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Executive summary

This study provides an overview of economic and labour market developments in the new EU member states (NMS) of Central and Eastern Europe together with the experiences that have been collected with regard to migration flows between the 'old' and the 'new' member countries of the European Union over the past years. This should serve as important background material to assess the characteristics, features and impacts of migration flows which may emerge from a further liberalization of labour market access over the period 2009-2011.

Growth and the business cycle in the NMS*: The study starts with an assessment of the recent growth performance of the NMS over the period 2000-2007 with a special focus on the years after the first round of Eastern Enlargement, i.e. after 2004. The picture which emerges is that this was a period of high (and accelerating) growth for most of the NMS with substantial 'catching-up' in real incomes and productivity levels. Nonetheless, the real income gap ranges from (close to) 40% in Bulgaria and Romania to 80% (Slovenia) of the EU-15 average (Austria is about 13% above that level). There is also a more detailed analysis of the current phase of the business cycle in the NMS and a speculative assessment of the impact of the recent international financial market turbulence on the prospects on the NMS region as a whole together with short country-by-country reports. The tenor of this analysis is that even before the financial markets crisis there was some slowing down of growth as there were signs of overheating and some of the shocks (rising oil and commodity prices) were being absorbed. Nonetheless, there were positive tendencies especially in the Central European economies that are bordering Austria, especially with remarkable export growth leading some of the economies to become net exporters on the trade balances, while still keeping current accounts in the negative (reflecting – among other things - the repatriation of profits by multinationals which themselves played a major role in the improved export performance). Due to a sustained period of growth, there was also a trend change in most labour market indicators which are referred to in more detail below.*

The impact of the current financial crisis: *Taking the impact of the current crisis into account, wiiw forecasts a further slowdown of growth (but keeping the growth rates in the 3-4.5% range) although some countries – Hungary in particular – will be severely hit by the deteriorating financial market conditions, the slowdown in the major export markets, etc. The impact (will) show(s) the differences in the vulnerability of different economies, depending upon the built-up strains in some of the main accounts (external and fiscal) which are being severely tested in the new international economic climate. Some economies depended heavily upon external finance by the private and/or public sectors, and changes of some basic parameters emerging from the financial markets crisis (liquidity, international and domestic lending conditions) can cause severe disruptions to investment processes (by domestic and foreign investors), pressure on exchange rates and – in the wake of it – currency mismatches in debt and asset positions and a larger incidence of bankruptcy. All short- to medium-forecasts have currently to be presented with great margins of uncertainty and it is therefore more useful in the current context to analyse the mechanisms which generate different outcomes and discuss possible scenarios.*

Emerging from 'jobless growth': *Coming to labour market developments more specifically, we observed that, until the beginning of the new millennium, strong GDP growth in the NMS was coupled with falling or limited employment growth and a resultant rise in labour productivity (GDP per employed person), known as 'jobless growth'. In the past five years or so, job creation gradually gathered momentum in most countries. This is due to a sustained period of economic growth in most of the economies and also the gradual disappearance of the most striking negative features of structural adjustment (getting rid of over-manning, sharp reduction of employment shares in agriculture and industry, etc.) which characterized the early phases of transition in the 1990s.*

Unemployment falls: *High economic growth coupled with rising employment helped to gradually reduce unemployment in the majority of the NMS. In part this improvement is also due to an increase in migrant labour, particularly from the Baltic States. Migration also seems to have had a positive impact on the labour market situation in Poland and probably in Romania and Bulgaria as well. It is worth noting that in five out of ten countries, unemployment rates do not deviate much from the average observed in the old EU countries, and in some cases are even below that level. The share of long-term unemployed, initially reaching much higher levels than in the old EU, has been reduced gradually in a number of countries over the past few years. Slovakia is an exception; here long-term unemployed take a share of 73% in total unemployed in 2008, the vast majority is accounted for by members of the Roma community. Substantial progress has also been achieved in reducing youth unemployment. In a number of countries, labour shortages in some regions or branches co-exist with high unemployment in other regions.*

Wage growth: *Wages in the NMS are still very low in comparison to EU-15 but they have grown significantly along with high GDP growth over the past couple of years. This is particularly the case for Romania. There are interesting wage developments across age and skill groups which are reported in the study.*

Labour supply and demand by educational groups: *The analysis of demand and supply developments by educational attainment levels reveals that the NMS-5 nowadays have significantly lower shares of 'low-educated' (people with less than completed secondary education) than the EU-15 and Austria. Only in Romania and Bulgaria this share is with about 30% somewhat higher than in Austria (25%). The share of highly-educated (those with university degrees) in the population group aged 15-64 is in the NMS-7 similar to that of Austria (15%). The analysis of the changes in the educational structure of the age-group 25-34 between 2000 and 2007 shows that in all NMS-7 (with some exception for the Czech Republic and Romania) much larger shifts towards a higher educated workforce took place compared to the EU-15 and Austria.*

Although there was considerable easing of the unemployment situation in the NMS-7 especially in the period 2004-2007, the overall picture is that still substantial problems in the labour market exist for the group of low-educated. The more favourable situation on the NMS-7 labour markets resulted in a fall in unemployment rates and a slight rise of employment rates especially for the medium-educated, whereas for the low-educated we see only unemployment rates falling (except for Hungary, where the latter group experienced a rise in unemployment),

which points to the fact that people with a low education level more often moved from unemployment into inactivity instead of finding new jobs (there is also an age issue here as the low educated are more concentrated in the older age cohorts) or might have migrated. This fact is also shown in the examination of shifts in the employment structure. While new employment was created for medium- and highly educated a reduction of jobs for low-educated took place also in the most recent years in all NMS-7 similar to the developments in the EU-15.

Wage growth by educational group*: Wage growth in the NMS-5, which was relatively equally distributed among education groups in all NMS-5, led to substantial real income gains especially in the Czech Republic, Hungary and the Slovak Republic. However by 2007 only the wage levels of the highly-educated in the first two countries approached the average wage level in Austria and surpassed it in Slovenia when measured in Purchasing Power Parities (PPP). The divergence of wages of low-educated from the average Austrian wage level is still substantial, even when measured in PPP, ranging between 24% in Slovakia and 43% in Slovenia; when measured in EUR terms the range is even between 14% and 31%.*

Regional labour markets – employment growth: *The period 2004 to 2007 was in most NMS regions marked by relatively strong employment growth. While in Bulgarian, Estonian, Polish and Slovak regions employment growth was above the EU-average, it was lower in the regions of the Czech Republic, Lithuania, Romania, Slovenia and especially of Hungary. Moreover in most countries there was a division between good and bad performing regions. Hence in Hungary employment growth was stronger in the Budapest region and the two more industrialized Austrian border regions and lower in the more agricultural regions in the South and in the old industry region in the North of Hungary on the other hand. Similar patterns are found in the Czech Republic, Poland and Romania where regions with fast growing employment exist parallel with problem regions, where employment nearly stayed constant or even declined.*

Demand for and supply of skills by regions: *As found in the aggregate analysis, the educational structure of employment in the Central and Eastern European regions is significantly different from that of the EU-27 countries on average, as the share of the employed with completed primary education is lower in the new member states while the share of employed with completed secondary education is much higher. Differentiations across regions are largely explained by the sectoral structure of a region. Hence, in each country the capital cities have the highest share of employed with completed tertiary education and the lowest share of employed with completed secondary education. Manufacturing industry regions tend to have a higher share of those with secondary education, while agricultural regions have the highest ratios of employed with completed primary education (especially in Romania and Poland). Over time an almost constant upgrading of skills is observed for the majority of countries and regions, as the share of those with completed tertiary education tends to increase, while the share of employed with primary education declines strongly in each region.*

Regional labour markets – employment rates: *Employment rates vary widely across countries and regions in the new member states. They are above the EU-27 average in the Baltic States, the Czech regions and Slovenia and below that level in most regions of the other Central and Eastern European countries (especially in Romania, Hungary and Poland). In all*

countries employment rates in the capital city regions (or regions around larger conurbations) are higher than elsewhere, while at the same time also border regions tend to have a more prosperous labour market than other regions in the countries surrounding Austria. During the last four years employment rates increased significantly in most regions in Central and Eastern Europe, especially in Bulgaria, the Baltic states and Poland, though in a number of capital cities the employment rates tended to decline or stay constant over time, as labour supply grew stronger than labour demand. Over time the labour market situation of the low skilled tended to improve, mostly because the supply decreased more than the demand. By contrast, high skilled employment rates tended to decline especially in more prosperous regions (despite a strong expansion of high skill employment) because those regions had difficulties in meeting the strong increase in the supply with highly qualified labour with a sufficient demand for it.

Regional labour markets – unemployment: *There is also a wide variation in the unemployment situation across the new member state regions in 2007. In slightly less than half of the regions the unemployment rate was below the EU-27 average unemployment rate. It was particularly low in Prague and its surrounding region, the Baltic States and most other capital cities (except Warsaw), as well as in all regions at the Austrian border. By contrast, unemployment rates are highest in the Central and the Eastern region of Slovakia closely followed by the two Eastern regions in Hungary, as well as four regions in Poland, whereby two of them are German border regions. Over the latest years there has been a common trend of declining unemployment rates across all regions, except for Hungary. This trend was strongest in the Polish and Slovak regions. There was a common trend of a decline in the unemployment rate for the medium and high skilled across all regions, except the Hungarian ones. In the case of the low skilled unemployment it declined in all Polish regions as well as Slovenia and strongly in the three Baltic states, while it tended to increase in the Hungarian regions, in most Romanian regions and strongly in the Central and Eastern region of Slovakia.*

Cross-border labour flows: *Concerning the cross-border flows of workers the analysis suggests that most of these flows are of the (short- or longer-term) commuting type as around two thirds of the Central and Eastern European workers in Austria come from Austria's border countries. Moreover there is a strong tendency that commuters from these countries seek work in Austrian regions close to their home country. Contrastingly, workers from more distant countries (Poland, Romania, Bulgaria) locate in those regions that provide the best job opportunities in industry, construction and services irrespective of the geographic location of those regions. Over time the propensity to move to Austria has increased over the last eight years, as from 2000 to 2007 the total number of employees from the Central and Eastern European countries in Austria has increased by around 44 percent, whereby the number of Slovakian worker more than doubled and the number of Hungarian workers increased by around 70 percent. The results get some confirmation from the available statistics on inter-regional commuting behaviour in the Central and Eastern European regions. Though the overall propensity to commute is still low compared to Austria (except for Slovakia), latest developments indicate that with only few exceptions the propensity to commute inter-regionally, as well the absolute number of commuters, tend to increase in all regions in the new member states. Most important are the inter-regional commuting patterns to the capital cities and large conurbations.*

Migration experiences of sending and receiving countries: *Over the period 2003-2007 the stock of NMS-8 nationals in the EU-15 has increased from 840,000 to 1.86 million persons by 2007, corresponding to 0.5% of the EU-15 population. The bulk of immigrants (over 60%) has been absorbed by the UK and Ireland, two of the countries that agreed to permit free access to their labour markets for nationals from the new member countries immediately after enlargement. In Ireland the share of NMS-8 migrants in the total population increased to 4.1% in 2007, in the UK to 1%. Inflows of migrant workers to Sweden, which also allowed free access to its labour market for NMS nationals remained modest. Germany and Austria, imposing transitional rules, have experienced only a small influx of NMS migrants, but the share in their total population is relatively high, at 0.7% and 1% in 2007. Overall, the propensity of Bulgarian and Romanian nationals to emigrate is much higher than among citizens from Central and Eastern Europe, with 3.6% and 5.4% of the whole population of those two countries residing in the other EU countries in 2007.*

Experiences from the receiving countries show that recent NMS migrants are young and well educated, particularly in the UK and Ireland. In most host countries the skill level of NMS migrants is higher than that of other migrants and/or the respective nationals. However, they tend to work in jobs for which they are overqualified. NMS migrants are strongly represented in agriculture, construction, hotels and restaurants, and in low-skill manufacturing sectors. It is still too early to obtain information whether the 'skills-jobs mismatch' (or 'brain waste') reduces over time and at what speed.

In Poland, the Slovak Republic and probably so in Romania there is a growing share of outward migrants with university degrees (higher than that of the resident population), suggesting a certain brain drain. Most sending countries have started recruiting workers from abroad, but still in small numbers. Slovenia and the Czech Republic are exceptions in this respect, with the share of foreigners in the total labour force accounting for 7.3% and 5.5% respectively.

Econometric studies of migration flows: *The study contains a review of migration forecasts based on econometric analyses of migration flows before EU enlargement and after that, as well as most recent research on commuting potentials from the NMS to Austria. The most thorough and widely quoted pre-2004 study on the east to west migration flows to be expected following liberalized access to labour markets upon enlargement, Alvarez-Plata et al. (2003), predicted a long run increase of the stock of NMS-10 migrants to the EU-10 at 3.8 per cent of the sending country population. For Austria specifically, the study suggests an increase in the stock of NMS-10 migrants by 216,500 between 2004 and 2020. As concerns other studies of that time, predictions for both lower and higher inflows have been produced. Naturally, any of these studies suffered from the necessity of extrapolation in space and in time, and none could consider diversion effects emanating from asymmetric labour market liberalization across the incumbent EU members. Statistical data show that the increase in the EU-15 stock of NMS foreigners was ten per cent above the high scenario predictions of Alvarez-Plata et al. (2003), which may be due to the higher shares of temporary migrants in nowadays' east-west European flows than in those from the traditional guest worker sending countries towards Germany, on which the above predictions were based. Therefore, the long run increase in the stocks of NMS migrants in the EU-15 may still be close to the above predictions.*

Since 2004, three more recent forecast studies on east to west European migration have been produced. New insights of these are, first, that the relevance of the migration regime is tested for (Zaiceva, 2006): it is found that the policy approach towards labour market liberalization does not have a significant impact on the magnitude of the flows. Second, direct estimates on data from eastern European countries (Pytlikova, 2007) show that temporary flows are much higher than the net increases of NMS migrant stocks in the countries of the pre-2004 EU. Third, the most extensive, sophisticated and latest data-based predictions of Brücker et al. (2008) suggest that in the long run, the stock of migrants from the NMS-8 and NMS-2 would amount to 5 and 9 per cent of the sending country populations respectively. Taking the over-generous assumption that of these, as many would choose to go to Austria as was the case in the pre-2004 flows (i.e. assuming that the diversion of migration flows to the United Kingdom and Ireland would be a transitory phenomenon only) implies an increase in the stocks of NMS-8 and NMS-2 migrants in Austria by around 100,000 to 130,000 and 44,000 to 56,000 respectively.

As concerns commuting, we review the results of the most recent study on the topic by Huber and Novotny (2008). Based on their insights, the real commuting potential to the eastern parts of Austria from the neighbouring NMS regions is below one per cent of the combined working age populations of the respective Austrian regions.

Labour market impact of migration: *As regards econometric analyses of the labour market impacts of migration in the receiving economies we review three types of studies: those based on spatial variations in the impacts, those estimating elasticities of substitution between various types of labour (the so called factor proportions approach), and simulation studies. The bottom line of this research is that overall labour market effects of immigration are very moderate. However, earlier migrants and lower skilled workers may face adverse effects of immigration in terms of decelerated wage growth or increased risk of unemployment, due to the fact that new migrants tend to be substitutes to such workers, while this is not the case for other segments of the labour market. The total effects of immigration on the receiving economy are found to be positive, but very modest.*

Keywords: *labour market, migration, regions*

JEL classification: *J21, J61, R23*

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Migration and commuting propensity in the new EU member states

PART I: Growth and labour markets in the NMS

I.1 Growth performances of the NMS and outlook

Figure 1 gives a first impression of the rather positive picture that has characterized longer-run developments in the New Member States (NMS, from 2004 and 2006 onwards) over the period 2000 to 2007.

Figure 1a

GDP per capita

at current PPPs (EUR)
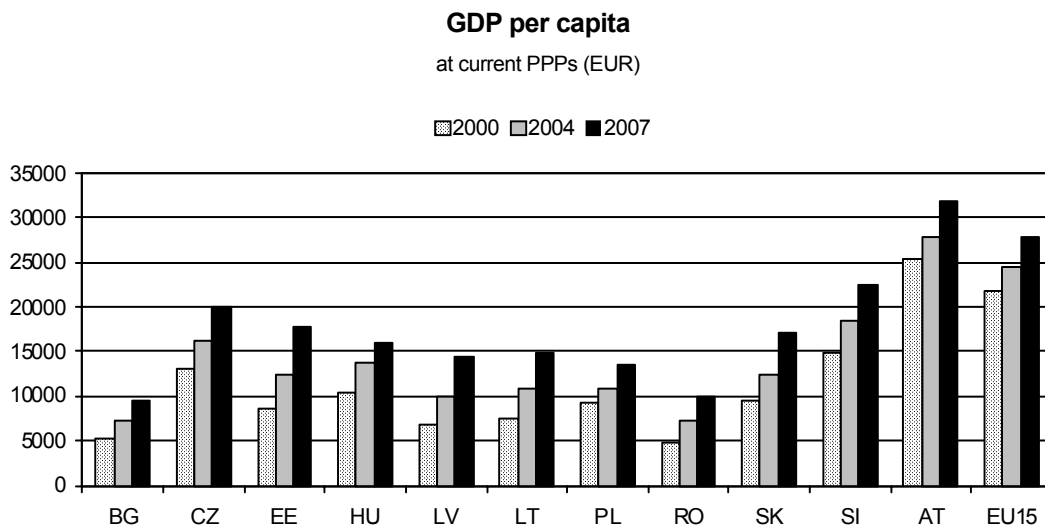
Source: wiiw, Eurostat.

