On the other hand, their higher education gives them erudition to find new innovative approaches and improve working methods, with a positive result on labour productivity. In contrast, workers possessing education insufficient for their job have lower wages than the well-matched at the same job but more than workers with the same education level and a matching job. As their skills are below the level required in their job, their labour productivity is lower. While over-education implies a certain loss in relation to potential production achieved if the person is well-matched, the case of under-education brings along a potential real loss in labour productivity.

Two approaches for estimating the level and trends in skills mismatches – a normative measure and a statistical measure - were used (for details on both approaches see ILO, 2014) on the data sets collected by the European Social Security Survey, rounds 1 to 6, running each second year since 2002. The results for Austria, Czech Republic, Germany, Poland and Slovakia are provided in Table 14 – the two figures for each country and year are results of computations using the normative and the statistical measures.

Table 14: The level and developments of over– and under-education of workers 2002-2012 (% of total employment)

Country	2002	2008	2010	2012
Over-education				
Austria	3.6 – 11.3	7.0 – 14.9	n.a.	n.a.
Czech Republic	7.3 – 11.7	6.8 – 12.5	7.6 – 11.0	7.9 – 13.2
Germany	12.9 – 16.3	10.6 – 13.5	10.1 – 15.0	13.3 – 14.4
Poland	3.6 – 15.1	5.5 – 14.6	5.4 – 15.9	5.0 – 14.7
Slovakia	n.a.	10.0 – 15.9	11.1 – 18.7	10.7 – 20.1

Country	2002	2008	2010	2012
Under-education				
Austria	14.4 - 43.8	13.5 - 34.7	n.a.	n.a.
Czech Republic	9.5 - 24.5	10.0 - 26.3	10.9 - 20.3	9.8 - 24.3
Germany	14.7 - 24.2	14.1 - 24.6	14.6 - 24.9	14.0 - 22.1
Poland	13.1 - 55.6	16.2 - 45.1	14.5 - 40.1	13.1 - 39.8
Slovakia	n.a.	11.4 - 23.6	10.6 - 20.6	8.0 - 17.0

Source: ILO (2014), Tables A1, A3, A5 and A7

The estimates of skills mismatches provided by the normative and the statistical methods differ less when over-education is measured but quite substantially for estimating under-education. The authors stress that the methods have their advantages but also disadvantages and therefore one measure cannot be preferred to the other. Moreover, both methods are influenced by specifics of national education and occupation systems (in spite of the fact that they use the same methodology of international standard classifications of education (ISCED-97) and occupations (ISCO-88)) and therefore they are more appropriate for measuring development of skill mismatches in each country rather than for any cross-country comparisons. When taking an arithmetical mean of the two figures as a certain indicator of the level and development of over-education and under-education for each country, some tentative conclusions can still be drawn. First, the level of over-education tends to slightly rise in all the five countries, which would indicate that people with higher education are increasingly forced to accept jobs requiring lower level of skills and this trend strengthened during the 2008-2009 crisis. Second, the size of under-education generally declined over the whole period 2002-2012 in all but one country, the Czech Republic, where it first increased but then returned to the initial level. This decrease in under-education accelerated during the crisis as under-educated people were more often made redundant than other workers.

However, while the above measures provide estimates of skills mismatches, they do not take into account imbalances between skills of the whole labour supply and skills demanded by the labour market and development of this imbalance over time for each country. (Alternatively, it would be relevant to compare the skills structure of unemployed persons plus discouraged workers and skills requirements in available vacancies. However, data for the latter indicator are unfortunately not available.) Total labour supply could be approximated by the working age population, while demand for labour by total employment. The level of skills (high-skilled, medium-skilled and low-skilled) is again approximated by the level of education (their classification is the same as in Table 7). Estevao and Tsounta (2011) suggested a simple index of skills mismatches as a difference between skills supply and skills demand. Their index can be constructed for year t as follows:

$$\text{Skills mismatch indext} = (W_{1t} - E_{1t})^2 + (W_{2t} - E_{2t})^2 + (W_{3t} - E_{3t})^2$$

where W stands for the percentage share of working age population with skill level i and E for the percentage share of employment with skill level i and i = 1, 2 or 3 signifies respectively high, medium or low level of education.

Table 15 presents the skills mismatch index for the five countries for selected years of the period 2000-2014. It shows a remarkable difference between Austria and Germany on the one hand and the Czech Republic, Poland and Slovakia on the other with regard to the overall level of the skills mismatch. This reflects a significantly higher gap in the utilization of skills of the working age population (labour supply) in actual employment (labour demand) in the latter three countries in comparison with Austria and Germany. The skills mismatch index increased a bit in the Czech Republic, Germany and Slovakia between 2000 and 2004, while it stagnated in Austria and Poland, then declined everywhere in the pre-

crisis period until 2008 – more sharply in the Czech Republic, Poland and Slovakia, less so in Austria and Germany. In the crisis it increased in Austria and Germany and stagnated in Poland, while only slightly declined in the Czech Republic and Slovakia. Between 2009 and 2014 the index more or less stabilized in Poland and Austria and continued declining in the Czech Republic and Slovakia, albeit more slowly than before the crisis, while the reduction of skills mismatches in Germany persisted until 2013 and in 2014 started reversing. In 2014 Slovakia still faced the highest level of skills mismatches, followed by Poland, while the situation in the Czech Republic got rather close to that of Austria and Germany.

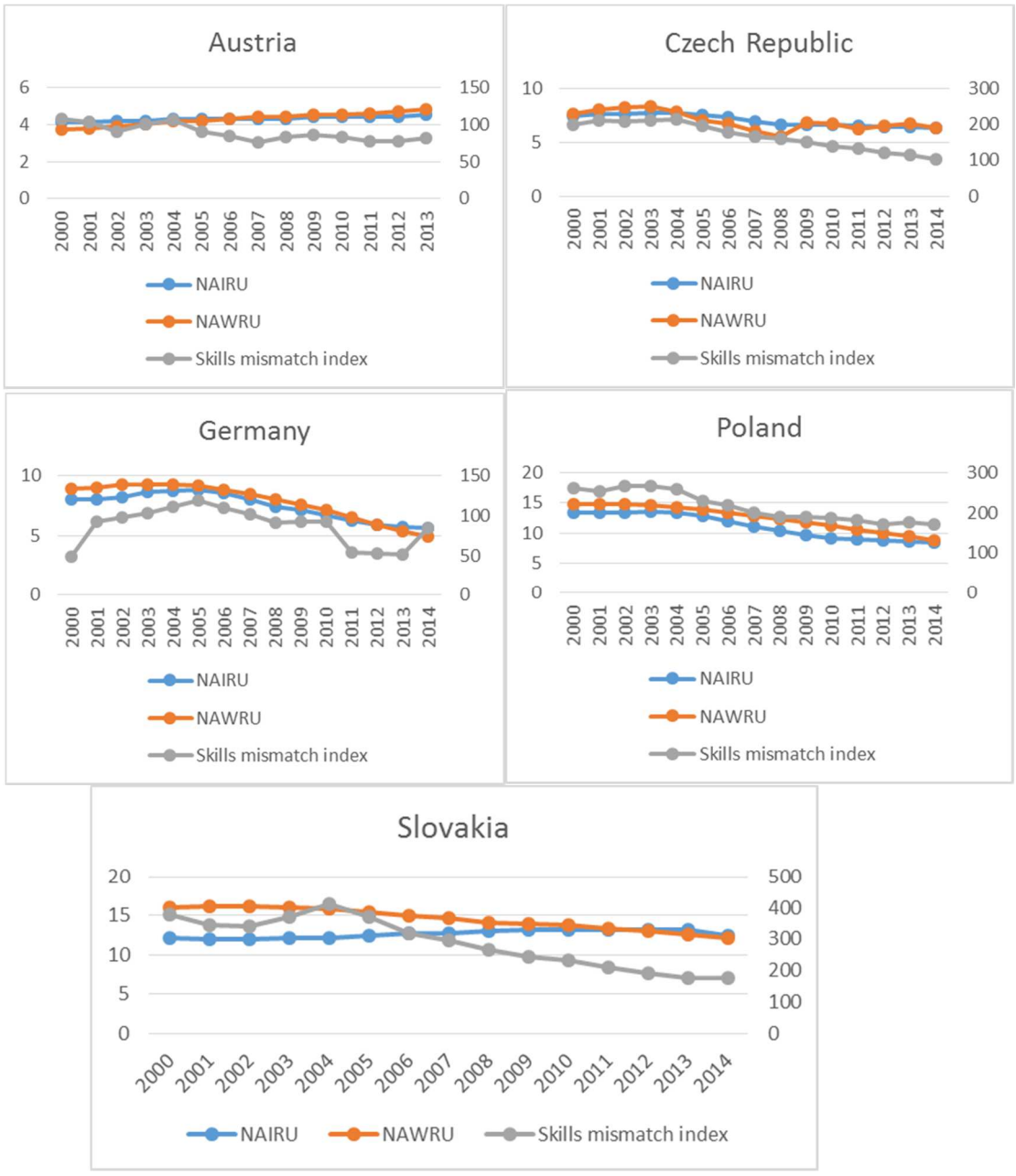
Table 15: Skills mismatch index, 2000-2014

Country	2000	2004	2008	2009	2012	2014
Austria	106.8	105.4	82.9	86.3	77.8	82.3
Czech Rep.	197.3	212.4	160.6	151.8	121.5	103.7
Germany	48.4	110.6	90.4	92.1	52.8	83.7
Poland	260.9	257.8	188.8	188.7	172.5	171.4
Slovakia	377.2	410.3	267.5	244.6	191.5	176.1

Source: Own computation on the basis of Eurostat database

When comparing the levels and developments of the skills mismatch index for the five analysed countries over the period 2000-2014 (Table 15) with the two measures of structural unemployment (Table 13), there can be detected strong correlation between skills mismatches and structural unemployment across these countries. As structural unemployment is closely related to long-term unemployment, the same conclusion can be made for long-term unemployment. However, correlation can be found also for development trends of skills mismatches and structural unemployment in individual countries as documented by Figure 10.