Figure 1b

GDP per capita

at current PPPs (EUR), EU-15 = 100
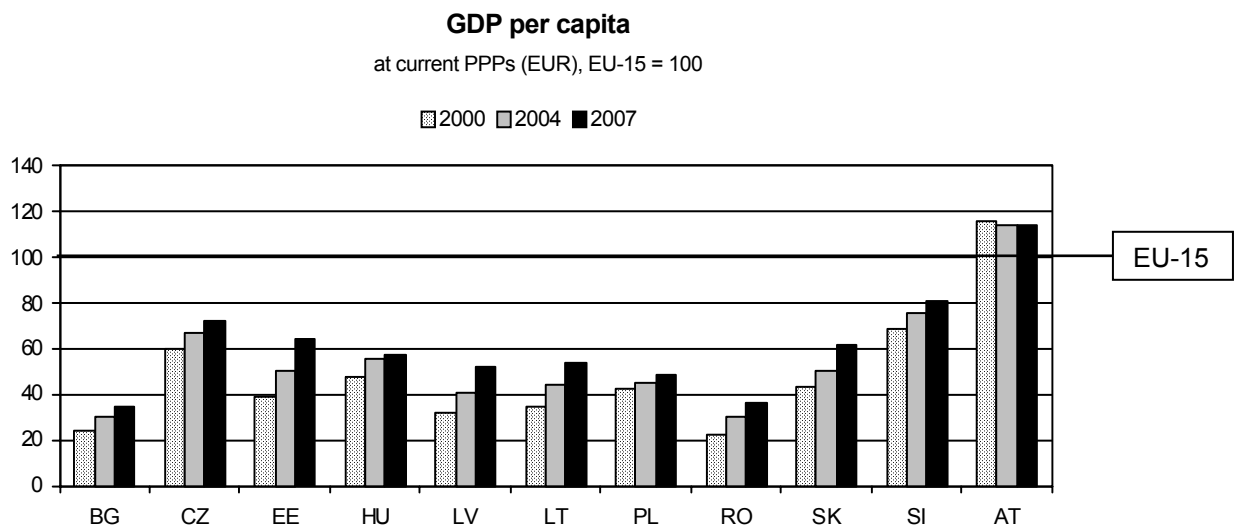
Source: wiiw, Eurostat.

In all the NMS we can see that a significant 'catching-up' process has been taking place in (average per capita) income levels relative to the 'older' member countries of the EU (the EU-15) and also in relation to Austria. While there are still significant per capita gaps remaining between the NMS and the (average of the) EU-15, the gaps have narrowed: the richest of the new member countries (Slovenia) is now above the 80% level of the EU-15 (above 70% in relation to Austria), the middle ranking economies at between 50% and 70% of the EU-15 level (all the remaining countries except Bulgaria and Romania) and the NMS-2 (Bulgaria and Romania) in the 35-40% range. In terms of relative growth performances, there were two countries which experienced lower growth over the period, Poland in the early years of the new millennium, and Hungary over the most recent years. In both countries the slowdowns referred to basic macroeconomic adjustments that followed the build-up of unsustainable disequilibria either on the external accounts (high and unsustainable current accounts deficits) and/or in fiscal accounts. These experiences of temporary slowdowns of an otherwise remarkable cross-region catching-up trajectory remain possible in a range of economies also in the future; the likelihood of this occurring over the coming years in the wake of the current global financial markets crisis is discussed in detail in the following section I.2.

Figure 2

Employment and GDP growth in NMS-10, 1997-2007

change to previous year in %
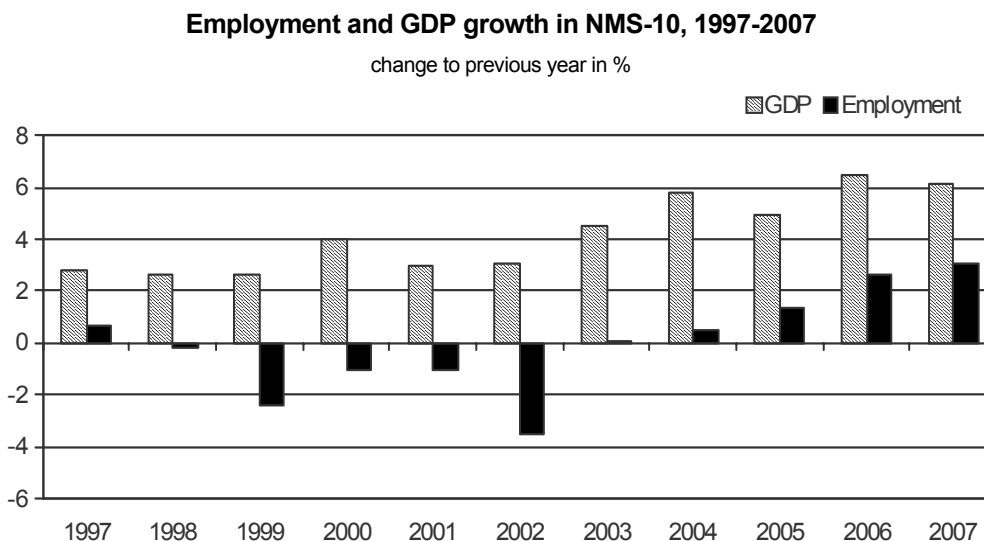
Source: wiiw, annual database

The second issue we want to point out is that there was a remarkable turnaround in employment developments in the NMS over the past years. After a long period in which significant GDP growth did not result in positive employment growth, over the more recent period (see Figure 2) there was also significant employment generation accompanying a speeding-up of overall economic growth. This had repercussions on improvements in a range of labour market indicators (employment and activity rates, unemployment rates, long-term unemployed, youth unemployment etc.) and we refer the reader to section I.3 for a thorough discussion of these developments.

Figure 3

Overview developments 2000-2011

Czech Republic

Hungary

Poland

Slovak Republic

Slovenia

☐av. 2000-2007 ▨av. 2004-2007 ■av. 2008-2011

GDP growth, %   Inflation, growth %   Unemployment rate, %   CA/GDP Deficit

Bulgaria

☐av. 2000-2007 ▨av. 2004-2007 ■av. 2008-2011

GDP growth, %   Inflation, growth %   Unemployment rate, %   CA/GDP Deficit

Romania

☐av. 2000-2007 ▨av. 2004-2007 ■av. 2008-2011

GDP growth, %   Inflation, growth %   Unemployment rate, %   CA/GDP Deficit

Source. wiiw.

Finally, we show a brief summary of some main macroeconomic indicators in Figure 3 over the historical period 2000-2007, the more recent period 2004-2007, and our most recent assessment regarding future developments over the period 2008-2011. What we can see is that in all economies with the exception of Hungary (and, to some extent, Romania) there was a speeding-up of growth over the period 2004-2007 as compared to the earlier years of the millennium. There was thus a growth dividend coinciding with the entry of a substantial number of the NMS into the European Union. For the 2009-2011 period we forecast a slowdown of growth in the NMS region, but that slowdown will still keep growth in the range of 3% to 4.5% – with the exception of Hungary, which has been severely hit by recent financial markets disturbances. After a period in which inflation

rates were relatively high in the NMS, we are now witnessing a period in which such rates are coming down, and we expect this to persist over the next three years as global commodity and energy prices remain low in the wake of low global growth. As regards labour markets, we do not expect a sharp deterioration as (output) growth remains above the levels (except for Hungary) which would lead to deteriorating unemployment figures, although the strong improvements in the labour market characteristics we have witnessed over the past few years will also disappear. Finally, the figures on the current accounts show that some of the countries remain vulnerable due to deteriorating competitiveness and falling export prospects as a result of the deteriorating market situation in the main export markets in both Western and Eastern Europe. Nevertheless, a few economies (the Czech Republic, Hungary and Slovakia in particular) have built up a very solid export base which will assist in weathering the worse global economic climate.

As mentioned in the following section, however, in current circumstances, any short-run forecasts are to be treated with more than the usual caution.

I.2 Short-term aggregate outlook for the NMS

I.2.1   Overview

GDP growth slowdown

Economic growth in the NMS-7[1] has been slowing down for the past year. The slowdown is not only attributable to the ongoing global turmoil (which broke out at mid-2007); a gradual growth slowdown in 2007-2008 had been anticipated already in 2006. The actual performance so far has been better than expected – and that despite the worsening of external conditions. It may be added that most of the countries have also been coping quite successfully with the effects of the externally conditioned inflationary shocks.

Sources of slowdown in growth in 2008

Internally conditioned imbalances and tensions that have built up during the recent period of rapid expansion are central to the gentle deceleration of growth in the Czech Republic, Poland, Slovakia and Slovenia foreseen for 2008. (It should be recalled, however, that in Romania growth is still accelerating and that growth in Hungary had also recovered in 2008 prior to the recent crisis). The reasons for the slowdowns are manifold. First, one can see a universal intensification of tensions and imbalances on the labour markets, with clear signs of shortages of adequately skilled workers in many sectors and/or regions. Second, despite generally good domestic demand prospects coupled with high levels of capacity

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[1]   NMS-7: The Czech Republic, Hungary, Poland, Slovakia and Slovenia as well as Bulgaria and Romania.

utilization and more or less satisfactory financial conditions (such as relatively adequate profitability in the corporate sector and maintenance of fairly low interest rates), gross fixed investment seemed to be slowly running out of steam.

The reasons for weakening investment appear to be largely cyclical: a period of brisk investment activity is now followed by a period of relative calm which is essential to consolidating gains (and eventual losses). The heightened levels of uncertainty over the course of exchange rates, prices and wages also make firms more cautious in terms of their investment decisions. The uncertainty over energy price developments, for example, may prove to be a decisive factor when it comes to choosing the technologies to be used on newly installed machinery and equipment. The choice may be between energy-efficient technologies and more traditional less energy-efficient techniques. Once taken, however, the decisions are often irreversible. In these circumstances, the optimal business tactics is simply 'wait and see' – until a general consensus on energy price trends emerges. On the other hand, increasing transfers of EU funds (co-financing infrastructural and environmental investment projects) should help stabilize overall investment in the NMS, yet they will not dispel fundamental uncertainties facing the business sector.

Foreign trade approaching the one trillion euro mark, while large FDI inflows and current account deficits continue

In terms of volume, the NMS annual turnover of foreign trade in goods will exceed the one thousand billion euro mark in 2008: double that of 2004. Foreign trade in services has also been rising at an impressive rate. Rapid growth in both exports and imports will generally continue. It is particularly significant that a new trend seems to be setting in. The tendency for export growth rates to be lower than import growth rates (both measured in current euro terms) is being generally reversed. Exports have started to rise more rapidly than imports, despite import bills being recently inflated by the high prices of imported energy carriers .

It is particularly encouraging to observe the same tendency in Bulgaria and Romania (both still enjoying rapid GDP growth). On the other hand, this tendency is only expected to devolve on Slovenia after some delay. (One may be witnessing the first signs of erosion in Slovenia's competitiveness owing to the euro having replaced the country's regularly devalued currency – and the ensuing real appreciation.) So far only the Czech Republic has consistently recorded a foreign trade surplus since 2005. From time to time Hungary also manages to reduce its trade deficit. However, this happens only when the authorities have no choice but to impose 'austerity' programmes designed to check run-away budget or current account deficits. Those programmes (viz. the current stabilization package) invariably suppress consumption and imports, but they do not prevent the re-emergence of large trade deficits as soon as the crisis seems to be over. Slovakia may soon become the second country with a more or less permanent trade surplus (as new capacities in the automotive industry come on stream).

The tendency for a gradual transformation of the NMS into net exporters (as distinct from having been net importers for many years) seems to be a natural consequence of those countries having become recipients of large inflows of foreign direct investment in the manufacturing sector. FDI has brought about qualitative improvements in manufacturing, while by and large keeping costs at bay. More importantly, large-scale foreign-owned manufacturing firms in the NMS no longer concentrate on conquering the domestic markets in the target countries. Instead, they use local resources (still relatively cheap) such as labour, skills, energy and environment to competitively produce goods that are sold internationally. Rapid export growth is therefore a central characteristic of FDI at the current stage of development in the NMS. Other characteristics inherent in this current stage include: (1) persistence of large current account deficits; and (2) a certain level of overall insensitivity on the part of exports and trade balances to the strong nominal appreciation of exchange rates observed for quite a long time.

Large current account deficits still persist and are even increasing, despite improvements in trade balances. This is clearly evidenced by trends in Slovakia, for example. The two trends are not mutually contradictory. Indeed, they are closely linked. Rising trade surpluses act to some degree as proxies for the rising profits of exporting companies. However, since those profits (whether actually repatriated or not) constitute a large segment of the official current account deficit, some form of association must obtain between persistent current account deficits and trade balance improvements.

Heightened risks ahead

So far the NMS have proved resistant to unfavourable external developments reflected in negative price shocks, growth slowdowns abroad and excessive appreciation of the domestic currencies. The latest phase of the unfolding global financial crisis that is now hitting Europe with full force may have more serious consequences for the NMS-7. Strongly depressed growth (let alone recession) in the euro area and elsewhere (i.e. in Russia and Ukraine) cannot be considered conducive to strong growth in the NMS. Eventually, growth in new member states is likely to be weaker on account of the growth slowdown in their major trading partners. But the scale of resultant reductions in the GDP growth rates (and other essential indicators) in the NMS is hard to assess at the moment. Current developments are still rather dynamic and chaotic. To start with, the expectations concerning real growth in the partner countries are quite unstable. Thus it is difficult to gauge the scale of reductions in foreign demand for imports from the NMS. Moreover, it is hard to assess other impacts of the global developments on, e.g., the exchange rate developments which co-determine the volumes of foreign trade of the countries considered. The most recent tendency for capital outflows from the NMS (triggered by the difficulties facing Hungary) and the associated tendency for the local currencies to depreciate nominally can – if kept within reasonable limits – have quite positive impacts in a number of countries (including Poland and the Czech Republic) whose monies had been

strengthening excessively before. But it is quite difficult, if not impossible, to forecast the exchange rate developments over the next couple of months. As long as the markets are governed by emotions and not solid fundamentals, any outcome may be equally probable.

If only the economic fundamentals mattered (such as the levels of foreign debt, current account and public sector deficits and the basic indicators of the stability of the domestic financial system), most NMS would have nothing to fear. In particular, the fundamentals of the Czech Republic, Poland, Slovenia and Slovakia ought to be considered quite strong. The fundamentals of Romania and Bulgaria are much weaker, with the latter country being especially vulnerable on account of its inflexible exchange rate regime. Finally, Hungary is a country whose fundamentals have been in a bad shape for quite a long time. It is unsurprising that Hungary has been now suffering quite heavily under the global impacts. It is justifiable to expect that it will take much effort (and time) before Hungary can overcome its major problem: persistently high twin deficits combined with high foreign (and domestic) indebtedness.

The risk of adopting the euro prematurely

All NMS are obliged to adopt the euro. To date only Slovenia has done so. Next Slovakia will follow at the beginning of 2009. The three Baltic countries, which first seemed the most likely candidates to join the euro area at an early stage, failed at the gate since their rapid debt-driven growth had already pushed their inflation rates above the relevant Maastricht criterion two years previous.

The advantages of switching to the euro are legion. They include lower transaction costs and greater transparency of prices, as well as insensitivity to exchange rate and currency risks. In the short run, most of the NMS that adopt the euro can also look forward to a drop in interest rates (and consequently a lower public debt servicing burden). Moreover, the countries currently suffering from the impact of nominal appreciation pressures would enjoy appreciable relief. On the other hand, the adoption of the euro also generates important risks for countries which are still in a process of catching-up. Should, at some time in the future, an NMS start losing external competitiveness vis-à-vis other euro area countries, it may be condemned to more or less permanent stagnation – without being able to adjust by devaluing its national currency against the euro. This is not a hypothetical situation; there are precedents. For almost ten years Portugal and Italy have been unable to withstand the pace of productivity growth and wage deflation in the more dynamic segments of the euro area. Both countries (likely to be joined soon by Spain) have thus been stagnating. Moreover, relatively little can be done to break out of that stagnation. The situation can even worsen, if adoption of the euro happens to be combined with a pronounced (and abrupt) drop in domestic interest rates on commercial loans. Such a drop is likely to generate an artificial consumption boom accompanied by a rise in inflation and foreign

Table 1

Overview developments 2006-2007 and outlook 2008-2011

	GDP real change in % against previous year						Consumer prices change in % against previous year						Unemployment, based on LFS [1] rate in %, annual average						Current account in % of GDP					
	2006	2007	2008	2009 Forecast	2010	2011	2006	2007	2008	2009 Forecast	2010	2011	2006	2007	2008	2009 Forecast	2010	2011	2006	2007	2008	2009 Forecast	2010	2011
Czech Republic	6.8	6.6	4.6	3.5	4	4	2.5	2.8	6	2.8	2.5	2.5	7.1	5.3	5	5	4.5	4.5	-2.6	-1.8	-2.5	-2.6	-2.6	-2.6
Hungary	4.1	1.1	1.3	-1	1	2	3.9	8.0	6.3	4.5	3.5	2.5	7.5	7.4	7.8	8.8	8.2	8	-7.5	-6.4	-6.1	-5.0	-5.5	-5
Poland	6.2	6.7	5.4	3.8	4.5	5	1.0	2.5	4	3	2.6	2.5	13.8	9.6	9	8	8	7	-2.7	-3.7	-5	-5	-4.5	-4
Slovak Republic	8.5	10.4	7	5	4	5	4.5	2.8	4.2	4	3.5	3	13.3	11.0	10	11	11	10	-7.0	-5.3	-6.3	-7	-7.8	-7
Slovenia	5.9	6.8	4.7	3	3	3.5	2.5	3.6	6	5	4	3.5	6.0	4.9	5	6	6	5.5	-2.8	-4.8	-6.0	-5.5	-4.5	-4.5
Bulgaria	6.3	6.2	6	3	4	5	7.3	8.4	12	7	5	5	9.0	6.9	6	7	7	6	-17.8	-21.8	-23	-17	-16	-16
Romania	7.9	6.0	8.0	3	4	5	6.6	4.8	8	6	5	5	7.3	6.4	6	7	7	6	-10.4	-14.0	-13	-10	-10	-12
NMS-7 [2)3)]	*6.4*	*6.1*	*5.3*	*3.0*	*3.8*	*4.4*	*3.1*	*4.0*	*5.8*	*4.0*	*3.3*	*3.1*	*10.3*	*7.9*	*7.4*	*7.6*	*7.4*	*6.6*	*-5.3*	*-6.2*				

Note: NMS: The New EU Member States.
1) LFS - Labour Force Survey. - 2) wiiw estimate. - 3) Current account data include flows within the region.

Source: wiiw.

borrowing, as well as burgeoning asset bubbles (including housing). A swift rise in fixed capital formation in productive export activities may well follow, but of course it need not. This, however, is an exact description of the events that have led up to the present forced 'adjustments' in the Baltic countries. Furthermore, those countries had also abrogated their sovereignty over monetary policy. Having fixed the exchange rates, they could initially reduce inflation and the interest rates. However, those countries found themselves defenceless in face of asset-price booms, rocketing debts, inflation and – worst of all – evaporating external competitiveness. Hence the likely adoption of the euro over the coming five years by most NMS is going to change the monetary regimes in a direction that can be beneficial (reduction of monetary instabilities) but can also generate substantial risks in terms of the remaining scope of adjusting to external disequilibria.

The conditional forecasts for the NMS

As argued above, economic forecasts made at this very moment must allow for many unprecedented and hardly predictable circumstances. For that reason any forecasts currently available embody a greater than is usual element of subjectivity. The same applies also to forecasts formulated at the Vienna Institute for International Economic Studies (wiiw). Because in the past our forecasts have proved fairly accurate, it is reasonable to expect that this will also be the case with respect to the forecasts of major indicators for the 7 NMS extending to 2011 (see Table 1).

I.2.2   Brief country assessments

Bulgaria: the boom holds on but risks get magnified

Strong growth continued in Bulgaria through the second quarter of 2008, defying the emerging negative sentiment about the country's economic prospects. But risks have magnified.

The macroeconomic balance is becoming further upset, with net exports making a large negative contribution to GDP growth. This reflects a slowdown in export growth. The current account deficit in the first half of the year reached 27.5% of GDP. On the one hand there was a renewed surge in fixed investment, which grew by 28.6%, while private consumption rose by only 5.3%. Inflation remains rather high at the moment but is expected to fall in the months to come. At the same time, the strain in the labour markets caused by labour shortages is increasing and a growing number of firms are inviting foreign guest workers. The strong economic performance brought a high fiscal surplus. Borrowing by Bulgarian banks abroad – the main source of the domestic credit and investment boom – has all but dried out, reflecting the dismal state of the global financial markets. The short-term outlook for the Bulgarian economy has deteriorated, but GDP growth in 2008 will still remain relatively high. The prospects for 2009-2011 will depend on

the extent to which the economy will be affected by negative external factors. If domestic demand remains the main growth driver, under the assumption that consumer and investor sentiment does not deteriorate markedly, the economy could continue to grow relatively fast, though more slowly than at present. Such a pattern of growth, however, implies the conservation of large external imbalances, inflationary pressures and rising risks to macroeconomic stability.

The Czech Republic: weak domestic demand, resilient exports, sound banking

Under weakening domestic demand, the growth deceleration has continued, bringing the GDP growth rate for the second quarter of 2008 to 4.5%. This is moderating the wage pressures. The fiscal policy is fairly restrictive. Growth in gross fixed investment is rather anaemic. Mounting uncertainties, primarily over the course of the exchange rates and the longer-term trends in foreign demand, discourage investment. Ominous news relate to the dynamics of inventories. In the second quarter of 2008 the long overdue adjustments in inventories seem to have finally started, shaving off as much as 2.2 percentage points from the GDP growth rate. Further such inventory adjustments are likely. Foreign trade in goods and non-factor services saves the day, generating as much as 4 percentage points out of the overall GDP growth rate in the second quarter of 2008. In nominal terms the trade surplus rose further, from EUR 3.6 billion in the first half of 2007 to EUR 5 billion currently. These are remarkable achievements, especially given: (1) the weakening growth in the 'old' EU which is the main outlet for Czech exports; (2) the extraordinary strength of the Czech koruna vs. the euro observed in the first half of 2008; and (3) worsening terms of trade. The resilience of Czech exports to the adverse external conditions is only natural because much of the export-oriented manufacturing is foreign-owned and fully integrated into large multinational production/distribution networks. Even if some slowdown in export growth may be unavoidable, the external trade will continue to be the major pillar of growth in 2009-2010.

The Czech National Bank's responses to inflation have been quite thoughtful. Given the global financial developments, a pre-emptive easing of the monetary policy is justified – even if there are no real reasons to doubt the fundamental soundness of the local banking system.

Hungary: outlook reconsidered

Despite some acceleration, GDP growth in the first half of 2008 was still weak. Industry was less dynamic than in 2007, due to weakening foreign demand. Household consumption increased only modestly. However, fixed investments continued to decline. The considerable lead of export growth over that of imports observed in the first quarter evaporated in the second. The minority socialist government, struggling for survival, dropped the idea of pushing unpopular reforms. Instead it found a new focus: the tax

reform. Since mid-2006 a stabilization package has been implemented the aim of which is to reduce excessive fiscal deficits. By end-2008 the budget deficit will be reduced to 3.5% of the GDP, or even less. But the stabilization has been costly in terms of lost growth.

The global financial crisis has spilled into Hungary recently. The BUX fell to around half its value from summer 2007, the forint depreciated steeply, and there was a speculative attack against OTP, the country's biggest savings bank. Government securities' yields rose while the turnover dropped strongly. Although Hungary is not directly involved in the international financial crisis since its banks are fairly sound, the secondary impacts give reason for concern. Debts denominated in foreign currencies of households, firms and the public sector are rather high. Observing the public sector deficit target is essential. This is why the government already suggested the postponement of the planned tax-cut package and freezing of real wage growth up until the middle of next year. The National Bank's recent decision to raise the interest rate by 300 basis points is a desperate move which is unlikely to induce any more confidence. Instead, that move is certain to burden the real economy with extra costs. Given the levels of global uncertainty and – even more so – of domestic confusion, any longer-term forecast is hardly more than a guess. While GDP will grow by slightly over 1% in 2008, in 2009 the growth rate may be even. It is only later on that a more optimistic growth scenario may – and should – materialize.

Poland: a slowdown in the making

At 5.8%, the GDP growth rate for the second quarter of 2008 was higher than expected. The structure of growth has been advantageous as fixed investment contributed 2.9 percentage points (p.p.) – vs. total consumption's contribution of 3.3 p.p. The contribution of foreign trade was close to null. Other important aggregate indicators have also been largely positive. Inflation is set to gradually subside. Public finances are well under control. The finances of the non-financial 'corporate' sector continue to be in a very good shape: also banks made huge net profits. Employment (LFS) rose by 4% in the first half of 2008 and the average wage increased by close to 12%. The registered unemployment rate fell below 10%, for the first time since 1991. Some of the positive trends will continue in the coming months even if less intensively.

The global financial market turmoil bears, so far, only indirectly on the Polish economy. Huge losses suffered by domestic investors on the Warsaw Stock Exchange (the indexes of which closely follow the world-wide downward trends) are likely to translate into somewhat weakening demand for consumer goods and also residential investment. Besides, there are indirect channels through which the global financial turmoil can spill over into the national financial system. Actually, such channels operate already: the domestic banks, frightened by the events abroad, have been tightening their credit standards and demanding higher interests rates while households and firms may start preferring liquidity to longer-term financial investment and/or bank deposits. This will affect the real economy

through constrained consumption and residential investment though not necessarily via much lower investments in fixed productive assets. (The latter investments continue to be financed primarily out of abundant own financial resources of the non-financial firms.) The deteriorating business climate in Germany and other 'old' EU members which jointly absorb the bulk of Polish exports is likely to be another side-effect of the global turmoil. Thus reduced export prospects may be capable of shaving off a fraction of the otherwise achievable GDP growth rate in the second half of 2008 and beyond. On the other hand, the presently observed weakening of the Polish currency – which is another consequence of the global financial turmoil – is likely to facilitate exports.

Judging by the available data, Poland's financial system seems to be fundamentally sound. To a large extent that soundness is due to Poland's financial system being relatively underdeveloped (i.e. less sophisticated than the more advanced foreign systems, the US in particular). The 'originate and distribute' business model commonly used elsewhere, which is one of the roots of the current global financial crisis, did not have time (and resources) to strike roots here. Nor were the local banks involved in the business of acquiring the 'toxic waste' which pushed some West European banks into difficulties. It must be observed though, that in 'normal circumstances' even unsound financial systems may function satisfactorily. However, under the extraordinary conditions now prevailing globally, even exemplary fundamental soundness of a national financial system is not a guarantee of smooth functioning. A sufficiently massive panic breaking out in major centres of global finances can be contagious – and play havoc to the peripheral places as well.

Romania: record economic growth

With 9.3% GDP growth in the second quarter of 2008, the Romanian economy achieved its fastest growth ever. Supported by strong private demand and soaring investments this will continue, though some deceleration is likely. Inflation peaked at 9% in mid-2008 but is now declining. Negative effects of overheating could so far be avoided and there are no signs of a hard landing. Monetary tightening went on all through the first nine months of 2008. Credits to households kept booming until a new regulation imposed restrictions on lending. The floating exchange rate regime has been permitting depreciation. Exports have grown faster than imports but the foreign trade deficit still increases in nominal terms. The current account deficit continues to widen, though at a slower pace than earlier, and has reached 15% of GDP. Some 60% of it could be covered by FDI inflows. While public debt is very low, gross foreign debt continued to expand due to private sector borrowing and reached over 60% of GDP. In the future the current account deficit will continue to grow at a lower rate – not due to the trade deficit but to increasing profits of foreign investors (currently about 5% of GDP). With stagnation in the old EU member countries, growth will slow down. Signs of strain have already appeared on the real estate market which may soon have impacts on the construction sector. Increasing cost of credits will also

contribute to a cool-down. GDP growth in the coming two to three years may slow down to 3-4%, which may help reduce both the current account deficit and inflation.

Slovakia: robust growth as the date of euro adoption draws near

On 1 January 2009 Slovakia will join the eurozone. The final stage of integration into the EU has been achieved under the left-leaning government of Robert Fico, in power since summer 2006. The Fico cabinet continues the pro-business agenda initiated by its conservative predecessors. Slovakia's attractiveness for foreign direct investment is likely to be enhanced. So far the financial sector in Slovakia has not been affected by the global financial turmoil. More than 90% of bank assets are held by foreign-owned banks (dominated by the traditionally conservative Austrian banks). Both public and private debt levels are very low and there are no reasons why bank lending should be obstructed. Despite signs of a growth slowdown in the EU, the GDP was up by 8.1% in the first half of 2008, mostly fuelled by household consumption. Foreign trade contributed less to GDP expansion than one year ago.

Domestic demand – with a growth of around 6% is likely to remain the main driving force of economic expansion in the coming years. Growth of gross fixed capital formation is estimated to decline to about 5%, inflation will remain relatively high. The sustainability of inflation convergence after the 1st of Jan. 2008 will be the main challenge because the task of controlling domestic inflation will shift to fiscal policy. The foreign trade surplus will turn into a deficit owing to the declining global demand. In addition increasing repatriation of profits by FDI companies will worsen the country's external position.

Slovenia: signs of weakness

Strong economic growth continued in the second quarter of 2008. GDP grew by 5.5%, backed by high (but slowing) investment growth. During the remainder of the year GDP growth is expected to weaken. The rate of consumer price inflation rose rapidly, to 6.9% in July, but weakened somewhat thereafter, to 5.5% in September. Average nominal wage has been rising at over 8%. Further wage increases in the coming months are to be expected due to the adjustment of public sector wages agreed upon at the beginning of the year. Imports grew much faster than exports, resulting in a EUR 1.4 billion trade deficit in the first seven months – double the one reported for same period in 2007. The current account deficit also more than doubled. A weakening competitiveness following the introduction of the euro is one of the reasons for these developments. Gross foreign debt continued to grow at a fast pace and stood at EUR 39 billion by the end of June.

Lower foreign demand due to slower growth in Slovenia's main trading partners will slow down the country's economy in 2009. Moreover, the access to foreign long-term loans will become more difficult than in the past. Assuming a slowdown of investment growth, the

import growth rate should taper off, hence the current account deficit may somewhat diminish. Slovenia being a small country highly exposed to external shocks, the return to faster growth beyond 2009 is conditional on the international environment, particularly the business climate in the EU.

I.3 Labour markets

I.3.1   Labour market developments in the NMS

Until the beginning of the new millennium, strong GDP growth in the NMS was coupled with falling or limited employment growth and a resultant rise in labour productivity (GDP per employed person), known as 'jobless growth'. Thereafter job creation gradually gathered momentum in most countries. These developments are reflected in rising employment and activity rates all over the region (see Table 2). Employment rates range from a low of 55% in Poland to 68% in Estonia. Together with Slovenia and Latvia, Estonia's employment rate already exceeds the EU-15 average of 66%. The demand for labour is particularly strong in those countries reporting low rates of unemployment, i.e. the Baltic States and Bulgaria, as well as in Slovakia where unemployment is still high. In 2008 employment continued to rise in all NMS and growth was remarkable in Poland, Bulgaria and Slovakia.

Notable differences between the NMS and the EU-15 exist also with regard to the employment rates for men and women. Starting from levels that were much higher than the EU-15 average (59.7%), female employment rates fell during the 1990s. The start of recovery differed from country to country. In 2007 female employment rates exceeded the EU-15 average rate only in the three Baltic States and in Slovenia and ranked below that mark in all other NMS. A comparison among the NMS shows that, in 2007, female employment rates ranged from 65.9% in Slovenia to 60% in Poland and in Hungary. As opposed to female employment rates, male employment rates in the NMS had been well below the EU-15 average in the 1990s in all countries except the Czech Republic. Although that rate has been rising everywhere in the past few years, only the Czech Republic shows a similar rate as the EU-15; in all other NMS the male employment rate has remained below that level.

In the period 2000-2007 employment in the NMS-5[2] rose by 1.3 million persons; if adding the Baltic States and the NMS-2 (Bulgaria and Romania), the number of employed increase by 1.2 million persons (see Annex Tables A1a-3b). However, the latter figure has to be taken with caution since methodological changes in the Romanian statistics in 2002 do not allow comparisons with earlier periods. Having this caveat in mind, job creation was particularly strong in trade and transport, business services and construction and, in some

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[2]   NMS-5: Czech Republic, Hungary, Poland, Slovakia and Slovenia.

countries, also in industry. In a number of NMS the employment shares in industry remained at relatively high levels, such as in the Czech Republic, Slovakia and Slovenia. After drastic cuts at the outset of transition, manufacturing employment started to rise in the past couple of years. However, the extent of this recovery differed from country to country. In the case of the Czech Republic, Slovakia and Bulgaria these developments are quite clearly a consequence of strong FDI inflows in the past several years. On the other hand, the de-agrarianization process is continuing in all NMS, but the share of agriculture in total employment is still at 10% in the NMS-5 and at 13% in the NMS-10[3] due to the strong weights of Poland and Romania, where 14.5% and close to 30% respectively are employed in agriculture.

Havlik (2008), examining employment within industrial branches, found that in all NMS both the labour-intensive branches (such as textiles and leather) and capital-intensive branches (coke, refined petroleum and chemicals) have been laying off workers. By contrast, sectors dominated by foreign investment companies active in branches such as rubber and plastics, electrical and optical equipment and transport equipment have increased employment in nearly all NMS.

Strong GDP growth coupled with rising employment helped to gradually reduce unemployment in the majority of NMS (Figure 4). In part this improvement is due to an increase in migrant labour, particularly from the Baltic States. Migration also seems to have had a positive impact on the labour market situation in Poland and probably in Romania as well. It is worth noting that in five out of ten countries, unemployment rates do not deviate much from the average observed in the old EU countries, and in some cases are even below that level. Unemployment has been higher for men than for women in all countries but Estonia and Romania. The gender gap is in most countries less pronounced than in the EU-15, exceptions being the Czech Republic and Poland.

Despite these general improvements, some structural features of unemployment have remained unchanged or even deteriorated. Regional disparities in the NMS are large and have widened over time, and interregional mobility is low. But the share of long-term unemployed, initially reaching much higher levels than in the old EU, has been reduced gradually in a number of countries over the past few years. Slovakia is an exception; here long-term unemployed take a share of 73% in total unemployed in 2008, the vast majority is accounted for by members of the Roma community. Substantial progress has also been achieved in reducing youth unemployment, particularly in Poland and Slovakia (the two countries hit hardest in the past), while it rose in Hungary in the wake of economic turbulences.

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[3]   NMS-10: Czech Republic, Hungary, Poland, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Bulgaria and Romania

Figure 4

Unemployment rates in NMS-10

in %, average
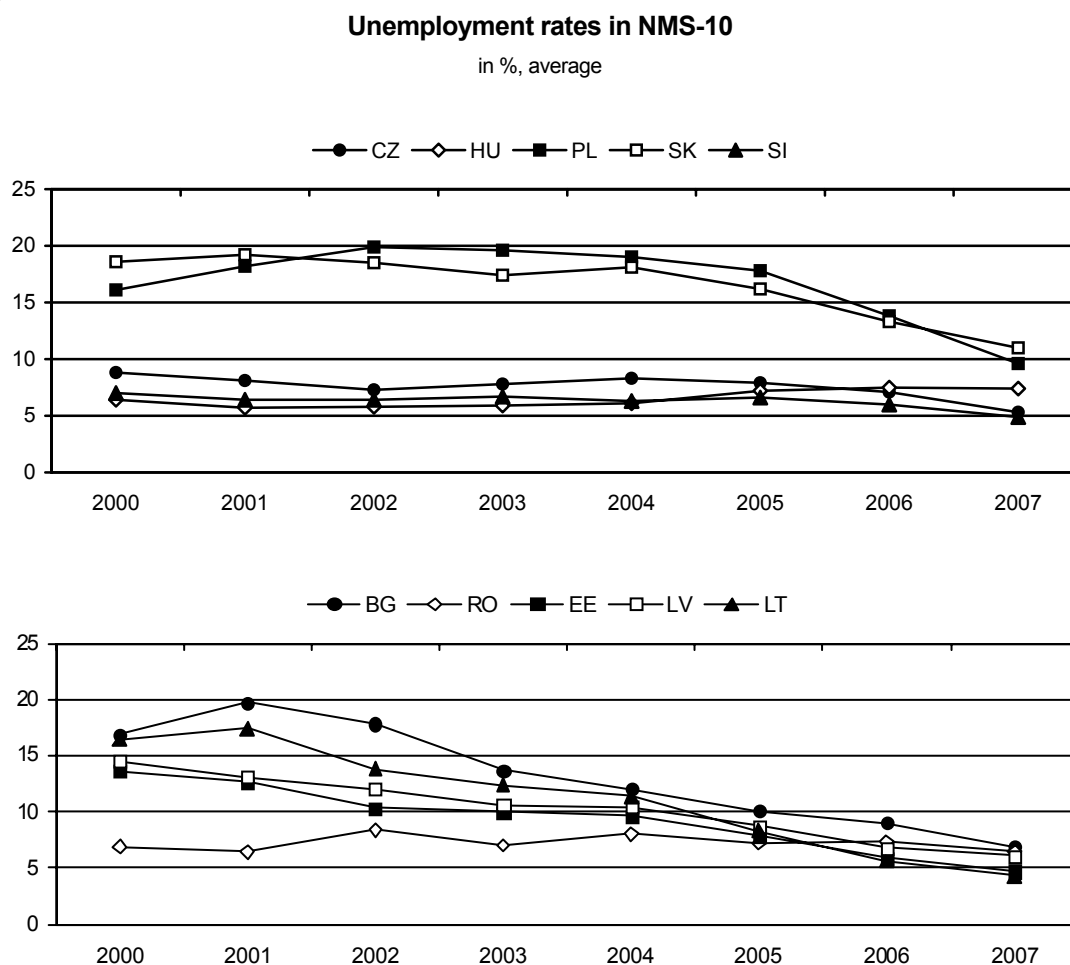
Source: LFS, national definition.