Figure 10: Relationship between structural unemployment (measured in % of total employment) **and skills mismatches** (measured by the skills mismatch index), **2000-2014**



Source: Own computation on the basis of Eurostat database

On the basis of this evidence, it appears that skills mismatches explain a large part of the differences in structural and long-term unemployment between Austria and Germany on the one hand and the Czech Republic, Poland and Slovakia on the other. The observed reduction of skills mismatches emerging after 2004 in all the five countries (in Austria only until 2007) also stands as one important factor behind a significant decline in structural and long-term unemployment in the Czech Republic, Germany and Poland, while in Slovakia other factors seem to counterbalance its impact so that structural and long-term unemployment more or less stagnated. In Austria the stagnation of skills mismatches since 2007, although on a rather low level, could be significant for the lack of any further reduction in structural and long-term unemployment.

5.2. Labour tax wedge

The labour tax wedge is often considered to be one of the main determinants of the size of structural and long-term unemployment (OECD, 2006; Gianella et al., 2009; or Orlandi, 2012) as its high level may discourage employers to create new jobs and unemployed persons to take up a job in the formal economy. However, the evidence suggests that this is not the case with respect to the five countries under consideration as demonstrated by Table 16.

The tax wedge is defined here as the sum of personal income tax and social security contributions paid by employers and workers. The table shows that the highest labour tax wedge exists in Germany, closely followed by Austria, while its level is significantly lower notably in Poland but also in Slovakia and the Czech Republic. As in the latter three countries structural and long-term unemployment were considerably higher than in the former two countries, it would rather point to a negative relationship between both unemployment indicators and the labour tax wedge. Labour tax also changed only marginally in all the five countries over the period 2000-2014 and these changes could have had hardly any impact on fluctuations in structural and long-term unemployment.

Table 16: Average labour tax wedge, 2000-2014 (% of gross earnings)

Country	2000	2004	2008	2009	2012	2014
Austria	47.3	48.3	49.0	48.0	48.8	49.4
Czech Rep.	42.6	43.5	43.4	42.0	42.5	42.6
Germany	52.9	52.2	51.3	50.8	49.6	49.3
Poland	38.2	38.4	34.7	34.1	35.5	35.6
Slovakia	41.9	42.2	38.8	37.7	39.6	41.2

Source: OECD database

The tax wedge includes three components charged to different actors: social security contributions paid by employers for their workers, social security contributions paid by workers themselves and the personal income tax paid also by workers. The rate of social security contributions paid by employers is one important factor influencing the decisions of employers whether or not to hire new employees or reduce their staffs or to replace labour with capital (machines). The average rates of employers' social security contributions are presented in Table 17.

Table 17: Average rates of employers' social security contribution (% of gross earnings)

Country	2000	2004	2008	2009	2012	2014
Austria	31.0	29.1	30.0	29.1	29.1	29.1
Czech Rep.	35.0	35.0	35.0	34.0	34.0	34.0
Germany	20.5	20.9	19.5	19.5	19.6	19.3
Poland	16.8	16.8	14.8	14.8	16.8	16.8
Slovakia	38.0	35.2	26.2	26.2	27.9	31.2

Source: OECD database

The table paints a rather different picture in comparison with the previous table on the average labour tax wedge. The lowest levels of employers' social security contributions existed in Poland and Germany, while Austria, Czech Republic and Slovakia had substantially higher rates, especially between 2000 and 2004. This would imply that the job creation stimuli in Germany and Poland were considerably higher in comparison with the

other three countries, which from the previous analysis seems to be the case in Germany but not in Poland. In Austria, Czech Republic, Germany and Poland the rates of employers' social security contributions were slightly cut (in Poland after their reduction during the economic slowdown between 2008 and 2011 they returned to the previous level) over the period 2000-2014, while only Slovakia recorded a significant reduction until 2011 but then a new rise by 5 percentage points followed. These trends would indicate that higher social security contributions paid by employers especially in the Czech Republic and Slovakia could play a role in the decisions of employers with regard to the hiring of new workers, in particular those whom they perceive as less productive. This may well contribute to an increased level of structural and long-term unemployment since 2009. Conversely, in Poland low employers' social security contributions could be one factor leading to the steep decline in structural and long-term unemployment before the economic slowdown in 2008 but thereafter, the converse was evidently not sufficient for stimulating higher job creation and recruitments.

The level of the personal income tax and social security contributions covered by workers is one reason behind the decision of jobless people whether or not to seek employment in the official economy. The decision, however, also depends on other factors, such as their family situation – whether they are married or not and have another income in the family, whether they do or do not have children, and how high is their reservation wage, i.e. the level of earnings below which they are not willing to accept a job. Table 18 presents data on the part of the tax wedge paid solely by workers that is charged to people occurring in five different model situations with regard to their marital and family status.

Table 18: Average rates of income tax and workers' social security contributions for workers in different family situations, 2001 and 2013 (% of gross earnings)

	2001						2013					
	I.	II.	III.	IV.	V.	VI.	I.	II.	III.	IV.	V.	VI.
Austria	31	26	24	30	29	28	34	29	26	32	32	29
Czech Rep.	22	21	15	16	19	18	23	19	6	6	16	13
Germany	42	36	18	21	33	28	39	35	18	21	31	27
Poland	28	26	24	26	27	26	25	24	18	18	21	20
Slovakia	21	19	15	18	19	18	23	19	12	11	18	16

Model situations

i. Single person without children earning 100% of the average wage
ii. Single person without children earning 67% of the average wage
iii. Lone parent with 2 children, earning 67% of the average wage
iv. One-earner married couple with 2 children, earning 100% of the average wage
v. Two-earner married couple with 2 children, one getting 100% of the average wage, the other earner 33% of the average wage
vi. Two-earner married couple with 2 children, one earner getting 100% of the average wage, the other earner 33% of the average wage

Source: OECD database

Table 18 shows that single persons without children earning the average wage were taxed from 23 per cent in the Czech Republic and Slovakia to 40 per cent of their gross earnings in Germany in 2014. Persons taking care of children enjoy tax reductions, which however are more significant only in the case of the Czech Republic, Germany and Slovakia. In these three countries lone parents with two children earning two-thirds of the average wage (a typical situation of lone mothers) as well as families with two children and one earner (typically the father, while the mother is at home, taking care of small children) receiving the average wage enjoy the largest tax reduction. Nevertheless, only in the Czech Republic and Slovakia their tax level seems to be low enough in order not to discourage their employment. In contrast, the taxation of lone parents and one-earner families with children

is rather high in Austria. In the case of model situation VI, typical for families with one partner working full-time and the other working part-time and taking care of children, their taxation is supportive in the Czech Republic and Germany, much less so in Slovakia and Poland and the least in Austria. It is also noteworthy that between 2000 and 2009 the tax rates substantially declined for persons with children in the Czech Republic and Slovakia and for all workers in Poland (but there also more for persons with children as until 2006 the taxation was surprisingly similar for all workers, regardless of their family situation, and could thus be the reason for the remarkably low labour force participation and high long-term unemployment at that time), while they remained stable for Germany. Afterwards the level of workers' taxation increased again in Slovakia for all categories of workers. In Austria taxation of workers was slightly higher in 2014 in comparison with 2000.

In sum, the workers' tax burden is lower for lone parents and families taking care of children and having low income but still may be high enough for lone parents and partners of the main earners (usually women) to decide not to return to (formal) employment as the difference between earnings gained at work and additional costs associated with employment (travel to work, childcare costs etc.) could be negligible (if positive at all). Only in the Czech Republic and Slovakia the level of taxes seems to be low enough so that it might not create such disincentives. Nevertheless, this is only one part of the story as the decision of people whether or not to seek employment depends not only on expected net income from work but also on the eligibility for and the level of social benefits.