Thus, in a number of countries, labour shortages in some regions or branches co-exist with high unemployment in other regions (for detailed information on regional developments see section below). In the NMS, labour shortages occurred much earlier than might have been expected after years of almost jobless growth and high unemployment. The latter had persisted for a long period of time, resulting in a large proportion of long-term unemployed who in principle are unemployable as their skills have eroded, they lack any motivation to work and their level of education is low.

Over the period 2005-2008 the job vacancy rate showed a steady increase. Together with the low levels of unemployment, this may denote a shortage of skilled workers and a tightening of labour markets. The rise in vacancy rates was most pronounced in the Czech Republic, Lithuania and Estonia. Across the NMS, the highest vacancy rates were reported for the three Baltic States, the Czech Republic, Poland and Romania.

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Table 2

Employment, unemployment indicators and job vacancy rates in NMS

in %

		Employment rate	Unemployment rate	Youth unemployment rate	Long-term unemployment	Job vacancy rate
Czech Republic	2000	65	8.7	17	50	.
	2004	64.2	8.3	19.9	51	1.4
	2008	66.4	4.5	9.4	50.9	3.4
Hungary	2000	56.3	6.4	12.3	47.8	.
	2004	56.8	6.1	14.4	45	1
	2008	56.3	7.8	19.5	45.5	1.4
Poland	2000	55	16.1	35.7	44.7	.
	2004	51.7	19	40.1	53.7	.
	2008	58.5	7.6	18	34.4	1
Slovakia	2000	56.8	18.8	36.9	54.7	
	2004	57	18.2	32.8	63.9	.
	2008	61.5	10.3	19.1	73.4	1.4
Slovenia	2000	62.8	6.7	16.4	62.7	
	2004	65.3	6.3	14	53.1	0.9
	2008	67.7	4.6	11.1	44	1.1
Bulgaria	2000	50.4	16.4	33.3	58.7	.
	2004	54.2	12.1	24.5	57.4	0.9
	2008	63.3	6.2	13.8	50.7	1
Romania	2000	63	7.3	17.8	49.2	.
	2004	57.7	8.1	22.3	59	1.7
	2008	58.7	6	18.6	42.3	2.1
Estonia	2000	60.4	12.8	23.5	47.1	.
	2004	63	9.7	23.5	52.4	2.4
	2008	69.7	4.1	8.2	36.6	2.7
Latvia	2000	57.5	13.7	21.3	57.2	.
	2004	62.3	10.4	19.3	44.6	1.3
	2008	69.6	6.4	11.3	27.2	1.4
Lithuania	2000	59.1	16.4	28.6	50.4	.
	2004	61.2	11.4	21.2	53.3	0.7
	2008	64.3	4.8	10.5	18.2	1.8
EU-15	2000		7.7	16.1	45.4	.
	2004		8.1	15.9	41	2
	2008			14.5	37.8	2.1

Note: Employment rate: employed in % of working age population (15-64 years); long-term unemployment: share of unemployed for more than one year in total unemployment. Job vacancy rate: number of job vacancies/ (number of occupied posts + number of job vacancies)*100.

Data for 2008 refer to the first two quarters.

Source: Eurostat.

I.3.2 Wage developments in the NMS

Wage differentials between the country of origin and the target country are considered as one of the motives for migration. As Table 3a and 3b show, wages in the NMS are still very low in comparison to EU-15 economies (the table presents comparative Austrian wage levels) but they have grown significantly along with high GDP growth over the past couple of years. This is particularly the case for Romania, Latvia and Poland. Wage levels converted at PPP (purchasing power parity) indicate a higher degree of wage convergence, but the difference is still significant.

Table 3a

Average gross monthly wages, total, in EUR

	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007
Czech Republic [1]	144	242	382	434	515	531	565	638	713	781
Hungary [2]	167	239	337	403	504	541	578	638	648	736
Poland [3]	85	220	472	557	544	497	501	586	636	711
Slovak Republic	140	187	268	286	316	346	395	448	504	596
Slovenia [4]	707	731	935	988	1041	1083	1120	1157	1213	1285
Bulgaria [5]	378	87	115	123	132	140	150	166	184	220
Romania	109	105	142	162	170	177	202	267	325	422
Estonia	.	160	314	352	393	430	466	516	601	725
Latvia	.	131	267	283	297	298	314	350	430	566
Lithuania	.	93	262	274	293	311	333	370	433	522
Austria	1634	2281	2390	2428	2483	2530	2577	2639	2708	2781

Table 3b

Average gross monthly wages, total, at PPP (EUR)

	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007
Czech Republic [1]	512	630	833	893	947	1019	1064	1116	1189	1269
Hungary [2]	451	530	706	804	911	962	971	1042	1109	1170
Poland [3]	322	493	894	944	980	1003	1029	1052	1099	1193
Slovak Republic	396	463	628	676	726	726	773	850	914	999
Slovenia [4]	922	984	1308	1360	1427	1452	1540	1595	1653	1735
Bulgaria [5]	344	339	362	369	396	414	427	462	486	555
Romania	474	392	390	441	459	474	530	576	656	750
Estonia	.	420	599	634	703	756	808	874	983	1111
Latvia	436	391	522	549	592	629	649	698	782	935
Lithuania	.	339	556	577	610	662	688	727	819	935
Austria	1667	1943	2308	2272	2369	2417	2483	2556	2609	2696

1) Enterprises with more than 100, in 1992-1994 with 25 and more, from 1997 with 20 and more employees. - 2) From 1992 enterprises with more than 20 employees, from 1994 to 1998 more than 10, from 1999 more than 5. - 3) Net wages up to 1991. From 1999 including mandatory premium for social security. - 4) Up to 1991 excluding private sector. - 5) Up to 1996 excluding private sector.

Source: wiiw Annual Database incorporating national statistics.

The wage growth depicted in Table 3a is both due to domestic wage growth but also to ongoing (nominal and real) appreciation of the NMS currencies; hence, wages expressed in current euro terms grew in many of the countries even more rapidly than in domestic currencies (see Figure 5).

Figure 5

Average gross monthly wages, 2007

2000=100

▨ EUR ■ national currency unit
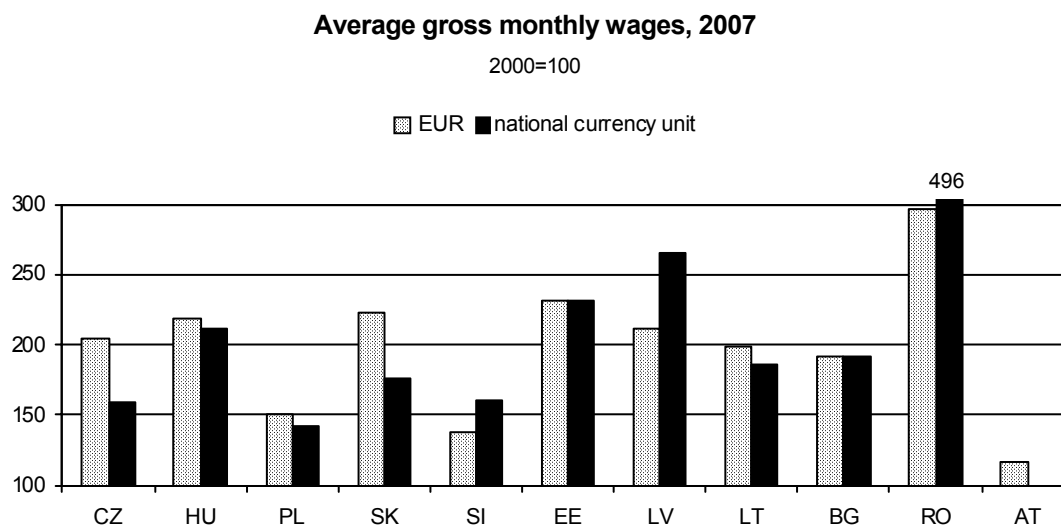
Source: wiiw incorporating national statistics.

I.3.3   Labour demand and supply by educational attainment levels

In the following we examine the developments on the supply and demand side focusing on the skill structure of the labour force of the NMS-7[4] group of countries for the period 2000-2007. We set these developments in relation to those in Austria and the EU-15 economies. This section provides a brief overview of the most important features of structural changes that took place in the labour markets; a more detailed picture is provided by the set of tables on structural developments of labour supply and demand (not only by educational attainment levels, but also by age groups and gender) as well as on structural wage developments to be found in Annex Tables A4-10.

The first set of Figures (6a to 8) refers to changes in the structure of the working-age population as well as to employment and unemployment rates of groups distinguished by educational qualification levels[5]. The following are the main interesting features that emerge from this comparison:

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[4]   NMS-7: Czech Republic, Hungary, Poland, Slovak Republic, Slovenia, Bulgaria, Romania.

[5]   The analysis here is based on data from the Labour Force Survey (LFS), which enable us to break down population, labour force and employment and unemployment by educational attainment level (defined in terms of ISCED 97) and employment by (NACE rev. 2) sector of activity. Educational attainment is divided into 'low' (those with lower secondary education or below, ISCED 0-2), 'medium' (those who have completed upper secondary education or training, ISCED 3 or 4) and 'high' (those who have completed tertiary education, ISCED 5 or 6). The division into only three groups is determined by the available data. For the 'medium' category in particular, a more detailed classification between those

- As regards the educational qualification of the working-age population (15-64), Figure 6a shows that the NMS-5[6] have significantly lower shares of 'low-educated' (people with less than completed secondary education) than the EU-15. On average about 20% of the working-age population belongs to this group in the NMS-5 in the year 2007 as compared to about 35% in the EU-15. Their educational structure much more resembles the one of Austria with a share of low-educated of 25%. Only in Romania and Bulgaria is this share about 30%, i.e. still less than in the EU-15. Over the period 2000 to 2007, the share of low-educated was falling in all economies under consideration. However, in the NMS-7 the decline was much more pronounced than in Austria.

Figure 6a

Educational structure of working-age population, 15-64, 2000, 2007
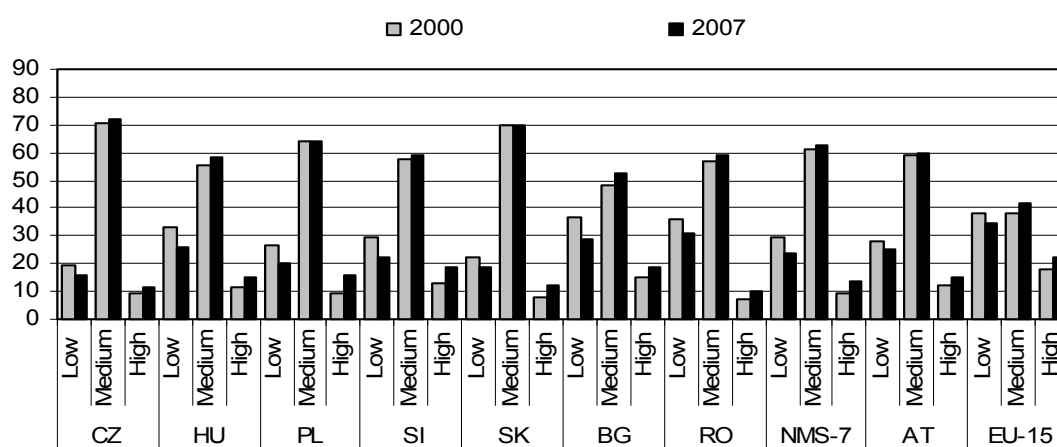
Source: Eurostat-LFS, wiiw calculations.

- On the other hand, the shares of the 'highly educated' (persons with completed tertiary education) are somewhat lower in the NMS-5 and particularly in Bulgaria and Romania than in the EU-15. However, only in the Czech Republic, Slovakia and Romania is the share of highly educated lower than in Austria, where it accounts for about 15% of the working-age population. Hence, compared to the EU-15 economies, the NMS-7 have, like Austria, a very strong representation of the 'medium-educated' skill group (i.e. the group with some completed secondary education) in which we find over 60% of the working-age population, as against just above 40% in the EU-15.

- To get an idea of the changes in the educational structure of the working-age population in the medium-term future, it is worth taking a look at the educational attainment levels of the age cohorts that enter the labour market. An examination of the age group 25-34 is better suited for this purpose than the age group 15-24 since the

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with vocational qualifications and those with more general educational qualifications would have been more informative, but the data for a number of countries are not sufficiently consistent over time to facilitate such a split to be made.

6   NMS-5: Czech Republic, Hungary, Poland, Slovak Republic, Slovenia.

former has predominantly completed not only secondary but also tertiary education. Moreover, the cohorts 25-34 appear to be the most willing to migrate according to studies and surveys (see Part II). Figure 6b shows that, in 2007, the share of low-educated in the age group 25-34 is in Hungary in line with that in Austria, while in all other NMS-5 countries it is, at less than 10%, very much below that level. Only in Bulgaria and Romania about 20% of this younger population group is low-educated, which is comparable to the situation in the EU-15. In Hungary, Poland and Slovenia fast changes in the educational composition of the younger workforce took place over the past seven years, especially when we look at the rise of highly educated as a share of the 25-34 age cohort. In Hungary, Bulgaria and Poland as well as in Slovenia the share exceeds that in Austria substantially and attains the level of the EU-15 in the latter two NMS.

Figure 6b

Educational structure of working-age population, 25-34, 2000, 2007

□ 2000   ■ 2007
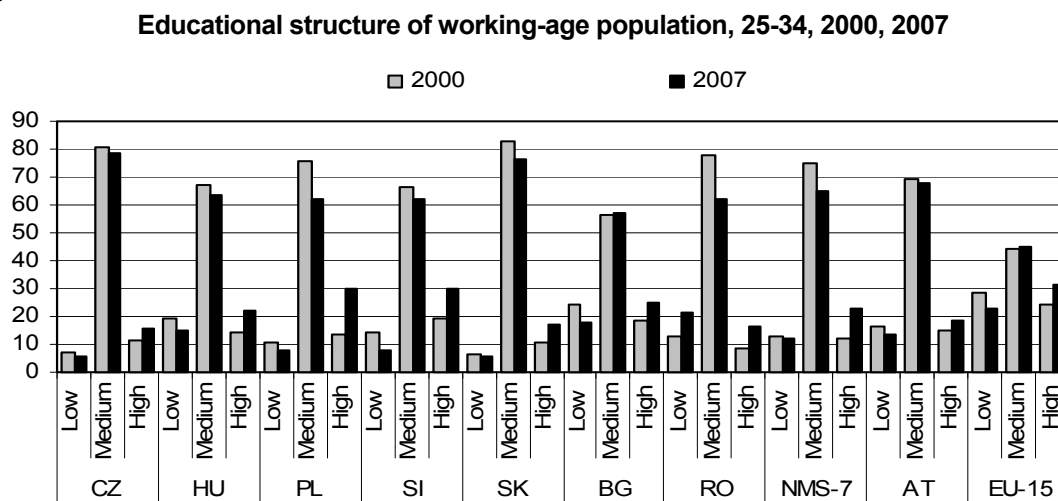
Source: Eurostat-LFS, wiiw calculations.

- If we look at employment rates (i.e. the percentage share of people employed in the respective educational working-age group), we find that there are very similar employment rates in the NMS-7, Austria and the EU-15 as regards employment rates for the highly educated (Figure 7). Above 80% are employed in the group with high educational attainment. Amongst the medium-educated, employment rates of about 70% in the Czech Republic, Slovenia, Slovakia and Bulgaria are comparable to Austria and the EU-15 and are on the rise in the latter two NMS. In Poland, Hungary and Romania employment rates of this educational attainment group have declined slightly in the most recent years and range between 60% and 65%. The big difference between Austria and the EU-15 on the one hand and the NMS-7 on the other is with respect to the low-educated, which show extremely low employment rates in the NMS (below 30% with the only two exceptions of Slovenia and Romania) as against employment rates of over 50% in the EU-15.

Figure 7

Employment rates, 15-64, 2000, 2004, 2007

| Low educated | Medium educated | High educated |
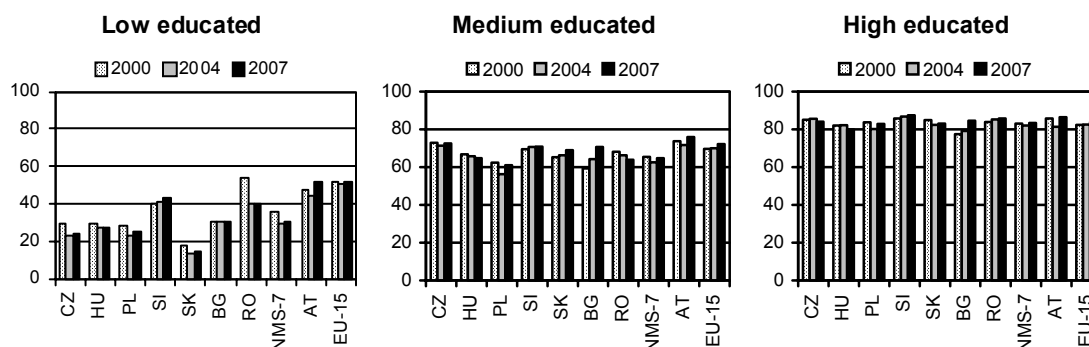
Source: Eurostat-LFS, wiiw calculations.

- The highly unfavourable labour market position of the low-educated in most of the NMS-7 is also borne out by the very high unemployment rates, although one should point to the fact that the situation has improved in the most recent period of 2004 to 2007. (Figure 8). Nevertheless, at 15% the unemployment rate for the low-educated in the NMS-7 region is still considerably higher than in the EU-15 and Austria where it is about 10%. Especially in Slovakia the unemployment rate is exceptionally high, at 45%, and it is still above 20% in the Czech Republic. Considerable improvements in the labour market situation of the low-educated took place in Slovenia, Bulgaria and, particularly so, in Poland, where the unemployment rate of this educational attainment group fell from about 30% in 2004 to 16% in 2007. Contrary to this tendency, in Hungary the unemployment rate of the low-educated rose substantially, to 17.5%. It is worth noting the relatively low unemployment rates (by LFS definition) for that group in Romania, in spite of rather low employment rates of the low-educated; this indicates a high proportion of inactive persons or those working informally (without declaring this in LFS inquiries). For the medium-educated in the Czech Republic, Hungary, Bulgaria and Romania the unemployment rate in 2007 ranges between 5% and 7%, which is about the EU-15 level and not much above the Austrian one. In Poland and Slovakia the labour market improvements resulted in a halving of unemployment rates for the medium-educated, but the rates still range at about 10%. For the highly educated, unemployment rates in most NMS-7 are at a level similar to that in Austria. Only in Poland and Slovakia is the unemployment rate, at about 5%, slightly above the EU-15 level.

- The overall picture emerging from this analysis is that in the NMS-7 problems in the labour market are quite strongly concentrated on the group of low-educated – although the usual hierarchy in labour market outcomes in employment and unemployment rates across the three educational groupings applies to all countries; however, it is more pronounced for the NMS-7. The more favourable situation on the NMS-7 labour markets in the period 2000-2007 resulted in a fall in unemployment rates for the medium- and low-educated (except for the case of Hungary, were the latter group experienced a rise

in unemployment). Still, employment rates increased only slightly for the medium- and highly educated in the NMS-7, which points to the effect that the low-educated more often moved from unemployment into inactivity instead of finding new jobs.

Figure 8

Unemployment rates, 15-64, 2000, 2004, 2007
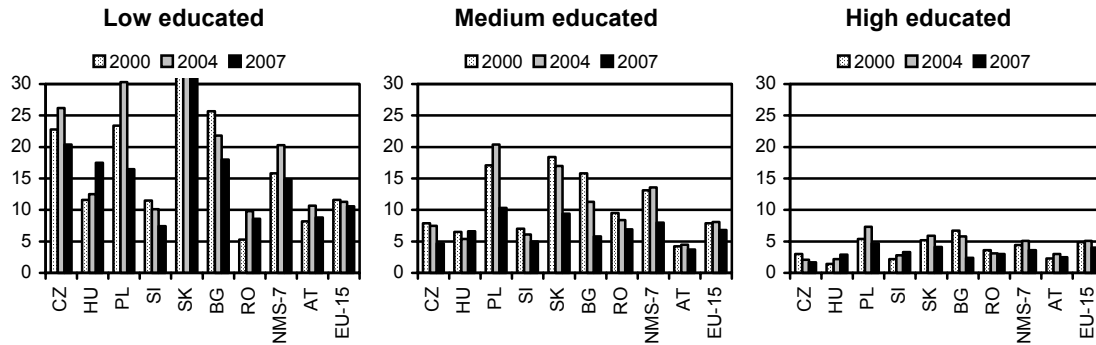
Source: Eurostat-LFS, wiiw calculations.

Employment growth and structural shifts of labour demand

As we discussed in section I.3.1 employment growth picked up from 2000 onwards and was quite substantial in some countries of the NMS-7 group.

In the following we examine the shifts in the employment structure which took place in the period 2000-2007 in order to find out which skill groups benefited most from the observed changes in labour demand in the NMS-7. In general, the analysis of the contributions to overall employment growth for educational attainment groups[7] (see Figure 9) reveals that in the NMS-7, new jobs were created for the medium- and highly educated workforce, while labour demand for low-educated even declined. This is in line with the structural employment changes that took place in the EU-15, while in Austria overall employment growth positively affected also the demand for the low-educated. Especially in Slovakia, Poland and Bulgaria the reduction of jobs of low-educated is rather surprising, since in those three countries overall employment growth was quite strong and unemployment rates fell substantially in the latter two NMS. This points to the fact that in the overall period 2000-2007 (but also in the most recent years 2004-2007, as can be seen in Annex Table A8) low-educated still left the labour market and moved into inactivity or took advantage of temporary or permanent migration, thereby lowering labour supply and demand of low-educated at the same time.

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[7] Contributions to total employment growth are calculated by weighting the employment growth rates of individual educational attainment groups by their share in total employment.

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Figure 9

Contribution to average annual employment growth

by low-, medium- and highly skilled, 15-64, 2000-2007
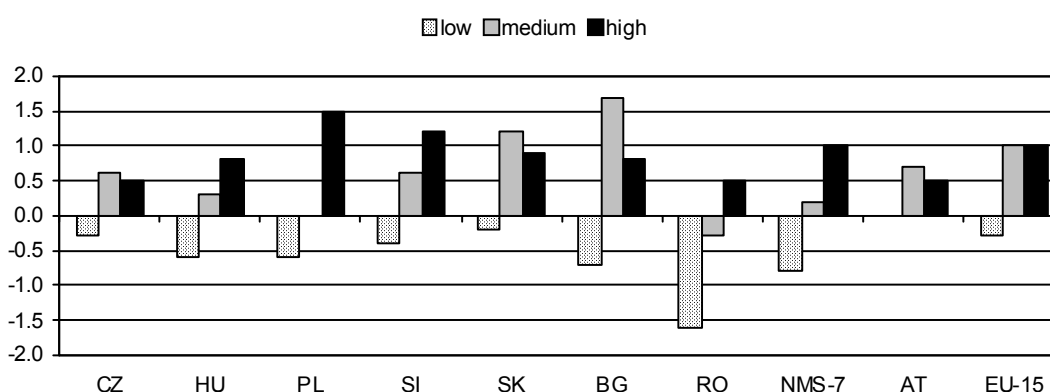
Source: Eurostat-LFS, wiiw calculations.

Structural wage developments

In the following we make use of data on wage developments by educational attainment levels and by age groups.[8] Figure 10 shows that, in 2007, average gross monthly wages in all countries observed are still well below the level of Austria, where they amount to EUR 2695 or EUR 2781 when measured at purchasing power parities (PPP). In the NMS-5 average wages range between 37% in Slovakia and 64% in Slovenia, in per cent of the Austrian wage level in PPP terms. When measured in EUR terms, the wage levels fall to 21% of the Austrian value for Slovakia and to 46% for Slovenia. A detailed picture of the regional variation of wage levels in EUR terms can be found in chapter I.4 of the report. However, Figure 10 reveals that the welfare situation of highly educated employees is approaching the level of the average income earner in Austria, particularly so in the Czech Republic and Hungary; in Slovenia highly educated employees even earn more than the average Austrian wage, when measured in PPP. The structure of wages by educational attainment level is quite similar in all NMS-5: low-educated earn on average about 64% of the mean wage and medium-educated about 86% of the mean national gross wage. Therefore the divergence of wages of low-educated from the average Austrian wage level is substantial, even when measured at PPP, ranging between 24% in Slovakia and 43% in Slovenia; measured in EUR terms the range is between 14% and 31%.

To examine the comparative real income gains experienced by different educational groups it is best to take a look at the growth rates of gross wages measured in PPP by attainment levels. Figure 11 depicts growth rates in comparison to the average growth in Austria, which amounted to 2.2% annually in the period 2000-2007. The positive growth

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[8] The data on wages differentiated by skills and age groups that are presented in the following are estimations based on gross monthly wage data delivered by the national statistical offices and structural earnings data from the EUKLEMS database. This kind of data is only available for the NMS-5, not for Bulgaria or Romania.

differentials experienced in all NMS-5 were particularly high in the Czech Republic, Slovakia and Hungary where the growth rates of average gross wages ranged between 6% and 7.5%. In Poland and Slovenia average wages still grew at more than 4%, almost twice as fast as in Austria. In most of the NMS-5 the dispersion of wage growth by educational attainment level was quite small, which implies that all wage earners benefited equally from the observed rise in earnings. Only in Poland did wage growth of highly educated employees outpace that of other groups, while in Slovenia low-educated earners benefited most in the years 2000-2007.

Figure 10

Average gross monthly wages by skills, in EUR and at PPP (EUR), 2007
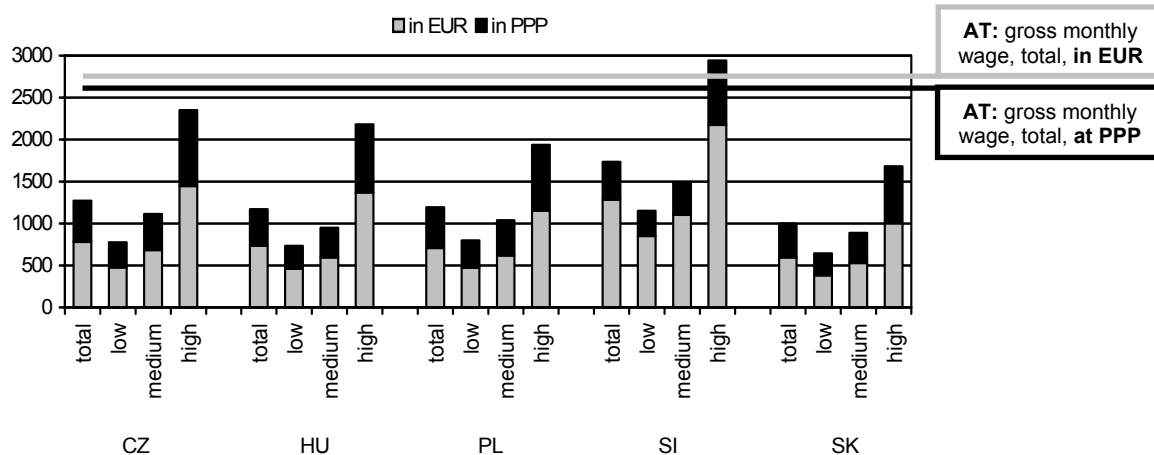
Source: EUKLEMS database, wiiw Annual Database incorporating national statistics, wiiw calculations.

Figure 11

Growth of gross monthly wages by skill groups at PPP (EUR)

average annnual rates, 2000-2007
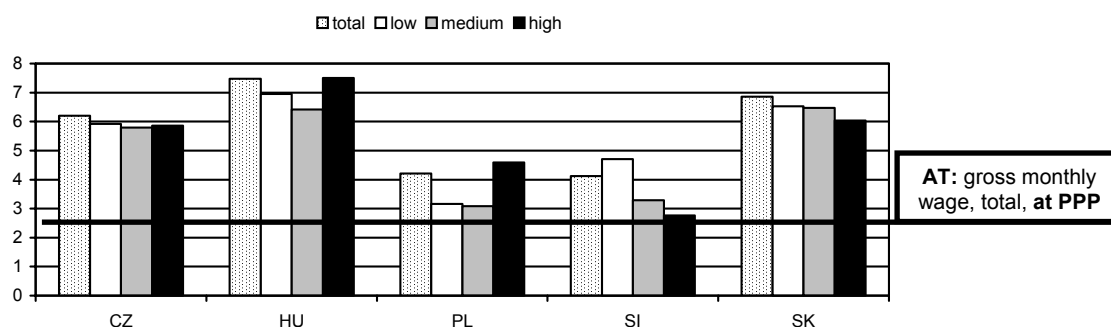
Source: EUKLEMS database, wiiw Annual Database incorporating national statistics, wiiw calculations.

Figure 12 depicts the growth of gross monthly wages by age groups (no such data are available for Slovenia). We would expect higher wage growth for younger age groups, since those cohorts that have entered the labour market more recently exhibit higher educational attainment levels on average in comparison to the total working-age population. Therefore the stronger rises in earnings of persons aged 15-29 in Hungary and

the Slovak Republic is unsurprising, while in the Czech Republic wage increases were more equally distributed. In Poland, where the youth unemployment rate was the highest among the NMS until recently (see above), this depressed wage growth for young people.

Figure 12

Growth of gross monthly wages by age groups at PPP (EUR)

average annnual rates, 2000-2007

□total □15-29 □30-49 ■50-64

Source: EUKLEMS database, wiiw Annual Database incorporating national statistics, wiiw calculations.

I.4 Regional labour market developments in the NMS

Labour market developments at the level of regions, defined here at the NUTS-2[9] level (corresponding to the Austrian 'Bundesländer'), are not independent of labour market developments at the national level. This links the analysis in the present chapter to that in the previous ones: the economic policies and strategies followed as well as the regulations passed at the national level affect the regions within a country in more or less the same way. As a consequence, there is the (empirically observed) tendency for the pattern of employment at the national level and the changes therein to be indicative of the labour market developments at the level of regions.

Still, regions do differ by a multitude of factors, such as their geographic position, their sectoral structure of economic activity, their access to markets, their market potential, the endowments with human skill and natural resources and their infrastructure. All of these factors induce a certain amount of variability in the regions' reactions to developments at the national level. To illustrate, the opening of the markets in the new member states in the last decade of the 20th century was particularly beneficial to a small number of regions, like the regions at the Western borders of their countries. These regions' comparatively good access to Western markets was one of the main factors for large inflows of foreign capital that were key to restructuring and modernizing the regions' economies. This raised these regions' potential (as compared to regions further away from Western borders) to generate incomes and jobs, and induced a significant degree of heterogeneity across the regions

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[9]   NUTS: Nomenclature of territorial units for statistics.

within the individual new member states, with respect to their incomes per head and labour market conditions. Likewise, experience shows that regions with a rich endowment of a highly qualified labour force (and a good market potential) faced fewer problems than other regions to adapt to the new economic paradigm, as their endowments facilitated the change to modern production and services techniques and increased their attractiveness to foreign investors, which in turn led again to comparatively higher growth of incomes and employment.

The analysis of regional development that follows will, first, address overall employment developments in the 53 regions in the ten countries of Central and Eastern Europe (CEE). Second, the structure of employment by educational groups is investigated, followed by an analysis of the regional employment and unemployment rates and the changes therein over time. Despite limited data availability, this chapter will also comment on differences in regional wage levels, as well as on the extent of commuting in the CEE regions. The main data source of the analysis is the European Labour Force Survey (LFS), which is the most comprehensive and up-to-date data source at the regional level for this purpose; the analysis will cover the years 2000 to 2007. Most of the analysis will refer to the population aged 25 to 64 years.

Mixed trends in employment growth in the NMS regions

Total employment of the population aged 25 to 64 year, as measured by the LFS, grew in the aggregate over all NMS regions by 2.4% per year from 2004 to 2007 (Table 4). Expressed in absolute terms, the number of employed grew by around 2.7 million in this period. Thus, the average employment growth rate was about 0.3 percentage points higher than that of the EU-27 and 0.4 percentage points higher than the Austrian employment growth rate. While the average employment growth performance was remarkable, the experiences across countries and regions were far from homogenous. In 2004-2007, in Bulgaria, Estonia, Poland and Slovakia the employment growth rate averaged about 2.6-3.8% per year, whereas growth in the Czech Republic, Lithuania, Romania, Slovenia and particularly Hungary was lower than the EU-27 and the Austrian average, with growth rates ranging from 1.7% to 0.6% per year.

The degree of heterogeneity in employment growth further increases when referring to the level of individual regions. Though, as a common rule, employment growth in individual regions by and large tends to reflect the employment developments in the country they are situated in, this rule is not without exceptions. Thus, for example, in Hungary there is a split between the capital city region around Budapest and the two more industrialized North-Western regions (Közép-Dunántúl and Nyugat-Dunántúl) that are close to the Austrian border, on the one hand, and the more agricultural regions in the South and the old industry region in the North of Hungary, on the other hand. While employment tended to grow in the former three regions, if only slightly as compared to the EU-27 average, the

number of employed remained nearly constant or even declined in the latter regions (the South-East region of Dél-Alföld bordering Romania represents a certain exception to this). A similar pattern is found in the Czech Republic, where particularly in the two Northern regions bordering on Germany employment grew below the Czech average, especially so in the Severozápad region, formerly a centre of (coal) mining and traditional industry. With respect to the other regions, employment growth was above the EU-27 average in the region around the capital city of Prague as well as Strední Morava, while in the two regions bordering on Austria employment increased more or less *pari passu* with the Czech average. A similar situation exists in Poland and Romania, where on the one hand the capital cities achieved relatively high growth rates of employment (5.2% in the Warsaw region and 2.9% in the Bucharest region). On the other hand, in Romania employment growth in the coastal region around the major port in Varna (Vest region) was similar to that of Bucharest, while in Poland in two regions on the German border as well as in the region South of the capital city region employment grew by about 6% per year in 2004-2007. Though in most other regions of the two countries employment increased still at a respectable pace, both countries also have problem regions where employment nearly stayed constant or even declined (this applies especially to the Polish region Kujawsko-Pomorskie, situated between the regions around Poznan and around Warsaw, and the two Eastern, highly agricultural regions in Romania).