5.3. Unemployment benefits and social assistance

The generosity of unemployment benefits and the whole welfare system, i.e. the eligibility for unemployment benefits, the unemployment benefit replacement rate (their proportion in comparison with the last earnings) and the length of their payment as well as the entitlement to social assistance and its level are important factors that either stimulate jobless persons to be active in job search and take up a new job as soon as possible or resign on job search and stay unemployed or inactive.

A comparison of the generosity of national unemployment benefit systems is provided in Table 19. It shows an overall tendency towards reduction of generosity of the national unemployment benefit systems in particular with regard to the duration of benefits, that were cut for all jobseekers in the Czech Republic, Poland and Slovakia and for older workers in Germany (but raised for older persons in the Czech Republic) and eligibility rules made stricter in Germany and Slovakia. In particular, in Poland the benefit system is very restrictive in comparison with the other four countries as the level of benefits is uniformly fixed for all eligible jobseekers regardless of their previous earnings and is very low, while eligibility conditions are very strict.

It is also important to add that in Austria and Germany unemployment benefit recipients after their expiry can get a means-tested unemployment assistance. In Austria unemployment assistance equals 92 per cent of the basic rate of unemployment benefits, if the unemployed person's income or his/her spouse's income do not exceed a certain limit, and is payable for one year but may be extended without limit upon application, provided that the qualifying conditions are fulfilled. In Germany the level of unemployment assistance was substantially reduced and merged with social assistance within the so-called Hartz reforms.

The national unemployment benefit systems in the Czech Republic, Poland and Slovakia are thus significantly less generous than those of Austria and Germany and seem not to create any disincentives for unemployed persons to seek new employment. While in Austria the system's generosity did not change over the analysed period, in Germany the system became more restrictive and did create additional incentives for jobless persons to take up new jobs.

Table 19: Comparison of national unemployment benefit systems and their changes, 2002 and 2010

Country	Year	Amount of benefit	Maximum duration	Eligibility conditions	Supplements
Austria	2002	55% of previous earnings	9 months (12 months for persons aged 50+)	12 months of employment in last 2 years	354 euro for each dependent
	2010	Without change	Without change	Without change	Without change
Czech Rep.	2002	50% of previous earnings in first 3 months, 40% afterwards	6 months	12 months of employment in last 3 years	Benefits increase in relation to the number and age of children
	2010	65% of pervious earnings in first 2 months, 45% afterwards	5 months (8 months for persons aged 50-54, 11 months for those aged 55+)	Without change	None
Germany	2002	60% of previous earnings	12 months (26 months for persons aged 52-56, 32 months for those aged 57+)	12 months of employment in last 3 years	Rates increase by 7 percentage points if dependent children
	2010	60% of previous earnings	12 months (18 months for persons aged 55+)	12 months of employment in last 2 years	Without change
Poland	2002	Fixed amount = 27.1% of national average wage (80% of this amount for persons employed less than 5 years, 120% for those employed over 20 years	12 months (18 months for persons aged 50+, those living in regions with high unemployment, and those with children below 15 and with unemployed spouse	12 months of employment in last 18 month	None
	2010	Fixed amount = 29.6% of national average wage for first 3 months, then cut to 23.2%, otherwise no change	6 months (18 months for persons aged 50+, those living in regions with high unemployment, and those with children below 15 and with unemployed spouse	Without change	None
Slovakia	2001	50% of previous earnings, after 3 months 45%	9 months	24 months of employment in last 3 years	None
	2010	50% of previous earnings	6 months	3 years of employment in last 4 years	None

Sources: OECD database supplemented by documents of national labour ministries

However, this picture may change if unemployment benefits are combined with social benefits and assistance, for which jobless persons and their families are eligible. OECD first calculated the net replacement rates, i.e. unemployment benefits or assistance supplemented by family benefits (but without childcare allowance), expressed as a percentage of previous net earnings, in the initial phase of unemployment while again taking into account several model situations with regard to the family situation of the jobless person. As a second variant, the OECD added to the above calculation of the net replacement rates also housing allowance and social assistance for those eligible (again excluding childcare allowance). Table 20 presents the results.

Table 20: Net unemployment benefit replacement rates at the initial phase of unemployment, 2001 and 2013 (% of previous net earnings)

Country	2001							2013						
	I	II	III	IV	V	VI	VII	I	II	III	IV	V	VI	VII
Austria	55	55	70	68	71	81	85	55	55	68	66	69	81	69
Czech Rep.	50	50	63	60	61	77	82	65	65	67	64	67	89	88
Germany	60	60	70	70	71	91	93	59	59	81	69	83	88	90
Poland	35	51	56	39	56	62	76	34	51	83	43	58	63	77
Slovakia	55	62	67	59	66	78	86	65	62	72	58	57	84	86
Unemployment benefits topped up by housing allowance and other social assistance														
Austria	55	55	72	68	83	81	85	55	55	68	66	98	81	69
Czech Rep.	52	59	75	86	92	74	79	71	77	77	66	74	89	88
Germany	60	61	80	76	81	91	93	59	59	89	73	92	88	90
Poland	51	75	69	53	77	66	80	50	74	93	56	70	66	81
Slovakia	55	67	91	87	109	78	86	65	62	72	58	57	84	86

Model situations:

i. Single person without children who earned 100% of the average wage in the last job
ii. Single person without children who earned 67% of the average wage in the last job
iii. Lone parent with 2 children who earned 67% of the average wage in the last job
iv. One-earner married couple with 2 children, the currently jobless breadwinner received 100% of the average wage in the last job
v. One-earner married couple with 2 children, the currently jobless breadwinner received 67% of the average wage in the last job
vi. Two-earner married couple with 2 children, the jobless partner earned 100% of the average wage in the last job, while the other employed partner gets 67% of the average wage
vii. Two-earner married couple with 2 children, the jobless partner earned 67% of the average wage in the last job, while the other employed partner receives 67% of the average wage

Source: OECD database

The net replacement rates differed substantially across countries in particular with regard to single persons without children (model situation I) and ranged from only 34 per cent of previous net earnings in Poland to 65 per cent in the Czech Republic and Slovakia. However when including also housing allowance and other social assistance, the net replacement rate for single childless persons in Poland increased to 50 per cent of their previous net earnings, i.e. it was still the lowest but already not very different from the other four countries. In the case of jobless persons with children the loss of income was smaller due to received family benefits. Nevertheless, countries vary with regard to their social policy directed to lone parents (supported mainly in Germany and Poland through higher benefits and social assistance and this support further increased over the analysed period, while on the contrary it declined in Slovakia). Interestingly, in the Czech Republic, Poland and Slovakia one-earner families got lower replacement (including social assistance) than two-earner families in case of the loss of job of the breadwinner in 2013 and their net income from unemployment benefits and social assistance declined considerably in comparison with 2001.

One can conclude that the loss of income after becoming jobless is considerable for childless persons and for all those with previous earnings above the average wage. However, for lone parents and married jobless persons with children who earned the average wage or less in their previous job and their employed partner gets a below-average wage (in Austria and Germany also for one-earner couples with children when the breadwinner had a below-average wage), this income loss is much smaller. And when this income loss is compared

with costs emerging when the person accepts new employment the low difference may act as a disincentive for re-employment.

A similar analysis is presented for persons in long-term unemployment (Table 21). The table first shows that the existing unemployment assistance schemes in Austria and Germany provide income support to long-term jobless persons who have no or low income, while childless long-term unemployed people get nothing in the Czech Republic, Poland and Slovakia. However, this lack of income support directly associated with unemployment in the latter three countries is at least partly compensated by family benefits for those with children and by means-tested housing allowance and social assistance for single persons, lone parents and low-income families. In 2001 in Slovakia for example, the total net income of long-term unemployed lone parents as well as families with a long-term jobless breadwinner and the other spouse inactive exceeded net earnings of these long-term unemployed persons in their last employment, which acted against their return to work.

Social security reforms undertaken in Slovakia and the Czech Republic in the 2000s reduced social benefits for long-term jobless persons and their families, in the case of Slovakia even substantially. Currently in all the five analysed countries total net income support for long-term jobless persons and their families, including all possible social welfare for which the person and his/her family are entitled to (but excluding childcare allowance) moves significantly below the level of earnings, which they received in their last employment, and therefore should not per se act as a disincentive for job search. The only exception are families with a sole breadwinner in long-term joblessness in Austria. Also the loss of previous below-average earnings for lone parents in Austria and one-earner jobless families in Germany and Poland is still relatively small.

Table 21: Net unemployment benefit replacement rates in long-term unemployment, 2001 and 2013 (% of previous net earnings)

Country	2001							2013						
	I	II	III	IV	V	VI	VII	I	II	III	IV	V	VI	VII
Austria	51	51	66	64	68	62	64	51	51	64	62	66	62	63
Czech Rep.	0	0	24	18	23	53	62	0	0	7	5	6	52	62
Germany	54	54	63	62	64	74	75	17	23	46	40	52	52	61
Poland	0	0	7	5	7	44	54	0	0	29	7	9	46	56
Slovakia	0	0	17	12	17	48	58	0	0	35	6	8	48	58
Unemployment benefits topped up by housing allowance and other social assistance														
Austria	51	55	72	64	83	62	64	51	54	84	76	98	62	63
Czech Rep.	36	53	75	74	92	59	68	37	49	65	59	76	52	62
Germany	54	58	80	65	81	74	75	35	49	73	62	80	54	63
Poland	32	46	66	69	89	50	61	22	33	66	64	81	52	64
Slovakia	53	77	105	101	121	54	66	18	26	36	40	56	48	58

Model situations:

i. Single person without children who earned 100% of the average wage in the last job
ii. Single person without children who earned 67% of the average wage in the last job
iii. Lone parent with 2 children who earned 67% of the average wage in the last job
iv. One-earner married couple with 2 children, the currently jobless breadwinner received 100% of the average wage in the last job
v. One-earner married couple with 2 children, the currently jobless breadwinner received 67% of the average wage in the last job
vi. Two-earner married couple with 2 children, the jobless partner earned 100% of the average wage in the last job, while the other employed partner gets 67% of the average wage
vii. Two-earner married couple with 2 children, the jobless partner earned 67% of the average wage in the last job, while the other employed partner receives 67% of the average wage

Source: OECD database

Finally, the OECD also calculates how much long-term jobless or inactive persons would lose on social benefits and income tax if they accept a full-time job (i.e. the extent to which taxes and lost benefits will reduce the financial gain from the new job). Table 22 presents several model situations with regard to the wage level in the new employment and family situation of the newly employed person and also reveals changes over the analysed period.

Table 22: Average amounts of taxes plus lost benefits for a transition to full-time employment of long-term unemployed or inactive persons who are not eligible for unemployment insurance but are entitled to social assistance, 2001 and 2013 (% of remuneration in a new full-time job)

Country	2001							2013						
	I	II	III	IV	V	VI		I	II	III	IV	V	VI	VII
Austria	59	67	74	70	84	33	28	60	67	85	81	98	36	31
Czech Rep.	51	63	70	74	90	42	43	56	63	70	65	79	33	33
Germany	62	66	75	68	75	51	51	61	66	76	70	81	46	46
Poland	53	62	69	76	90	41	44	44	51	69	71	81	40	44
Slovakia	63	82	105	101	125	35	40	20	29	2	36	43	27	25

Model situations:

i. Single person without children who earned 100% of the average wage in the last job
ii. Single person without children who earned 67% of the average wage in the last job
iii. Lone parent with 2 children who earned 67% of the average wage in the last job
iv. One-earner married couple with 2 children, the currently jobless breadwinner received 100% of the average wage in the last job
v. One-earner married couple with 2 children, the currently jobless breadwinner received 67% of the average wage in the last job
vi. Two-earner married couple with 2 children, the jobless partner earned 100% of the average wage in the last job, while the other employed partner gets 67% of the average wage
vii. Two-earner married couple with 2 children, the jobless partner earned 67% of the average wage in the last job, while the other employed partner receives 67% of the average wage

Source: OECD database

In the cross-country comparison of amounts "taxed away" when the long-term unemployed person returns to full-time employment Slovakia is an outstanding case. In Slovakia the combined income taxes and lost benefits exceeded the financial gains of lone parents if their earnings in a newly accepted job moved below the national average wage and for one-earner families even if the wage of the breadwinner reached the national average wage in 2001. This was clearly counterproductive for any efforts to return them to employment and stimulated long-term unemployment. Even for a single childless person with below-average earnings in the new job the gain from re-employment was small. In a far-reaching social reform introduced in 2003-2004 social benefits were dramatically cut but also taxes on below-average earnings for lone parents and one-earner families with children in order to stimulate their employment. In the Czech Republic, Germany and Poland the amounts "lost" when accepting employment were somewhat reduced during the analysed period for lone parents and couples with children, in Poland also for single childless persons, while in contrast in Austria they increased for lone parents and families with children. In 2013, the income of a one-earner family with children if the long-term unemployed breadwinner accepts a job with below-average remuneration did not increase in Austria, while in the Czech Republic, Germany and Poland it increased only by some 20 per cent.

In sum, the generosity of national unemployment benefit systems is low, in particular in the Czech Republic, Poland and Slovakia. Over the analysed period it also somewhat declined in the Czech Republic, Germany and Poland, and considerably so in Slovakia. While the initial replacement rates are relatively advantageous for low-income families with children, prolonged joblessness already means a significant decline of income of the unemployed person and his/her family, especially in the three new EU member countries, which do not have any unemployment assistance system for long-term jobless persons. It should also be taken into consideration that the share of unemployment benefit recipients in the registered unemployment stock moved only between 20 and 35 per cent in the Czech Republic, between 13 and 18 per cent in Poland and around 10 per cent in Slovakia during the analysed period (solely in 2009 this proportion temporarily increased to, respectively 40.5, 22.1 and 14.8 per cent in these three countries and then declined again), while well over 90 per cent of registered unemployed persons benefitted from income support in unemployment in Austria and Germany (this support combined unemployment benefits and

assistance). However, when social benefits and assistance for which people and families with low incomes are eligible for are taken into account, total income support of long-term jobless persons and other persons not or no longer eligible for unemployment benefits increases also in the Czech Republic and Poland to percentages already closer to those in Austria and Germany, only Slovakia keeps significantly lower benefit levels.

While the net replacement rates in long-term unemployment are rather low, for some population groups, such as lone parents and one-earner families with children where the long-term jobless breadwinner had low wage in his/her last job, approach that wage level and thus do not stimulate the jobless person to seek new employment. Moreover, the decision of such a person whether to take a job or not depends also on the level of offered wage, its taxation and lost benefits and here the amount "taxed away" for lone parents and one-earner families with children where the long-term unemployed person can expect only below-average wage is so high in all but one country – Slovakia – that it clearly discourages them from re-employment.

Overall, in the five countries, the current level of unemployment benefits and social assistance does not, in general, act as a trap for benefit recipients in terms of hindering them to return to employment (with the exception of the above mentioned groups). As such, it does not play any role in explaining the difference in the level of structural and long-term unemployment between Austria and Germany on the one hand and the Czech Republic, Poland and Slovakia on the other. In fact, Slovakia transformed its tax and benefit system from a relatively generous one for low-income lone parents and families with children, in force up to 2003-2004, into a restrictive one but with low taxes stimulating re-employment of such persons. This could explain a large decline in structural and long-term unemployment between 2004 and 2008 but does not seem to have any impact after 2009. On the contrary, long-term unemployment incidence in this country is one of the highest in Europe and therefore the causes should be sought in other factors.

5.4. Employment protection legislation and the incidence of temporary contracts

High protection of employees holding labour contracts without limit of time (regular contracts) against their termination has often been criticized as detrimental for a smooth adjustment of enterprises to changing market conditions and as the reason for reluctance on the part of employers to recruit new employees. Many economists blamed higher protection of employees for larger unemployment, in particular in connection with comparisons of labour market performance in Europe with that in the U.S. Although discussions on the impact of labour market rigidities on employment and unemployment levels have brought inconclusive results (see e.g. OECD, 1999; Cazes and Nesporova, 2003; and Cazes et al., 2012), the prevailing view has led to a gradual weakening of employment protection legislation (i.e. legal and administrative rules for concluding and terminating labour contracts) with regard to regular contracts. It also contributed to more liberal regulation of fixed-term contracts to enable employers to hire temporary employees for non-core activities more easily. Strict regulation of contracts without limit of time is assumed by some economists to result in higher total unemployment and within it in elevated levels of structural and long-term unemployment. However, very liberal regulation of temporary contracts may encourage their increasing incidence, which may also cause larger structural and long-term joblessness. The reason is that temporary workers are the first to be laid off when the enterprise gets into economic problems and as they generally have much less access to on-the-job training, their re-hiring may be problematic as their skills may become obsolete in the meantime.

The OECD has developed a methodology for evaluating the strictness of regulation of contracts without limit of time, which assesses the restrictiveness of procedures (such as notification of dismissal, length of the notice period, definition of justified or unfair dismissal and of collective dismissal etc.) and the level of costs (severance pay, compensation for unfair dismissal etc.) associated with termination of employment for individual workers and groups of workers possessing such contracts. This methodology also assesses the restrictiveness of procedures regulating hiring of workers on fixed-term contracts (such as conditions for the legal use of fixed-term contracts, maximum number of successive fixed-term contracts, etc.) and temporary work agency contracts (types of work allowed to be performed by temporary work agencies, etc.). Currently employment protection legislation (EPL) indices are constructed separately for regular contracts (one index measures the strictness of legislation concerning individual contracts and the other one the strictness of additional procedures for collective dismissals, while a summary index combines them by giving the 5/7-th weight to the index for individual dismissals and the 2/7-th weight to the index for collective dismissals) and for temporary contracts (the index assesses the regulation of hiring on fixed-term contracts and on temporary work agency contracts). EPL indices range from 0 for fully liberal regulations to 6 signifying very strict regulations. Table 23 presents EPL indices for the five analysed countries for selected years in the period 2000-2013 (data for 2014 are not yet available).