Table 4

Total employment, 2004-2007, LFS population aged 25-64

nuts		2004	2005	2006	2007	Employment growth 2000-2004	Employment growth 2004-2007
eu-27	**European Union**	**180,042**	**184,741**	**188,320**	**191,902**	**1.9**	**2.1**
at	**Austria**	**3,217**	**3,265**	**3,348**	**3,413**	**0.1**	**2.0**
at11	Burgenland (A)	108	109	113	117	0.0	2.8
at12	Niederösterreich	624	630	645	657	0.7	1.8
at13	Wien	633	640	669	674	-1.7	2.1
at21	Kärnten	210	212	213	219	0.4	1.4
at22	Steiermark	459	470	482	487	0.0	2.0
at31	Oberösterreich	551	553	569	585	0.5	2.0
at32	Salzburg	215	222	222	228	0.3	2.0
at33	Tirol	276	283	288	294	1.7	2.2
at34	Vorarlberg	143	146	148	152	1.3	2.2
nms10	**New Member States (CEE)**	35,845	36,561	37,479	38,518	**-0.3**	**2.4**
bg	**Bulgaria**	**2,649**	**2,720**	**2,831**	**2,959**	**1.0**	**3.8**
bg31	Severozapaden	292	292	304	320	.	3.2
bg32	Severen tsentralen	314	314	318	334	.	2.1
bg33	Severoiztochen	323	353	369	378	.	5.3
bg34	Yugoiztochen	380	388	405	411	.	2.6
bg41	Yugozapaden	809	834	876	923	.	4.5
bg42	Yuzhen tsentralen	531	539	559	593	.	3.8
cz	**Czech Republic**	**4,257**	**4,337**	**4,397**	**4,474**	**1.1**	**1.7**
cz01	Praha	548	564	578	578	0.5	1.8
cz02	Strední Cechy	490	499	515	527	2.7	2.4
cz03	Jihozápad	503	516	520	530	1.0	1.7
cz04	Severozápad	452	455	457	460	1.5	0.5
cz05	Severovýchod	618	628	632	643	1.0	1.3
cz06	Jihovýchod	675	684	687	706	0.9	1.5
cz07	Strední Morava	493	498	516	526	0.9	2.2
cz08	Moravskoslezsko	478	493	493	505	0.6	1.8

Table 4 contd.

Table 4 (contd.)

nuts		2004	2005	2006	2007	Employment growth 2000-2004	Employment growth 2004-2007
ee	**Estonia**	**519**	**527**	**555**	**560**	**1.0**	**2.6**
hu	**Hungary**	**3,569**	**3,601**	**3,635**	**3,635**	**1.9**	**0.6**
hu10	Közép-Magyarország	1,126	1,149	1,157	1,164	2.3	1.1
hu21	Közép-Dunántúl	415	421	426	429	1.5	1.1
hu22	Nyugat-Dunántúl	385	389	393	400	1.3	1.2
hu23	Dél-Dunántúl	323	328	326	312	1.4	-1.1
hu31	Észak-Magyarország	395	386	391	391	2.3	-0.3
hu32	Észak-Alföld	478	475	487	480	2.9	0.1
hu33	Dél-Alföld	447	451	454	460	0.7	1.0
lt	**Lithuania**	**1,307**	**1,343**	**1,350**	**1,372**	**1.1**	**1.6**
lv	**Latvia**	**880**	**885**	**918**	**938**	**1.9**	**2.1**
pl	**Poland**	**12,205**	**12,507**	**12,818**	**13,541**	**-1.0**	**3.5**
pl11	Lódzkie	975	994	1,012	1,108	-1.8	4.4
pl12	Mazowieckie	1,741	1,763	1,890	2,028	-1.0	5.2
pl21	Malopolskie	1,056	1,092	1,131	1,124	-2.0	2.1
pl22	Slaskie	1,461	1,493	1,499	1,592	4.9	2.9
pl31	Lubelskie	771	798	789	842	-1.5	3.0
pl32	Podkarpackie	636	658	683	712	-0.9	3.8
pl33	Swietokrzyskie	426	449	475	510	-2.6	6.2
pl34	Podlaskie	371	375	376	400	-3.3	2.6
pl41	Wielkopolskie	1,089	1,105	1,127	1,157	-2.9	2.0
pl42	Zachodniopomorskie	490	497	489	495	-2.1	0.3
pl43	Lubuskie	339	352	373	401	2.0	5.8
pl51	Dolnoslaskie	858	915	973	1,018	-1.7	5.9
pl52	Opolskie	289	315	302	322	-4.9	3.7
pl61	Kujawsko-Pomorskie	673	652	633	659	-2.0	-0.7
pl62	Warminsko-Mazurskie	428	440	463	495	-0.9	5.0
pl63	Pomorskie	604	611	604	679	-0.9	4.0
ro	**Romania**	**7,708**	**7,823**	**8,057**	**8,063**	**-2.2**	**1.5**
ro11	Nord-Vest	945	963	995	992	-2.6	1.6
ro12	Centru	849	866	909	899	-2.8	1.9
ro21	Nord-Est	1,362	1,376	1,360	1,389	-0.8	0.7
ro22	Sud-Est	964	978	1,019	993	-2.4	1.0
ro31	Sud - Muntenia	1,182	1,189	1,217	1,235	-2.9	1.5
ro32	Bucuresti - Ilfov	873	889	950	950	-0.3	2.9
ro41	Sud-Vest Oltenia	846	863	876	862	-3.6	0.6
ro42	Vest	687	700	731	743	-2.7	2.7
si	**Slovenia**	**824**	**834**	**845**	**861**	**1.3**	**1.5**
sk	**Slovakia**	**1,928**	**1,983**	**2,073**	**2,116**	**1.3**	**3.2**
sk01	Bratislavský kraj	268	279	287	291	-0.6	2.9
sk02	Západné Slovensko	708	729	763	774	2.5	3.0
sk03	Stredné Slovensko	457	474	493	500	0.8	3.0
sk04	Východné Slovensko	495	501	530	552	1.0	3.7

Source: LFS

Educational shares

The analysis at the national level has shown that labour market prospects of individuals may show some variation depending on their age, gender and level of qualification. Such differences in individual characteristics may matter even more at the level of regions, given that regions themselves are highly differentiated. Thus labour market prospects for the low-skilled part of the population (i.e. with completed primary education) tend to be better in regions where the services sector, which for this group is the main source of employment (apart from agriculture), accounts for a high share of employment. Furthermore, the educational structure of employment is strongly related to the educational structure of the total population and thus to the skill structure of labour supply. At the same time the skill quality of labour supply is an important determinant for companies' investment decisions,

which, in turn, generate new jobs. Thus, the employment situation in regions that have a comparatively high share of highly skilled labour tends to be better than elsewhere. Furthermore, since the skill structure of employment is usually also correlated not only with the structure of economic activities in the regions but also with the level of income per head, the share of the services sector in highly skilled, high-income regions is higher than in less-skilled, lower-income regions. Consequently, not only do high-skill regions provide good prospects for the better educated segments of the labour force, but there are also positive employment spillovers to the low-skilled in such regions.

In the following analysis we shall identify the same three groups according to their level of educational attainment as in chapter I.3: a low-skill group, covering the population with completed primary education; a medium-skilled group with completed secondary education; and a highly skilled group with completed tertiary education. All results presented below are for the population aged 25 to 64 years.

As illustrated in Table 5, the educational structure of employment in the NMS as well as in Austria is significantly different from that of the EU-27 countries on average: in the NMS the share of employed with completed primary education is significantly lower (11% in the NMS on average compared to 23% in the EU-27 in 2007), while the share of employed with completed secondary education is much higher (67% in the NMS against 49% in the EU-27). Basically, this characteristic also holds for every single region in the NMS except for two Romanian regions. As far as the share of employed with tertiary education in total employment is concerned, the situation is more heterogeneous. While in Estonia and Lithuania this share is much higher than in the EU-27 on average (36.5% and 33.7% respectively, in 2007), it is approximately at par with the EU average in Bulgaria, Latvia, Poland and Slovenia, but below this level (by around 10 percentage points) in the Czech Republic, Romania, Slovakia (and also in Austria by around 7 percentage points).

At the regional level the segmentation of the labour market tends to follow the pattern observed at the country level, that is, as a trend, regions in a country with an on aggregate high share of tertiary employed also show a relatively high share of this segment in the regional labour markets, given that the educational systems are much more homogenous within countries and the regions within these countries than across countries. Still, the existing differentiation within countries is largely explained by the type, or sectoral structure, of a region. Thus, in each country the capital cities, being centres of economic activity and education, show by far the highest shares of employed with completed tertiary education and the lowest shares of employed with completed secondary education. Similarly, those regions that tend to have a higher share in manufacturing industry employment as a rule show a higher share of those with secondary employment, while the agricultural regions feature the highest ratios of employed with finished primary education only. This is especially the case for Eastern Polish and Romanian regions.

Table 5

Share of educational groups in total employment, population aged 25-64

nuts		Share of educational groups in total employment, population aged 25-64, 2007			Changes in shares 2000-2004			Changes in shares 2004-2007		
		Primary	Secondary	Tertiary	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
eu27	**European Union**	**23.2**	**48.9**	**27.9**	**-0.8**	**-1.5**	**2.3**	**-2.0**	**0.5**	**1.5**
at	**Austria**	**15.4**	**64.3**	**20.4**	**-3.3**	**-0.7**	**4.0**	**0.8**	**0.0**	**-0.8**
at11	Burgenland (A)	17.2	66.6	16.2	-5.6	4.9	0.7	0.5	-2.1	1.6
at12	Niederösterreich	14.6	67.8	17.6	-4.6	0.5	4.1	1.4	1.3	-2.7
at13	Wien	15.6	57.0	27.4	-2.8	-3.6	6.4	1.5	0.5	-2.0
at21	Kärnten	9.9	70.5	19.6	-1.8	-4.0	5.8	-1.0	1.7	-0.7
at22	Steiermark	12.9	68.1	19.0	-3.7	-1.0	4.8	0.2	-0.1	-0.1
at31	Oberösterreich	18.0	63.3	18.7	-3.5	1.6	1.9	1.1	-1.9	0.8
at32	Salzburg	14.1	65.6	20.3	-2.0	-1.4	3.4	-0.9	1.8	-0.9
at33	Tirol	18.4	62.7	18.9	-2.7	-1.5	4.2	2.4	-2.4	0.0
at34	Vorarlberg	17.8	62.7	19.4	-3.1	1.4	1.7	-2.0	1.8	0.2
nms10	**New Member States (CEE)**	**11.3**	**67.2**	**21.6**	**-3.7**	**0.6**	**3.1**	**-1.7**	**-0.2**	**1.9**
bg	**Bulgaria**	**14.2**	**58.9**	**26.9**	**-2.0**	**-1.3**	**3.3**	**-3.7**	**4.3**	**-0.7**
bg31	Severozapaden	10.2	67.3	22.5	.	.	.	-3.9	6.3	-2.4
bg32	Severen tsentralen	12.9	62.4	24.7	.	.	.	-5.2	7.6	-2.4
bg33	Severoiztochen	19.6	55.3	25.1	.	.	.	-3.0	2.4	0.6
bg34	Yugoiztochen	19.5	59.1	21.4	.	.	.	-1.8	3.6	-1.8
bg41	Yugozapaden	8.4	54.9	36.7	.	.	.	-2.6	2.5	0.1
bg42	Yuzhen tsentralen	18.9	60.9	20.2	.	.	.	-5.7	6.1	-0.3
cz	**Czech Republic**	**5.8**	**78.5**	**15.7**	**-2.7**	**1.7**	**1.0**	**-0.6**	**-0.5**	**1.1**
cz01	Praha	3.0	67.2	29.8	-1.2	-0.3	1.5	-0.4	0.4	0.0
cz02	Strední Cechy	6.3	81.3	12.3	-6.8	4.2	2.6	-0.7	0.3	0.4
cz03	Jihozápad	5.7	80.1	14.2	-2.6	0.3	2.2	-0.6	-0.8	1.4
cz04	Severozápad	9.0	82.3	8.7	-1.7	2.8	-1.1	-1.4	1.0	0.3
cz05	Severovýchod	5.7	82.1	12.2	-3.0	2.5	0.5	-0.6	-0.5	1.1
cz06	Jihovýchod	5.4	77.2	17.4	-1.8	0.5	1.2	-0.7	-0.9	1.6
cz07	Strední Morava	6.3	79.0	14.7	-3.2	2.4	0.8	0.0	-1.7	1.7
cz08	Moravskoslezsko	5.8	79.9	14.3	-2.1	1.8	0.3	0.0	-1.8	1.7
ee	**Estonia**	**7.8**	**55.7**	**36.5**	**-0.9**	**-1.0**	**1.9**	**0.0**	**-1.3**	**1.2**
hu	**Hungary**	**12.2**	**65.6**	**22.2**	**-3.6**	**0.7**	**2.9**	**-1.9**	**1.2**	**0.7**
hu10	Közép-Magyarország	8.6	60.2	31.2	-2.8	-1.4	4.2	-1.9	1.3	0.6
hu21	Közép-Dunántúl	14.8	68.4	16.8	-2.5	1.7	0.7	-2.0	1.3	0.7
hu22	Nyugat-Dunántúl	13.4	70.7	15.9	-4.1	2.9	1.2	-2.2	3.2	-1.0
hu23	Dél-Dunántúl	16.3	65.4	18.3	-4.0	1.3	2.7	1.6	-1.8	0.2
hu31	Észak-Magyarország	11.7	70.8	17.5	-4.8	2.5	2.3	-2.1	2.2	-0.1
hu32	Észak-Alföld	14.2	66.6	19.2	-3.6	1.7	1.9	-2.2	0.9	1.3
hu33	Dél-Alföld	13.7	66.8	19.5	-4.4	0.2	4.2	-3.1	1.0	2.1
lt	**Lithuania**	**7.1**	**59.2**	**33.7**	**0.4**	**19.1**	**-19.5**	**-1.8**	**-2.4**	**4.2**
lv	**Latvia**	**11.6**	**62.8**	**25.5**	**0.2**	**-1.5**	**1.3**	**0.9**	**-2.8**	**2.0**
pl	**Poland**	**8.6**	**67.3**	**24.1**	**-3.5**	**-2.7**	**6.2**	**-1.4**	**-1.4**	**2.9**
pl11	Lódzkie	10.4	65.7	23.9	-2.7	-1.6	4.3	-1.1	-2.7	3.8
pl12	Mazowieckie	7.6	59.5	32.9	-4.5	-4.4	8.9	-1.5	-4.5	6.0
pl21	Malopolskie	8.0	67.4	24.5	-2.6	-1.2	3.8	-2.3	-1.4	3.7
pl22	Slaskie	4.8	72.4	22.8	-2.0	-7.6	9.6	-1.6	0.0	1.7
pl31	Lubelskie	12.0	65.8	22.1	-5.2	-1.2	6.4	-1.8	0.3	1.6
pl32	Podkarpackie	10.6	68.7	20.7	-1.1	-4.1	5.2	-2.0	-0.8	2.8
pl33	Swietokrzyskie	13.9	65.1	21.0	-6.9	-0.5	7.4	1.5	-2.3	0.8
pl34	Podlaskie	13.9	62.2	23.9	-3.5	-1.4	4.9	-4.2	-0.1	4.3
pl41	Wielkopolskie	7.4	72.1	20.5	-4.1	-1.4	5.5	-0.9	-0.9	1.9
pl42	Zachodniopomorskie	8.3	64.1	27.6	-2.0	-3.6	5.5	-2.5	-3.3	5.8
pl43	Lubuskie	8.0	71.7	20.3	-2.3	-3.3	5.7	-0.2	0.9	-0.7
pl51	Dolnoslaskie	6.0	68.9	25.0	-3.9	-3.6	7.5	-1.3	-0.4	1.7
pl52	Opolskie	7.5	71.7	20.9	-4.1	0.0	4.1	-1.4	-1.6	3.0
pl61	Kujawsko-Pomorskie	10.6	72.6	16.8	-3.4	-1.2	4.5	0.7	0.5	-1.3
pl62	Warminsko-Mazurskie	11.1	68.6	20.4	-3.2	-0.3	3.5	-3.6	1.7	1.9
pl63	Pomorskie	7.8	67.5	24.7	-1.8	-2.9	4.7	-1.1	-1.2	2.2

Table 5 (contd.)

nuts		Share of educational groups in total employment, population aged 25-64, 2007			Changes in shares 2000-2004			Changes in shares 2004-2007		
		Primary	Secondary	Tertiary	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
ro	**Romania**	**19.8**	**64.9**	**15.3**	**-5.7**	**3.1**	**2.6**	**-2.4**	**0.7**	**1.7**
ro11	Nord-Vest	19.0	66.6	14.3	-8.7	6.6	2.1	-2.0	0.1	1.8
ro12	Centru	14.6	70.6	14.9	-4.9	1.8	3.1	-1.3	-0.2	1.5
ro21	Nord-Est	27.7	59.9	12.5	-4.3	1.9	2.5	-2.3	0.0	2.2
ro22	Sud-Est	23.4	65.1	11.5	-7.0	7.9	-0.9	-0.4	-1.0	1.4
ro31	Sud - Muntenia	21.8	67.4	10.9	-5.2	3.1	2.1	-3.5	2.5	1.0
ro32	Bucuresti - Ilfov	7.9	59.1	33.0	-2.0	-3.7	5.7	-1.4	-1.5	3.0
ro41	Sud-Vest Oltenia	22.4	64.0	13.5	-7.2	3.4	3.8	-3.1	1.8	1.3
ro42	Vest	16.6	68.7	14.7	-6.4	4.2	2.2	-3.9	4.0	-0.1
si	**Slovenia**	**13.7**	**60.1**	**26.2**	**-3.3**	**-0.1**	**3.4**	**-1.8**	**-1.7**	**3.5**
sk	**Slovakia**	**4.5**	**78.1**	**17.4**	**-2.4**	**-0.2**	**2.6**	**-0.7**	**-0.6**	**1.3**
sk01	Bratislavský kraj	5.3	63.4	31.3	-0.3	-1.5	1.8	0.0	-0.7	0.7
sk02	Západné Slovensko	5.2	80.0	14.8	-2.8	1.0	1.8	-1.1	-1.6	2.7
sk03	Stredné Slovensko	5.3	79.6	15.1	-2.3	-2.1	4.4	-0.3	1.4	-1.1
sk04	Východné Slovensko	2.4	81.9	15.7	-3.2	-0.1	3.3	-0.8	-0.9	1.7

Source: LFS

As far as the changes in the educational structure of employment over time are concerned, an almost constant upgrading of skills is observed for the majority of countries and regions. Thus, from 2000 to 2007 the share of those with completed tertiary education tends to increase (particularly so in Poland and Slovenia), while the share of employed with primary education declines strongly in each region, except for Latvia and Lithuania. The exception to this are the Bulgarian regions, where in contrast to other countries the share of secondary education in total employment increased quite strongly (by around 4% on average), while the share of the other two segments decreased.