Table 23: EPL indices for regular contracts, selected years

Country	Individual dismissals					Individual and collective dismissals				
	2000	2004	2009	2012	2013	2000	2004	2009	2012	2013
Austria	2.75	2.37	2.37	2.37	2.37	2.89	2.62	2.62	2.62	2.62
Czech Rep.	3.31	3.31	3.05	2.92	2.92	2.97	2.97	2.79	2.70	2.70
Germany	2.68	2.68	2.68	2.68	2.68	2.95	2.95	2.95	2.95	2.95
Poland	2.23	2.23	2.23	2.23	2.23	2.56	2.41	2.41	2.41	2.41
Slovakia	2.47	2.22	2.22	1.71	1.84	2.91	2.66	2.66	2.19	2.28

Source: OECD database

Table 23 shows that, with a certain exception of the Czech Republic concerning the regulation of individual dismissals until 2011, EPL indices for regular contracts moved below 3, i.e. workers on regular contracts were not excessively protected. And, as mentioned above, in four out of the five countries (Austria, Czech Republic, Poland and Slovakia) this protection declined over the analysed period. Poland had the most liberal regulation of both individual and collective dismissals during the whole period, while Slovakia started with a slightly higher regulation but reduced it substantially before 2012 and again tightened it slightly in 2013. If the hypothesis concerning the close relationship between the strictness of regulation of contracts without limit of time and higher structural and long-term unemployment were correct, Slovakia and Poland should have been better off with regard to unemployment than the Czech Republic and Germany, but in reality it is the opposite. While liberalization of EPL in Austria, Poland and Slovakia in 2003-2004 coincided with declines in structural and long-term unemployment, economic recession brought about a new rise in structural and long-term unemployment without any modification of EPL.

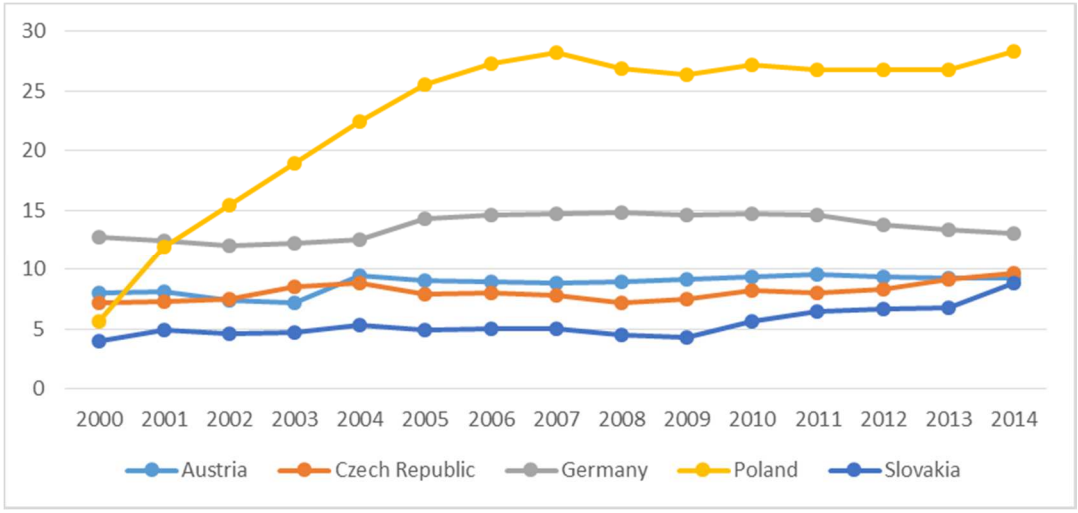
Table 24 documents the liberal nature of regulation of temporary contracts but also that it became stricter over the analysed period, with the exception of Germany between 2004 and 2012. The most liberal procedures concerning temporary contracts existed in the Czech Republic until 2004, in Poland until 2003 and in Slovakia between 2004 and 2007. The latter two countries then strengthened regulation of temporary contracts more than the other three countries.

Table 24: EPL index for temporary contracts, selected years

	2000	2004	2009	2012	2013
Austria	1.31	1.31	1.31	1.31	1.31
Czech Rep.	0.5	0.5	1.13	1.44	1.44
Germany	2.0	1.0	1.0	1.0	1.13
Poland	0.75	1.75	1.75	1.75	1.75
Slovakia	1.38	0.63	1.63	1.63	1.75

Figure 11 depicts a sharp rise in the incidence of temporary contracts in Poland between 2000 and 2007 so that in 2007 almost one in three workers held temporary contracts there. While that development could be attributed to very liberal regulation of this type of contract in the beginning of the 2000s, the share of temporary contracts further increased despite more restrictions on their use introduced in 2004. As economic growth was very high at that time, temporary workers after termination of their contracts could probably easily get re-hired. However, when Poland's economic growth slowed down in 2008 some temporary employees lost their jobs but the incidence of temporary employment stabilized on a slightly lower level until 2013 and then grew again in connection with a stronger recovery. In the case of Poland some temporary workers laid off during the period of economic slowdown could end up in long-term unemployment.

Figure 11: Incidence of temporary contracts, 2000-2014 (% of total employment)



Source: OECD database

Germany recorded the second highest share of temporary workers in total employment, while in the other three countries – Austria, Czech Republic and Slovakia – their proportion moved below 10 per cent. In Germany and Slovakia an increase in the use of temporary contracts around 2004 could be attributed to their further deregulation, while conversely their decline in the Czech Republic seems to be the consequence of their stricter regulation. Nevertheless, Austria did not make any changes in employment protection legislation with regard to temporary contracts and still their share also increased in 2004, which might be explained by the economic boom when employers needed more workers but because of uncertainty about further development they hired them only on a temporary basis.

The use of temporary contracts stabilized in Austria, Czech Republic and Germany after 2005 and does not seem to have any significant impact on the level of structural and long-term unemployment. In contrast, in Slovakia their share started increasing after the

crisis, which could reflect stronger uncertainties for enterprises in the situation of rather weak economic recovery.

To conclude, the analysis has given little evidence (if any) that employment protection legislation could have caused larger changes in structural and long-term unemployment in Austria, Czech Republic or Germany. Only in Poland the high incidence of temporary employment could appear detrimental during the economic slowdown between 2009 and 2013 when some fixed-term workers after termination of their contracts might have had difficulties in finding new employment and therefore contributed to higher long-term joblessness.

5.5. Active labour market policies

Active labour market policies are confirmed by many quantitative analyses of unemployment as a statistically significant factor contributing to the reduction of unemployment but its weight is usually estimated as small in comparison with other factors such as labour tax wedge or the generosity of unemployment benefit systems (Orlandi, 2011; Cazes and Nesporova, 2003 and 2007). So what is their impact in the five analysed countries?

Table 25 provides a cross-country comparison of expenditures on active labour market policies over the period 2004-2013. The expenditures are separately expressed for labour market services, i.e. the costs of running public employment services and providing job matching, counselling and activation of jobseekers (plus administering income support in unemployment as the data do not allow to separate these activities; however, it does not matter much as the activation strategy is based on close coordination of active labour market policies with income support in unemployment), and for proper active labour market policies. For easier comparability the expenditures are expressed as a percentage of their respective GDPs.

Table 25: Expenditure on labour market services (LMS) and active labour market policies (ALMP), 2004-2013 (% of national GDP)

Country	2004		2008		2009		2013	
	LMS	ALMP	LMS	ALMP	LMS	ALMP	LMS	ALMP
Austria	0.17	0.43	0.16	0.50	0.18	0.64	0.17	0.59
Czech Rep.	0.11	0.12	0.11	0.11	0.12	0.15	0.10	0.19
Germany	0.22	0.91	0.33	0.55	0.38	0.62	0.35	0.32
Poland*	0.07	0.36	0.09	0.47	0.10	0.52	0.08	0.41
Slovakia	0.09	0.07	0.11	0.15	0.10	0.15	0.05	0.17

*2005 instead of 2004
Source: Eurostat database

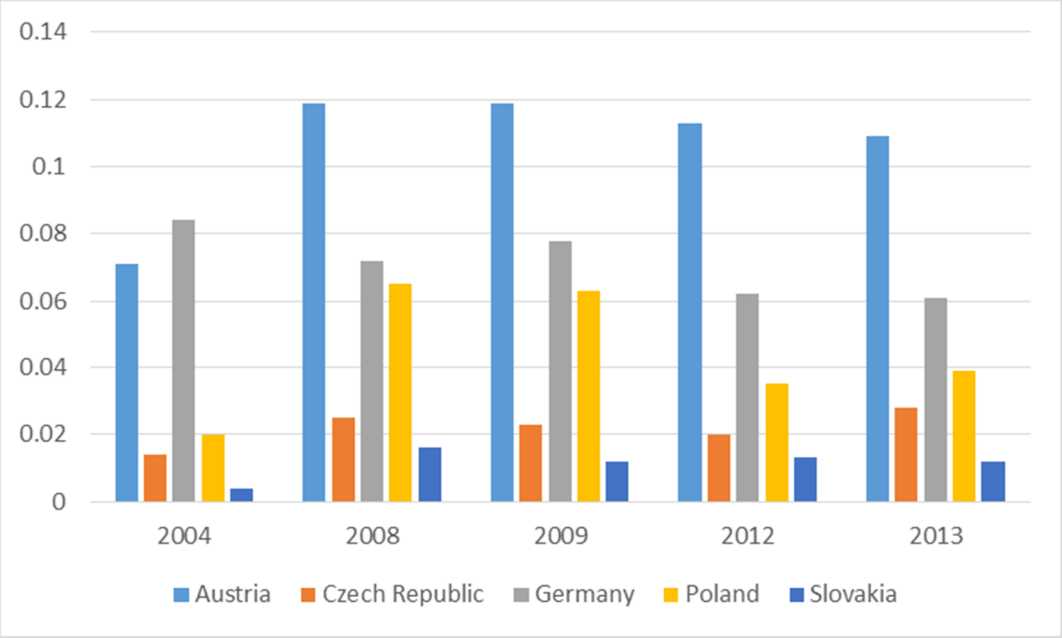
The cross-country comparison first shows that Germany and Austria spend significantly more funds on labour market services than the Czech Republic, Poland and Slovakia. EC (2015) also points to large differences in the share of public employment services' staff directly serving jobseekers and employers among these two subgroups of countries. While this share equals 83 per cent in Germany, in Poland it is only 44 per cent and in the Czech Republic and Slovakia 39 per cent, while the rest of staff are dealing with administrative and other issues (data on Austria are not available). The average caseload for employment counsellors dealing with registered jobseekers thus reaches 329 persons in the Czech Republic, 427 persons in Poland and in Slovakia even 1109, while in Germany only

113 jobseekers. The precise figure for Austria has not been published but indirect evidence suggests that it should be similar to Germany.

The differences in funding are even more profound with regard to active labour market policies, with Germany, Austria and Poland spending substantially more on active measures and the Czech Republic and Slovakia allocating much less. In this respect the extensive allocation in Germany in 2004 is connected not only with the high unemployment rate at that time but also with the gradual introduction of the labour market reforms within which income support conditions were tightened in exchange for more intensive job placement support by public employment services (the counsellor/client ratio was reduced) and for a larger access to active measures. Spending on ALMP grew further in Austria, Poland and Slovakia, although in the last country its level still remained fairly low, while it declined in Germany in connection with cuts in aggregate unemployment. In the Czech Republic the expenditure stagnated. The table also clearly shows a considerable increase in spending on ALMPs in all countries - except for Slovakia in 2009 – designed to moderate the surge in unemployment and preserve employment during the crisis.

The levels of allocation on ALMPs should be related to the unemployment rates and Figure 12 examines whether it is so. The graph shows that high expenditure on ALMP is certainly one important factor behind the remarkably low and stable level of total, structural and long-term unemployment in Austria. Also high ALMP spending in Germany and its steep increase between 2005 and 2008 in Poland was one of the factors leading to significant cuts in aggregate, structural and long-term unemployment in both countries. After 2009 Poland reduced its ALMP expenditure, which probably played a role in the new unemployment upswing. In the Czech Republic a further decline in the already low spending on ALMP in the period of prolonged recession also resulted in a new rise in structural and long-term unemployment. Slovakia continued to allocate low levels of funding to active labour market policies, despite the high unemployment rate, which was clearly a contributory factor behind its high structural and long-term joblessness rates.

Figure 12: Expenditure on ALMP as % of GDP per one per cent of the unemployment rate, 2004-2013



Poland: 2005 instead of 2004

Source: Own calculation using data from Eurostat database

Table 26 provides data on the proportion of ALMP participants among registered jobless persons as in most countries registration at the public employment service is the

condition for the provision of labour market measures. The table confirms that prior to the economic crisis all countries strengthened the provision of ALMP to registered unemployed persons, which stimulated their higher transition to employment. Austria was outstanding in this respect as its already large proportion of labour market policy participants among jobless persons almost doubled. Poland started from a much lower level but even tripled its share of ALMP participants in registered unemployment (in absolute figures it almost doubled the number of ALMP beneficiaries within just three years) and overtook Germany that until then had held the second highest proportion. Surprisingly, in Slovakia almost one in three registered jobless persons benefitted from active labour market policies in 2004 and their weight increased to almost 40 per cent in 2008. In 2009 the large inflow of laid-off workers into unemployment reduced the proportion of ALMP beneficiaries but in the case of the Czech Republic and Slovakia also their absolute numbers declined, in Slovakia even by one-third. However, it is also important to note that the steep rise of the number of ALMP participants in Germany in 2009 was caused by the provision of training to workers in short-time work schemes, massively used in manufacturing as an anti-crisis measure (also Austria, Poland and the Czech Republic made use of such a scheme, although to a much smaller extent), so this figure is not comparable with other countries. Since 2010 the provision of ALMP to registered jobless persons dropped in all the five countries, most steeply in Poland and Slovakia. Austria and Germany still record significantly higher proportions of ALMP beneficiaries among registered unemployed persons, which may partially explain their low levels of structural and long-term unemployment, in comparison with the other three countries.

Table 26: ALMP participants for 100 registered unemployed persons

Country	2004	2008	2009	2012	2013
Austria	49.1	84.2	79.8	61.6	58.5
Czech Rep.	11.0	16.6	11.2	10.6	9.9
Germany	37.7	48.8	79.8	48.6	44.4
Poland*	17.8	57.1	50.5	27.4	25.0
Slovakia	29.7	39.1	18.8	18.6	16.0

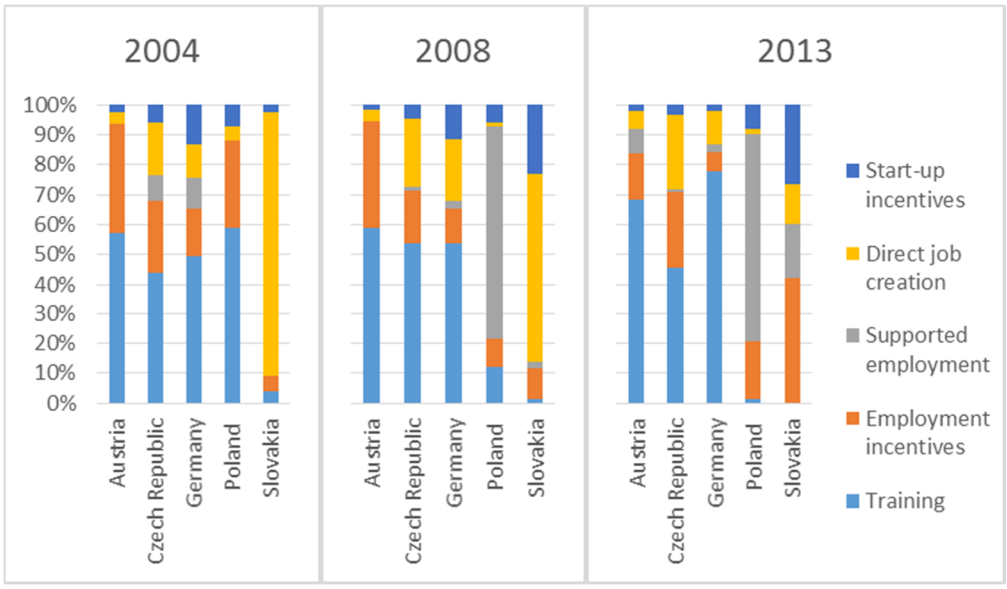
Poland: 2005 instead of 2004

Source: Own calculation using data from the Eurostat database

While the amount of allocations to ALMPs and the proportion of ALMP beneficiaries in total unemployment are important pieces of information for assessing the possible impact of these policies on the unemployment level, similarly useful is information on the efficiency of these policies.[4] One determinant of their efficiency is to what extent ALMPs address the needs and employment barriers of jobless persons. The distribution of ALMP participants by type of policy is depicted in Figure 13. It shows that in 2004 training used to be the most frequent labour market measure offered to jobless persons in all the countries with the exception of Slovakia. However, while the share of trainees in all ALMP beneficiaries further increased in Austria and Germany and until 2008 also the in the Czech Republic, in Poland and Slovakia it declined substantially. Given the high representation of low-skilled persons in the unemployment pool and widespread skills mismatches as documented earlier, the low availability of training in Poland and Slovakia and also in the Czech Republic (as there the absolute number of jobless persons undergoing training is small) is alarming.