Apart from the Bulgarian regions, a number of other regions in the NMS also showed an increase in the share of employed with completed secondary education – mostly those regions where industry, financed by foreign direct investment, is an important part of the economy, such as in the two Western Hungarian regions, some regions in the Czech Republic and the coastal region around Varna in Romania.

Employment rates

The analysis of aggregate employment, employment by type of education and the changes therein gave a first indication of the state of the labour markets in the NMS regions. Still, the preceding analysis only took into account changes in labour demand, while a full assessment of the labour markets also requires the consideration of changes in the supply of labour. In this section the analysis will focus on the developments in the employment rates (in total and by type of education), defined as the ratio of employment and population. Thus the following analysis, by taking into account both the demand and supply side of labour, gives a more accurate picture on the actual situation on the labour markets as it analyses how the probability to find employment differs across regions. Thereby, at least at

first glance, a picture that is slightly different from the results observed above may emerge. Thus, positive employment growth may not necessarily be reflected in increased employment rates, as the labour supply may increase even faster than labour demand. Vice versa, a drop in employment, especially with respect to low-skilled employment, may coincide with an actual improvement of the probability of being employed for those who stay in the labour market, as the number of discouraged or retiring workers may be higher than the actual number of lost jobs.

Employment rates (for the employed population aged 25 to 64 years) vary widely across the NMS countries and regions (Map 1). While in Slovenia, the Czech Republic and the three Baltic states employment rates were at about 74.5-80% and thus 2.5-8 percentage points higher than the EU-27 average employment rate in 2007, employment prospects were less good in the other NMS. In Bulgaria and Slovakia employment rates were at around 70% in 2007 and thus only slightly below the EU average, while in Romania, Hungary and Poland the corresponding numbers were 65-68%. Furthermore, these differences at the country level are not necessarily indicative of the employment situation in the individual regions, as there is an equally wide variation of employment rates across the regions within each country. While in each country there is a general division between the capital cities and most other regions, as employment prospects in the former are mostly better than elsewhere (in fact all capital city regions have employment rates either close to the EU average or considerably above it), in a number of countries there is also a deeper split between regions. Thus, in Hungary there is a clear division between the Western border regions and the four other regions in the South and the (North-) East of the country, with the first two regions showing an employment rate of 70% and 72% respectively, while in the latter regions it ranges from 59% to 63%. Disparities are also found in the Czech Republic, where the employment rates in the two traditional mining regions (one in the North and one in the East) are at around 70% compared to 74-76% in the other regions of the country. The same holds for Slovakia: in the two Western regions (including Bratislava) employment rates are 6-14 percentage points higher than in the Central and Eastern region. In Poland employment rates tend to be higher in the regions centred around larger agglomerations (such as Warsaw, Posnan, and Lodz), but also in some of the agrarian regions in the East. In the latter case the relatively high employment rates are, however, due to the high degree of agricultural employment, which especially in the field of low-educated employment has a kind of 'sponge' function (this is also visible in the employment rate of low-educated, which tends to be higher in the agrarian regions than in most other regions). Basically the same is true for the North-Eastern region in Romania, which in fact has a higher employment rate than the capital city of Bucharest.

As far as the changes in the employment rate over time are concerned, the movements mainly correspond to the patterns observed for total employment growth, given that the population tends to change much less over time than does employment. The

developments at the country level are in many cases indicative of the employment rate changes in the regions, which tend to fluctuate around the country average. Still it is worth noting that in a number of capital cities the employment rates tended to decline or stay constant over time (in Bratislava, Prague and Warsaw). In those regions, though labour demand grew quite strongly over time, labour supply grew even faster, so that as a result overall employment rates shrank.

As far as the regions bordering Austria are concerned, the 2004-2007 increase in the employment rates were below the EU-27 average, except for the Slovak region East of the capital city region Bratislava (Západné Slovensko). Still, seen from the country perspective, the border regions were among the better performing regions within their countries, such as the Western Hungarian region, where the employment rate rose by 2.4 percentage points compared to the Hungarian average of 0.9 percentage points. To some extent this also applies to the two Czech border regions, where employment rates also increased at above country average rates (even though the increase was much stronger in the two Eastern regions in the Czech Republic).

Employment rates by education

The probability of being employed varies widely depending on the level of educational attainment, at the country and even more so at the regional level. Thus over all countries and most regions the employment rates are lowest for those with completed primary education, followed by those with completed secondary education, while the prospects of being employed are usually highest for individuals with a university degree or similar.

At the same time, the regional variation in the overall employment situation, as measured by the total employment rate, is largely determined by the employment opportunities for the low- and medium-skilled, while the employment rate for those with completed tertiary education is high (about 84-85% on average) throughout all regions. Any differences observed in the total employment rates across regions is largely the result of differences in the employment rates for the low-skilled and to a somewhat smaller extent also by the differences in the employment rates for those with completed secondary education. Extreme examples in this respect are the Hungarian and Slovak regions. In both countries employment opportunities for both skill groups are considerably better in the Western regions (including the capital city regions) than in the other regions of the respective country. Thus, in the two Western Hungarian regions the employment rates for the low-educated are around 50% and for the medium-educated around 75%, while in the remaining regions (excluding the Budapest region) the corresponding levels are around 28-39% and 65-68% respectively. In Slovakia the regional differentiation is even more pronounced. Hence the low educated employment rate is about 36% (i.e. 20 percentage points lower than in Austria or in the EU-27 on average) in the Western Slovak region, but even lower (28% and 14%) in the Central and Eastern regions.

A similar situation is observed in most other NMS, such as also in the Czech Republic. In certain regions, particularly in Poland and Romania, the high employment rates of the low-educated are not necessarily an indicator of a prospering labour market. To illustrate, in 2007 the employment rate for those with completed primary education in the Nord-Est region in Romania was at about 72% (i.e. 15 percentage points higher than in the EU-27 on average), while in the two Eastern Polish regions Podlaskie and Lubelskie it was about 50-52% (i.e. around 10 percentage points higher than the national average). In the case of these regions the high employment levels of the low-educated is exclusively due to the agricultural sector, which is much more labour-intensive than elsewhere in Europe and characterized by a high degree of subsistence farming. This situation relieves the pressure on the local labour markets for the time being, but at the same time it represents an impediment to the future development of those regions. Hence a rise in productivity levels – a precondition for increasing the low levels of income and living standards in those agricultural regions – would coincide with a drastic shedding of labour. Given that a large part of those laid off are of the low-skill type who have difficulties finding alternative employment opportunities in other sectors (the more so as the services sector in such regions is generally underdeveloped), this potentially results in huge drops in the employment rate and a corresponding increase in the unemployment rate.

Changes over time

In contrast to employment growth rates, movements in the employment rates over time do not only take into account changes in the number of jobs on offer (i.e. labour demand) but also changes in the potential supply of labour. Therefore, changes in the employment rates (particularly with respects to disaggregated segments of the labour market) provide more insights with respect to whether the probability to actually find employment for those willing to work has increased or decreased over time. As this probability is the result of simultaneous changes in the labour supply and demand side, changes in the employment rate may not always correspond to employment growth, especially in cases where a decline in the number of employed is met by an even stronger decline in the number of those willing to work (either by dropping out of the labour market completely or through outward migration of considerable parts of the labour force).

This is illustrated by the labour market situation of the population with completed primary education. From 2000 to 2007 the low-skilled employment rates decreased in the majority of regions and most strongly so in Polish and especially Romanian regions. However, splitting the period into a pre- and post-2004 period, the decrease was observed to be particularly strong in the first period, while in the second period there was a relaxation of the labour market situation for the low-skilled. The underlying reason for this is that, in the first period, the absolute number of low-skill employment in the regions tended to fall by 23% on aggregate (or by 1.4 million in terms of the actual number of jobs), while the supply with low-skilled population fell only by 14% (or 1.8 million in actual numbers). By contrast,

in the second period the decline of low-skilled employment was weaker (around 7% over all regions, or 0.3 million jobs), while the supply continued to drop at approximately the same speed as before (14% or 1.5 million). As a result the situation for those low-skilled who remained in the labour market improved, at least in relative terms, from 2004. This was the case in most NMS regions, except for one region each in Bulgaria, the Czech Republic and Hungary and three regions in Poland.

Map 1

Employment rates, total employment (population aged 25-64), 2007
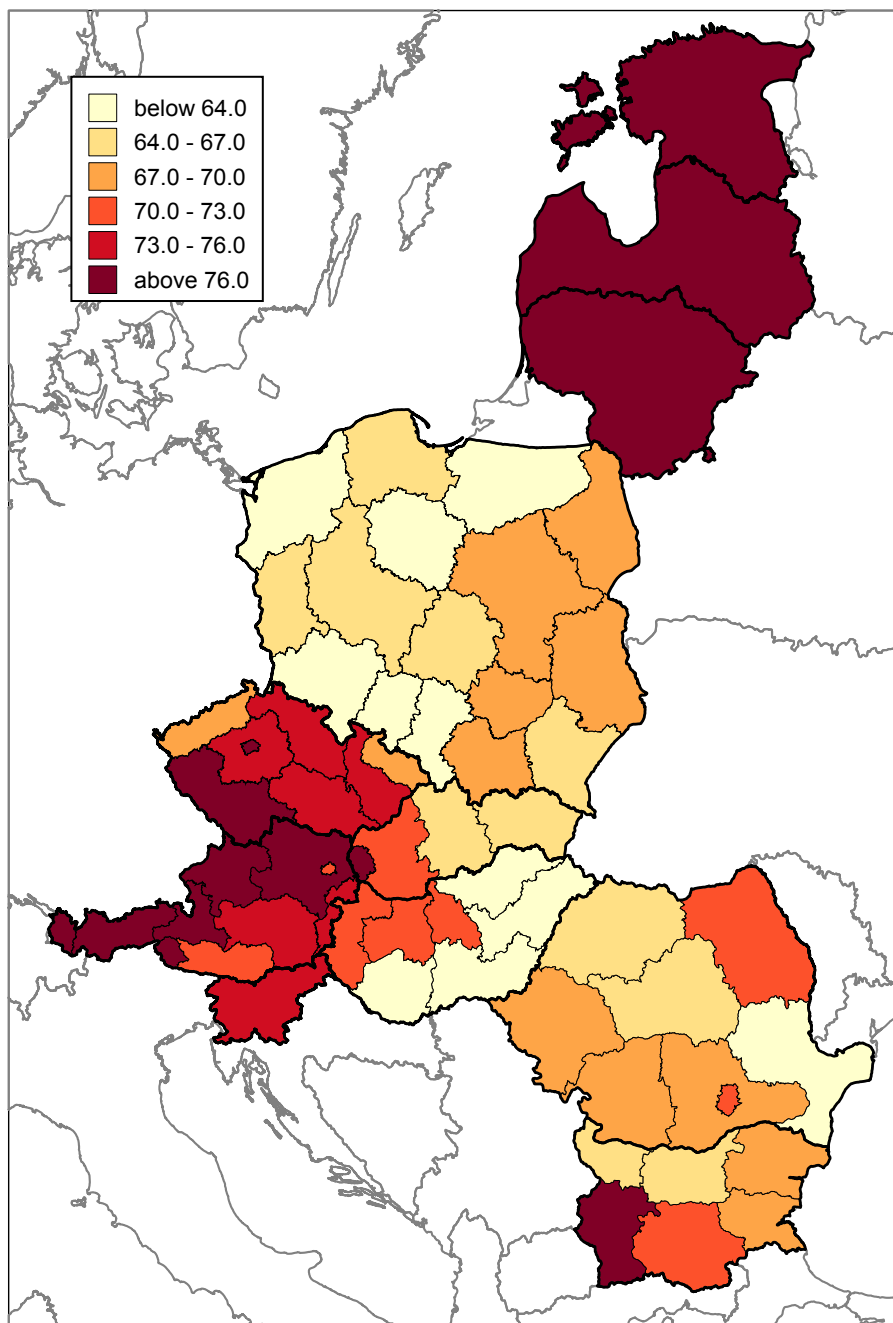
Source: LFS

As for those with completed tertiary education, experiences were slightly more mixed across regions and countries. Although overall there was a strong expansion of high-skill employment throughout most regions, certain regions, amongst them the more prosperous regions in the Czech Republic, Poland and Hungary, had difficulties in meeting the even stronger increase in the supply of highly qualified labour. While in Poland the labour market situation for the highly skilled tended to improve in the latter period, it remained tight in Hungary and the Czech Republic. The overall employment rates of people with completed tertiary education therefore declined in the majority of regions in the Czech Republic and Hungary and in about half the Polish regions from 2000 to 2007. A similar pattern is observed for the Bratislava region.

Regional unemployment

The analysis of regional unemployment partly mirrors the analysis of regional employment rates, as increases in the latter are usually connected with decreases in the former. Given the difference in the definition of the two variables – the employment rate is defined as a ratio to the total population, while the unemployment rate as a ratio to the active population – there are, however, slight differences in the interpretation. Thus, here the unemployment rate is considered to be a risk indicator, expressing the probability of being unemployed when being active on the labour market (looking for a job), while the employment rate is rather considered to be a measure of efficiency (how much of the potential labour supply is actually used). Therefore, while a high unemployment rate in a region is a clear warning signal, a low unemployment rate does not necessarily reflect a healthy labour market, as it may be caused by a large number of discouraged worker who have dropped out of the (active) labour force altogether. Although in many cases low unemployment rates may be indicative of the actual situation on the labour markets, a proper assessment can only be made in conjunction with developments in employment (or activity) rates in the regions.

There is a wide variation in the unemployment situation (for the population aged 25 to 64) across the NMS regions in 2007 (Map 2). In slightly less than half of the total 52 regions (42%) the unemployment rate is below the EU-27 average of 6.1%. The regions with the lowest unemployment rates are the Czech capital city of Prague and its surrounding region Strední Cechy (2.2% and 3.0% respectively), followed by another Czech and two Romanian regions. Amongst those low-unemployment regions there are also Budapest, three Bulgarian regions, the Baltic States as well as all NMS regions on the Austrian border (two Hungarian, two Czech regions, Bratislava and Slovenia).

By contrast, among the 31 regions where the unemployment rate is higher than the EU-average, there all 16 Polish regions as well as the two less prosperous mining and industry regions in the Czech Republic, four Hungarian regions and the remaining Bulgarian and Romanian regions. Unemployment rates are the highest in the Central and the Eastern region of Slovakia (13% and 14%, respectively), closely followed by the two Eastern

regions in Hungary, as well as four regions in Poland, with two of them being German border regions.

Despite this heterogeneity in unemployment rates, there has nevertheless been a common trend of declining unemployment rates over time across all regions, except in Hungary. From 2000 to 2007, but particularly in the period starting in 2004, unemployment rates dropped throughout the regions, most strongly so in the Polish and Slovak regions, to a lesser extent also in the Baltics, Bulgaria and, only slightly, in the Czech and Romanian regions. Although there was a certain differentiation across regions within countries, the changes in the unemployment rates of individual regions tended to closely follow (in direction and size) the development at the country level. In the Hungarian regions the unemployment rate increased, yet more so in the Southern and Eastern regions than in the capital city and Western regions, mainly because more people entered the labour market than new jobs were created in that period (i.e. the activity rate increased more than the employment rate).

As with the other indicators, the risk of being unemployed varies strongly depending on the level of educational attainment. Thus, across all regions, the unemployment rates among those with completed primary education who are willing to work are considerably higher than among those with completed secondary or tertiary education. While this is also the case in Austria or the EU on average, the difficulties for low-educated to find employment are certainly more pronounced in the NMS than in most other countries of the EU. (Mainly due to the fact that the services sector, which is the prime source of employment for this segment of the labour market, is relatively underdeveloped in many NMS regions.) Among the 52 regions, only 13 regions (or 25%) show an unemployment risk for the low-skilled that is around or below the EU average, while in about one third of the regions the risk is at least twice as high. Among the regions with particularly high low-skilled unemployment rates, there are first of all the Central and Eastern Slovak regions with unemployment rates of 48% and 68% respectively. Other regions of similar risk include the two Czech mining regions in the North and East of the country, the Eastern and Southern Hungarian regions, three Bulgarian regions and a number of Polish regions.

As far as the risk of unemployment of the medium- and high-skilled segment of the labour force is concerned, it tends to be more similar to EU standards as the unemployment rates for both groups tend to fluctuate only slightly around the respective EU-27 average across the NMS regions. Furthermore, since the medium-educated represent the major part of the labour force in each region and country, any regional fluctuations in their unemployment rates are closely correlated with the fluctuations of the overall unemployment rate.