[4] Data on the job placement rates of ALMP beneficiaries are unfortunately not available

Figure 13: Distribution of ALMP beneficiaries by type of policy (in %)



Poland: 2005 instead of 20014

Source: Own calculation using data from the Eurostat database, data from the Czech Republic are from the Ministry of Labour and Social Affairs

In Slovakia the most widespread programme until 2008 used to be direct job creation (public works schemes) provided mostly to long-term jobless persons. While on the one hand it helped to some extent restore working habits of long-term unemployed persons, it did not give any higher chance for their re-employment as only a tiny percentage of public works participants could find regular employment after their completion (Auer et al., 2005). Although in Slovakia the participation in public works (32 hours per month in work for the municipality) is mandatory for receiving some social benefits, the number of public works' participants declined over the period under review as the public employment service prioritized other programmes. In Germany this scheme (so called one euro jobs providing one euro per hour above unemployment assistance) expanded between 2005 and 2010 and was used also mainly for long-term jobseekers but after 2010 the number of participants sharply declined. The Czech Republic applied public works also as a standard measure for long-term jobseekers. For a few years around 2010 the participation was made mandatory for receiving any social assistance but the Supreme Court ruled it unlawful. In the later period under review, participation in such schemes increased in Austria and the Czech Republic.

Employment incentives, provided to employers as a stimulus for recruiting unemployed persons (e.g. temporary employment/wage subsidies or reduced social security contributions) and to workers to take-up (usually low-paid) jobs (e.g. recruitment subsidies, temporary exemption from social security contributions) used to be the second most important ALMP in Austria, the Czech Republic, Germany and Poland in 2004. Since then their importance declined in Austria and Germany but increased in Slovakia and after a temporary reduction also again in Poland. While their advantage is that they directly promote employment of unemployed persons in regular jobs, according to some assessments (e.g. OECD, 2014a, OECD, 2014b) their targeting needs to be improved as some beneficiaries could find employment even without this intervention while many hard-to-place jobseekers are not included in such programmes. However, another assessment (EC, 2015) found that in Slovakia 53.5 per cent of employment incentive participants were long-term unemployed, while in Germany their share was only 7.9 per cent in 2015.

Supported employment and rehabilitation include a wide range of measures providing more sustainable support to employment of youth, older workers, persons with disabilities, long-term jobseekers and other groups with more difficult access to (re-)employment. Sometimes it is problematic to distinguish whether the concrete programme should be classified as supported employment or employment incentives and therefore the high share of this type of ALMP in Poland against its low proportion in other countries may be a bit misleading. In Poland supported employment includes measures, such as on-the-job training of youth, internships etc., while in some countries, such as the Czech Republic, supported employment is now used only for persons with disabilities, while earlier schemes providing internships and subsidized jobs for school leavers were discontinued. In Slovakia supported employment is now more applied for long-term jobseekers.

However, the ALMP figures for Germany do not include one important policy introduced by the Hartz labour market reforms, namely the creation of so-called mini-jobs (few-hour jobs with earnings not exceeding currently Euro 450 per month and with much reduced social security contributions) and midi-jobs (part-time jobs with earnings below currently Euro 850 per month (figures as at 2015), and with regressively reduced social security contributions when earnings are growing to the maximum limit). The incidence of mini-jobs and midi-jobs is also stimulated by the joint taxation of married couples in Germany. Their establishment led to an increase in total employment as some activities, such as domestic services that used to be carried out informally, have been formalized, and because inactive or jobless persons with some employment obstacles (mainly women with smaller children) could join the labour market through such jobs (see Gaskarth, 2014; OECD, 2012). Critics of this policy, however, stress that it has contributed to the creation of a broad low-wage sector within the labour market and to increasing wage inequalities, poverty and social disparity (Henning, 2015).

Start-up incentives are usually offered to a rather limited number of jobseekers as their success depends on the availability of entrepreneurial skills of the participants (Martin and Grubb, 2001). Among the five countries only Germany and since 2008 also Slovakia had higher shares of registered jobseekers benefitting from these schemes. In Germany the Ich-AG [Me-Inc.] scheme was introduced as another part of the Hartz labour market reforms for stimulating self-employment, particularly of women (see Gaskarth, 2014). It became widespread in the mid-2000s (in 2006 over 400,000 persons took part in the scheme) but after 2010 the number of beneficiaries diminished very fast. In contrast, in Slovakia the number of participants in the start-up programme increased ten times in 2011 as compared to 2004 but the results in terms of sustainability of their business activities were not satisfactory. Since 2013 the eligibility criteria have been restricted and the number of participants has gone down (OECD, 2014b).

To conclude, the five countries differ a lot with regard to the level of allocations on labour market services and active labour market policies measured as a GDP percentage, with Austria and Germany spending significantly more than the Czech Republic, Poland and Slovakia. Public employment services in Austria and Germany are not only better equipped financially and personally but can also offer personalized and better tailored counselling and other support to their clients – jobseekers and employers, due to a lower caseload of their employment counsellors. Further, Austria and Germany have significantly higher shares of active labour market participants among registered unemployed persons than the Czech Republic and Slovakia. In Poland their proportion rose and got close to Austria and Germany between 2007 and 2009 but then it declined rather substantially.

The examination of the structure of ALMP beneficiaries by type of policy revealed that despite widespread skills mismatches in the Czech Republic, Poland and Slovakia, initially high shares of training participants in all countries (except for Slovakia) dropped in Poland and Slovakia significantly, while they further increased in Austria and Germany. The seemingly persistent large proportion of jobless persons attending training in the Czech

Republic hides their limited absolute number due to the low total share of ALMP beneficiaries in registered unemployment. In Slovakia, the percentage of ALMP beneficiaries was also rather high in the 2000s but as most of them took part in public works it did not probably help them much in return to regular employment. Poland and recently also Slovakia rely more on employment incentives and supported employment but the targeting of these measures needs to be further improved. However, Slovakia now tries hard to place more long-term jobless persons in such schemes, which integrate them into the labour market, although the question remains how many of them will then transit to non-subsidized jobs if follow-up support is rarely available. Germany has also increased employment and cut unemployment through the massive use of subsidized mini-jobs and midi-jobs.

Active labour market policies thus seem to contribute significantly to the reduction of structural and long-term unemployment in Austria and Germany, while their impact in this regard was considerable also in Poland between 2007 and 2009 but then it declined. In the Czech Republic and especially in Slovakia the allocations to ALMPs are insufficient for reducing structural and long-term unemployment, although in both countries the situation appeared to be getting better.

6. Conclusions

Research undertaken in this study concentrated on the reasons why the five Central European countries closely interrelated through production chains and trade and with similar economic structures, industrial traditions and culture have such a large diversity in the level and trends of total and long-term unemployment. A comparative analysis revealed several striking differences with regard to their labour market performance. Over the analysed period 2000-2014 Austrian and German employers were able to create more jobs (though many of these jobs were part-time) than the Czech, Polish and Slovak ones, and economic activity and wage employment were not only higher but also increased faster than in the three latter countries, where employment growth concentrated in the segment of own-account workers. Austria also managed to maintain low levels of unemployment and Germany to continue to reduce joblessness even in the post-crisis period (when most advanced countries recorded a new increase in unemployment). Conversely, in particular Poland and Slovakia, but also the Czech Republic, made significant progress in diminishing unemployment before economic recession but thereafter, faced once again an expansion in unemployment. The main gap concerns young people as their economic activity and employment rates are substantially higher and unemployment rates lower in Austria and Germany (partly due to their dual vocational education and training systems) in comparison with the three other countries where young people encounter considerable difficulties in their transition from school to work.

The incidence of long-term joblessness also differs a lot across the five countries as in Austria one in four jobseekers are unemployed for more than one year and this share was fairly stable over the analysed period, while in Slovakia long-term joblessness currently hits almost three in four jobseekers, when in 2000 this proportion was "only" one in two. One factor contributing to this very large incidence of long-term unemployment in Slovakia is the relatively numerous Roma minority, which faces extremely high and prolonged unemployment.

Estimations of the structural part of unemployment, identified with the "natural rate of unemployment" and using the OECD (NAIRU) and the EC (NAWRU) methodology as well as the Beveridge curve, also pointed to significant variations in structural unemployment and its development across the five countries. Austria sustained low levels of structural unemployment, although with a slight upward tendency. The Czech Republic and Germany initially had similar levels and development of structural unemployment until 2008 but Germany continued reducing it systematically after the crisis, while in the Czech Republic structural unemployment rose somewhat again in 2009 and stabilized at this higher level. Poland experienced a significant reduction of structural unemployment prior to the crisis and then its stagnation. In Slovakia both measures of structural unemployment provide different results until 2009: structural unemployment had an increasing tendency according to NAIRU, while NAWRU suggested a slightly decreasing trend. From 2010 both methods point to stagnation in structural unemployment. However, its level is substantially higher in Poland and Slovakia in comparison with Austria, Germany and the Czech Republic. The analysis also confirmed a strong correlation between structural unemployment and the long-term unemployment trend (as long-term unemployment is also influenced by the economic cycle, while structural unemployment by definition not).

In order to find out the reasons for differences in the level and developments of structural and long-term unemployment across the five countries, the impact of several possible determinants was studied as suggested by the literature: skills mismatches, labour tax wedge, generosity of unemployment benefits and social benefits/assistance, restrictiveness of employment protection legislation, the incidence of temporary contracts, and the coverage of jobseekers by active labour market policies and efficiency of such policies with regard to the needs of unemployed persons.

The analysis revealed higher skills mismatches in the Czech Republic but even more profound mismatches in Poland and Slovakia in comparison with Austria and Germany, which could explain a large part of the above mentioned differences. It also discovered the reduction of skills mismatches in the Czech Republic, Germany and Poland over the analysed period (Austria maintained a low level), which might contribute to the observed decline in their structural and long-term unemployment, while in Slovakia other factors seem to counterbalance it.

The labour tax wedge does not seem to play a big role in explaining the cross-country variance in structural and long-term unemployment across the five countries. Austria and Germany impose the highest taxation on labour but still achieve larger job generation than the other three countries. However, job creation is mainly influenced by the level of social security contributions paid by employers and it seems that the high rates in the Czech Republic and Slovakia could indeed have a negative impact on the recruitment decisions of employers and thus lead to higher structural and long-term unemployment especially after the economic recession. In contrast, the lowest labour tax wedge as well as the low rates of employers' social security contributions could contribute to a steep reduction in structural and long-term unemployment in Poland before 2008 but they did not stimulate larger recruitment of workers during and after the economic slowdown.

The level of unemployment benefits is particularly low in Poland and is paid for a short time as is the case in the Czech Republic and Slovakia. In Austria and Germany laid-off workers are better off in terms of income support but while after their expiry they could get means-tested unemployment assistance in both countries, its level has been much reduced by the Hartz labour market reforms in Germany. Nevertheless, these cross-country differences in generosity of national social systems diminish significantly if unemployment benefits are combined with other social benefits and assistance, for which people with no or low income are eligible, especially after their unemployment benefits expire (or if they get no unemployment benefits). Calculations show that while for most people the cumulative level of benefits is not high enough to act as a disincentive for job search, for certain population groups, such as lone parents and one-earner families with children, the return to full-time but low-paid employment would not mean any significant increase in their family income. Only Slovakia radically cuts social benefits with the aim to stimulate return to employment for long-term unemployed and inactive persons, including lone parents and one-earner families with children, but seemingly without much effect on their re-employment.

In Austria, Czech Republic, Germany and Poland no evidence was found that employment protection legislation was especially restrictive in terms of discourage employers from recruiting workers on regular contracts and of contributing to higher structural and long-term unemployment. In contrast, Slovakia has liberalized the regulation of such contracts rather significantly but this did not apparently result in higher job creation, hiring of additional workers and reduction in unemployment. Regulation of temporary contracts was initially very liberal and then made a bit stricter in all but one country – Germany. Nevertheless, the share of temporary contracts remained limited everywhere except for Poland where the non-renewal of some of these contracts during the economic slowdown may well have contributed to an increase in the incidence of long-term unemployment in Poland after 2008.

Active labour market policies seem to have had a rather important impact on the observed differences in the level and development of total, structural and long-term unemployment between Austria and Germany on the one hand and the Czech Republic, Poland and Slovakia on the other for three reasons. First, public employment services in Austria and Germany are better equipped with staff and financial resources and are able to

provide more personalized and intensive support to their clients due to a significantly lower caseload of their employment counsellors. Second, the allocation of funds for active labour market measures is substantially larger, which is also reflected in much higher shares of participants in these measures among registered unemployed persons. Third, low-skilled people are overrepresented in total and especially long-term unemployment everywhere. However, while Austria and Germany pay high attention to training of jobseekers, the other three countries provide training to rather limited numbers of unemployed persons, despite higher observed skills mismatches. Poland and Slovakia make use of subsidized employment but assessments point to some problems in their targeting and transition of beneficiaries to non-subsidized jobs.

Bibliography

Auer, P., Efendioglu, U. and Leschke, J. 2005. *Active labour market policies around the world. Coping with the consequences of globalization*. International Labour Office, Geneva.

Ball, L. (2009). *Hysteresis in unemployment: Old and new evidence*. NBER Working Paper No. 14818. National Bureau of Economic Research, Cambridge.

Bassanini, A. and Duval, R. (2006). *The determinants of unemployment across OECD countries: Reassessing the role of policies and institutions*. OECD Economic Study No. 42, 2006/1. Organization for Economic Cooperation and Development, Paris.

Blanchard, O. and Wolfers, J. 2000. *The role of shocks and institutions in the rise of European unemployment: The aggregate evidence*. The Economic Journal, volume 110.

Cazes, S., Khatiwada, S. and Malo, M. 2012. *Employment protection and collective bargaining: Beyond the deregulation agenda.* Employment Working Paper No.133, International Labour Office, Geneva.

Cazes, S. and Nesporova, A. 2003. *Labour markets in transition: Balancing flexibility and security in Central and Eastern Europe*. International Labour Office, Geneva.

Cazes, S. and Nesporova, A. (eds.) 2007. *Flexicurity: A relevant approach in Central and Eastern Europe*. International Labour Office, Geneva.

EC, 2012. *Long-term unemployment 2012.* European Employment Observatory Review. European Commission, Brussels.

EC, 2015. Commission Staff Working Document: *Country report Czech Republic 2015.* European Commission, Brussels.

Estevao, M. and Tsounta, E. 2011. *Has the Great Recession raised the U.S. structural unemployment?* IMF Working Paper 11/105, International Monetary Fund, Washington.

Friedman, M. 1968. *The role of monetary policy*. American Economic Review.

Gaskarth, G. 2014. *The Hartz Reforms and their lessons for the UK*. Centre for Policy Studies, London.

Gianella, C., Koske, I., Rusticelli, E. and Chantal, O. 2009. *What drives the NAIRU? Evidence from a panel of OECD countries*. OECD Economics Department Working Paper No. 649. Organization for Economic Cooperation and Development, Paris.

Henning, D. 2015. *Germany: Ten years of Hartz IV welfare cuts*. World Socialist Web Site, article published on 6 January 2015.

ILO. 2014. *Skills mismatch in Europe*. International Labour Office, Geneva.

IMF. 2003. World economic outlook. Chapter IV: *"Unemployment and labour market institutions: Why reforms pay off."* International Monetary Fund, Washington.

Martin, J. and Grubb, D. 2001. *What works and for whom: A review of OECD countries' experiences with active labour market policies*. Working Paper No. 14. Institute for Evaluation of Active Labour Market Policies, Uppsala.

Messing, V. 2014. *Patterns of Roma employment in Europe*. Neujobs Policy Brief No. D 19.4, Center for Policy Studies of the Central European University, Budapest.

Nesporova, A. 2015. *Long-term unemployment: An issues paper*. Manuscript. Employment Department, International Labour Office, Geneva.

Nickel, S., Nunziata, L. and Ochel, W. 2005. *Unemployment in the OECD since the 1960s: What do we know?* Economic Journal of the Royal Economic Society, volume 115.

Nicoletti, G. and Scarpetta, S. 2005. *Product market reforms and employment in the OECD countries.* OECD Economics Department Working Paper No. 472. Organization for Economic Cooperation and Development, Paris.

OECD, 1999. Emp*loyment outlook 1999*. Organization for Economic Cooperation and Development, Paris.

OECD, 2006. Employment outlook 2006. Chapter 7: *"Reassessing the role of policies and institutions for labour market performance: A quantitative analysis."* Organization for Economic Cooperation and Development, Paris.

OECD, 2012. *Economic surveys: Germany*. Organization for Economic Cooperation and Development, Paris.

OECD, 2014a. *Economic surveys: Poland*. Organization for Economic Cooperation and Development, Paris.

OECD, 2014b. *Economic surveys: Slovakia*. Organization for Economic Cooperation and Development, Paris.

Orlandi, F. 2012. *Structural unemployment and its determinants in the EU countries*. Economic Paper No. 455, European Commission, Directorate-General for Economic and Financial Affairs, Brussels.

Wanger, S. 2011. *Viele Frauen würden gerne länger arbeiten*. [Many women would like to work longer.] IAB Kurzbericht No. 9. Institute for Employment Research, Nürnberg

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