As far as concerns the changes in the unemployment rate from 2000 to 2007 by skill groups, there was a common trend of decline in the unemployment rate for the medium- and high-skilled across all regions, except the Hungarian ones. As to the changes in the

unemployment rates for those with completed primary education, developments were more heterogeneous across countries and regions. Thus, over the past seven years the unemployment rate declined in all Polish regions as well as in Slovenia and quite strongly in the three Baltic states, while it tended to increase in the Hungarian regions and in all except one Romanian regions. In comparison, in the Czech Republic, Slovakia and Bulgaria there was a higher within-country heterogeneity: in a number of regions the low-

Map 2

Unemployment rate, 2007, population aged 25-64 years

Legend:
- below 3.0
- 3.0 - 4.5
- 4.5 - 6.0
- 6.0 - 8.0
- 8.0 - 10.0
- above 10.0
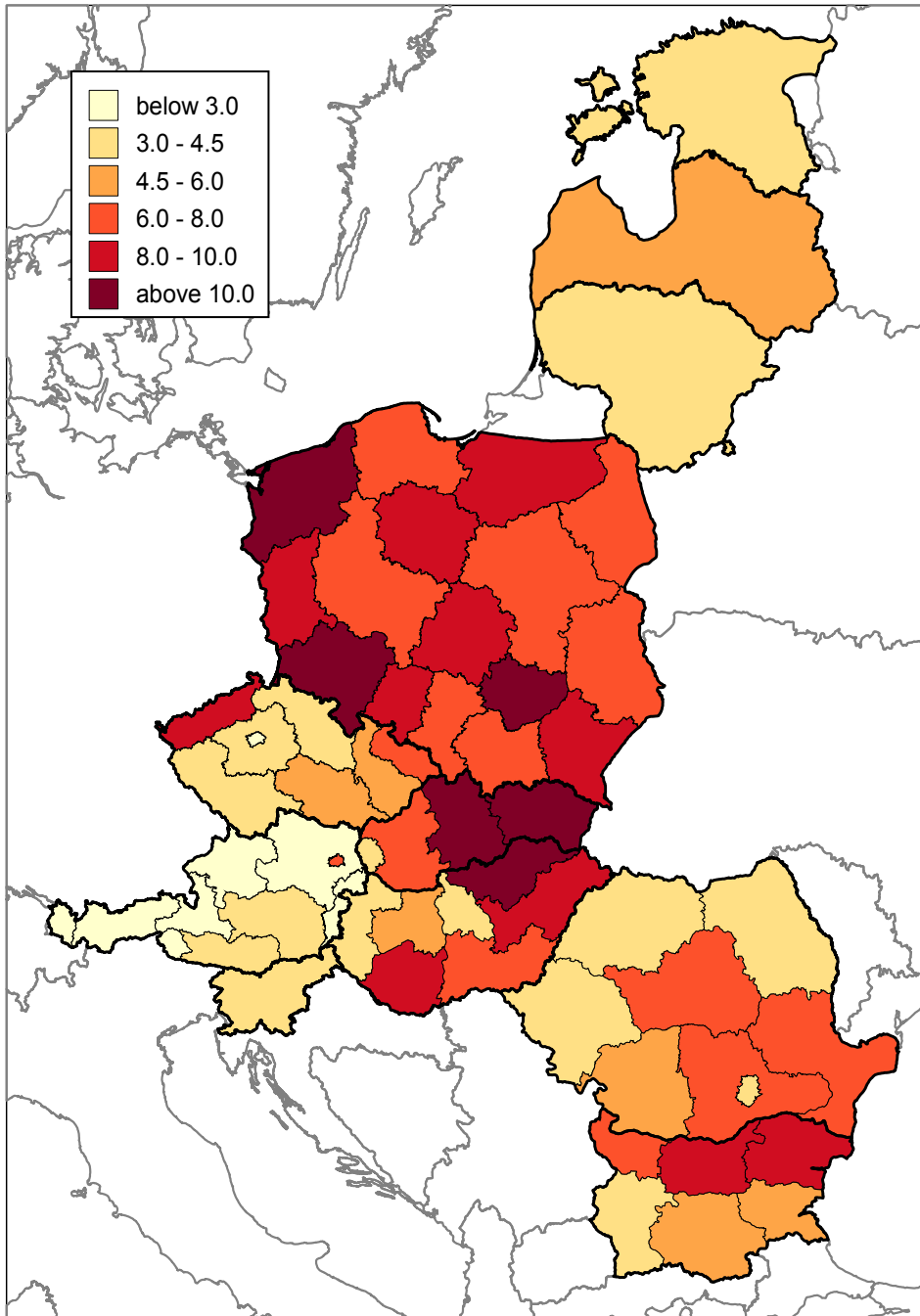
*Source :*LFS.

skilled unemployment rate declined, while it increased in others. This phenomenon was most obvious in Slovakia, where in the Central and Eastern regions the unemployment rate increased by 11% and 20% respectively, while at the same time it declined by 4% in Bratislava and by 7% in Západné Slovensko.

Wages

Differences in wages are one of the key factors that affect the decision to work either in one or another region. However, the decision to travel from the region of residence to another region in order to work is not independent of the distance that has to be bridged. Thus, especially but not exclusively in the case of the NMS regions, relatively small differences in wages may suffice to decide for commuting on a daily basis from one region to a bordering region, enjoying the higher wages on the one hand and the lower costs of living on the other. By contrast, wage differences have to be higher for the decision to commute or migrate from a region farther away to be rational. Not only do travel costs increase with distance; long-range commuting or migration also necessitate the consumption of at least the basic goods and services at the destination region, which eat up a certain share of the surplus earnings received there.

To evaluate how far this applies to the NMS regions, the following analysis will compare the average wages (on aggregate and by sectors) in the NMS regions to the level of wages in the Austrian regions. The data source for this analysis are the regional accounts statistics; wages are calculated at a gross basis, dividing the compensation of employees by the actual number of employees. Furthermore, wages are expressed in exchange rates rather than in purchasing power standards and the time frame is, given data limitations, confined to the situation in the year 2004 (which is the latest year available in the regional accounts statistics).

Looking at the regional distribution of wages, the average wages at the country level are to some extent biased by a capital city effect. Hence in each NMS, but not only there as the Austrian and other examples illustrate, wages in the capital cities (or other major conurbations) are higher than elsewhere, at least in nominal terms (disregarding differences in the price levels across regions that are supposed to reduce the difference in real wages between the capital cities and other regions). In fact, it is indicated that in each NMS (and in Austria) the capital cities are the only regions where the wage level is above the respective country's average wage level, while wages in all other regions are below the country average (except for one region each in Poland and Romania). The highest dispersion of wages is found in Hungary. There the average wage of the two least prosperous regions in the South are only about 75% of the country average, closely followed by the two Eastern regions where wages are about 80% of the country average. In the Hungarian border region to Austria, wages are about 89% of the Hungarian average. A similar dispersion is evident in Bulgaria and Romania: In the former country the wage levels in the two central regions is

about 20% lower than the country average, while in the two coastal regions wages are somewhat higher but still about 5-8 percentage points lower than the Bulgarian average wage. In Romania wages are lowest in the agricultural region in the North-East (about 80% of the Romanian average). In the Czech Republic, Poland and particularly in Slovakia the regional dispersion of wage levels is less pronounced. Thus the range of wages across

Map 3

Average wages, in per cent of the Austrian average (Austria = 100), 2004

below 10.0
10.0 - 20.0
20.0 - 25.0
25.0 - 30.0
40.0 - 51.0
89.0 - 95.0
95.0 - 100.0
100.0 - 120.0
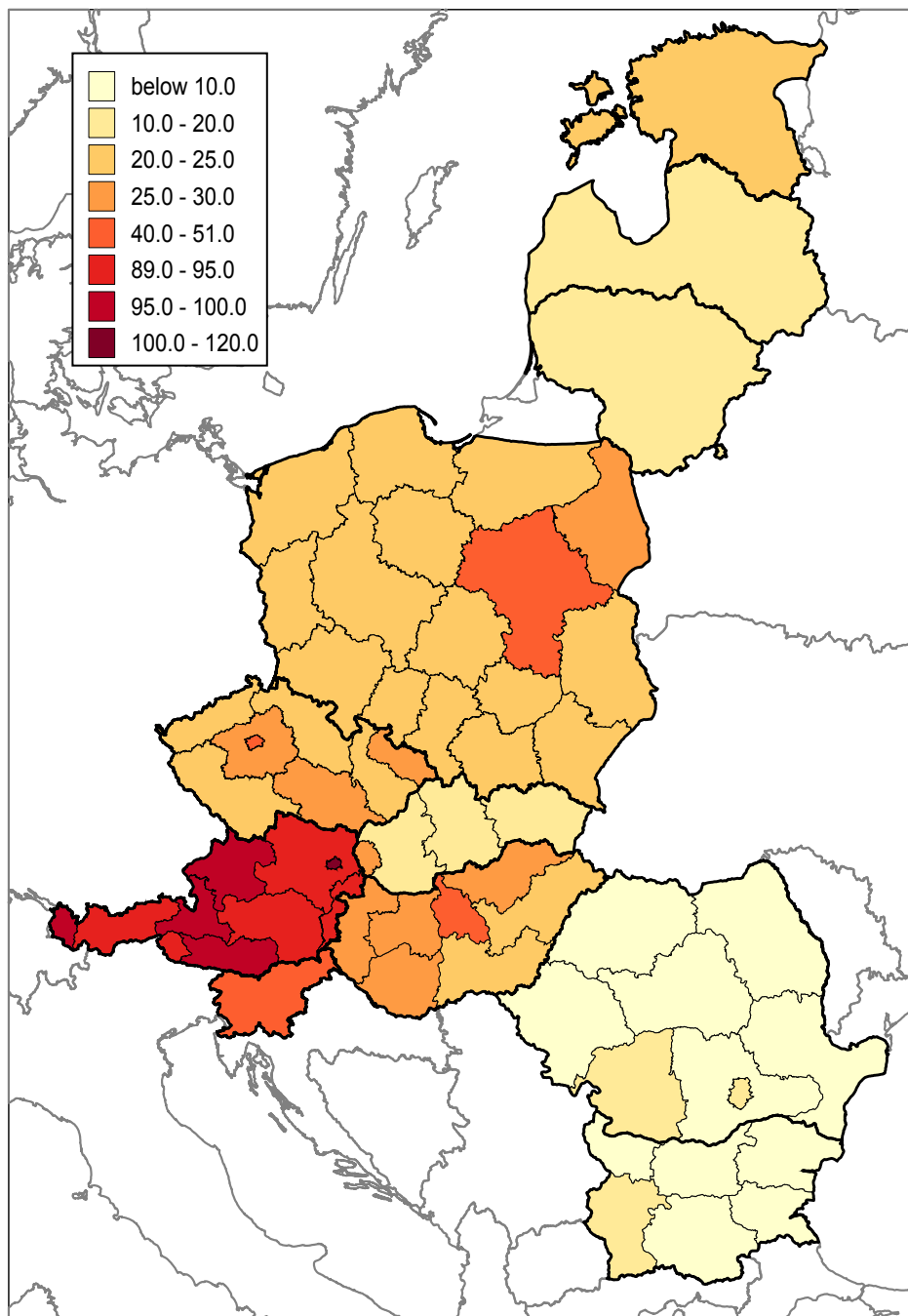
Source: Eurostat, Regional Economic Accounts

regions in the first two countries is between 85% of the average and levels close to the average, with wages tending to be lowest in mining or old industry regions (in the North and East of the Czech Republic) and the agricultural regions (in the East of Poland).

From a sectoral point of view, the highest wages are usually paid in the business services sector, i.e. banking and insurance services, real estate etc., and other market services (i.e. non-public services such as transport, tourism, trade). Throughout most regions in the NMS, wages in those sectors are higher than the average regional wage; in the capital cities wages in business services tend to be higher than in the other market services (given that the capital cities are the financial centres of the respective countries), while this is reversed for the majority of the other regions in most countries. Wages in the construction and manufacturing industry sectors tend to be below the average wage within most regions, with wages in construction being mostly somewhat higher than wages in the manufacturing industry.

Analysing the changes in wages over time is, especially in conjunction with the analysis of employment rates, a good indicator of the tightness of the labour markets in the NMS regions. However, given the data constraints, only changes from 2000 to 2004 can be reported here. Still, relying on the fact that the development of wages at the level of regions corresponds in most cases quite closely to the developments at the country level, the conclusions drawn in the country analysis are, at least as far as wages are concerned, expected to be similar for the individual regions.

As far as the growth of wages at the regional level in 2000-2004 is concerned, three groups of regions or countries are identified. The first, the high wage growth group of regions, is made up of the regions in the Czech Republic, Hungary and Slovakia: here average wages increased (in nominal terms) by 12-16% annually. In the second group, consisting of the Bulgarian regions and the Baltic states, wages grew by about 6-8%. In the third group, comprising the Polish regions and Slovenia, average wages rose by 2-4% only. Romania is treated separately, as there are only three years of observation available; during that period, average wages grew most rapidly among all NMS regions, by about 20% per year in nominal terms.

Combining the information on wage growth with that on changes in the employment rates over time indicates some differentiation in the state of the labour markets across the NMS regions. In the Czech Republic and Slovakia the increase in wages was accompanied by a more or less unchanging pattern in the employment rate, while in Hungary there was a simultaneous increase in both wages and employment rates in most regions. Thus the growth in wages in the former two countries went along with both an increase in the supply of and the demand for labour, while in the latter country the high growth of wages reflected a tightening of the labour market. By contrast, in Poland the low increase in wages in

2000-2004 is just a reflection of the low growth in the Polish regions in that period, and a persistent excess supply of labour situation (indicated by a decrease in the employment rate in the Polish regions in 2000-2004).

Commuting and migration

The analysis of commuting and migration at the regional level is complicated by the limited availability of data and does not allow to differentiate between commuting and permanent migration. Nevertheless the results should be indicative of the most important trends in the cross-border flows of workers, given the data available from the Arbeitsmarktservice Österreich (Public Employment Service – AMS). These data, which show the number of the Central and Eastern European nationals employed in Austria by Austrian region, suggest that most cross-border flows of labour tend to be of the commuting type.

Figure 13

Share of workers from Central and Eastern Europe in Austria by country of origin, 2007
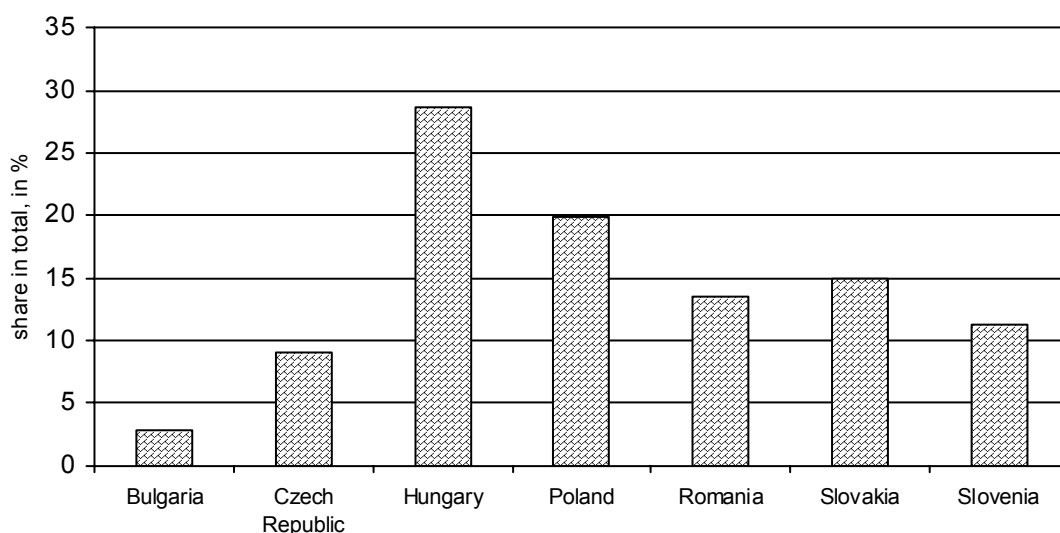
Source: AMS.

Thus, in 2007, about 64% of the total 59 thousand Central and Eastern European workers in Austria come from bordering countries and about one third from Bulgaria, Poland and Romania (no information is available on the Baltic states). By country of origin, about 28% of the workers are from Hungary, 20% from Poland, about 10-15% from Romania, Slovakia, Slovenia and the Czech Republic, and only about 3% from Bulgaria (Figure 13).

Splitting these data by Austrian regions in order to identify more precisely where NMS workers move to reveals two types of commuting. Firstly, with respect to the Austrian border countries, or short-range commuting, there is a clear tendency for commuters to seek work in Austrian regions close to their home country (and presumably home region).

This is illustrated by the fact that about 39% of all Hungarian workers in Austria work in Burgenland and another 13-16% in Vienna and Lower Austria respectively, while Czech workers tend to find employment mostly in Lower Austria (43% of all Czech workers in Austria) and Upper Austria (25%), see Table 6. Similarly, out of the 8800 Slovak employees in Austria, one third works in Lower Austria and another 30% in Vienna, and more than half of the Slovenian employees in Austria have their jobs in Styria.

Secondly, with respect to workers coming from more distant NMS countries (Poland, Romania, Bulgaria), they locate in those regions that provide the best job opportunities in industry, construction and services. Thus, more than half of the Polish workers in Austria have their jobs in Vienna, about 20% in Lower Austria and 10% in Upper Austria. By contrast, Romanian workers are more evenly spread across Vienna, Lower Austria, Upper Austria and Styria, the shares by region ranging from 15% to 24%.

Table 6

Number and share of workers from Central and Eastern Europe in Austrian regions by country of origin, 2007

| | | absolute number | | | | | | | | in % of country | | | | | | | |
		Bulgaria	Czech Republic	Hungary	Poland	Romania	Slovakia	Slovenia	Total	Bulgaria	Czech Republic	Hungary	Poland	Romania	Slovakia	Slovenia	Total
at	Austria	1637	5386	16899	11738	7973	8847	6629	**59109**	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
at11	Burgenland	45	29	6561	202	314	550	234	**7935**	2.7	0.5	38.8	1.7	3.9	6.2	3.5	**13.4**
at12	Niederösterreich	205	2317	2649	2427	1693	2956	352	**12599**	12.5	43.0	15.7	20.7	21.2	33.4	5.3	**21.3**
at13	Wien	820	926	2243	5884	1805	2717	375	**14770**	50.1	17.2	13.3	50.1	22.6	30.7	5.7	**25.0**
at21	Kärnten	34	64	466	169	264	143	1252	**2392**	2.1	1.2	2.8	1.4	3.3	1.6	18.9	**4.0**
at22	Steiermark	157	181	1815	937	1935	448	3737	**9210**	9.6	3.4	10.7	8.0	24.3	5.1	56.4	**15.6**
at31	Oberösterreich	158	1365	1327	1330	1226	733	174	**6313**	9.7	25.3	7.9	11.3	15.4	8.3	2.6	**10.7**
at32	Salzburg	59	224	718	219	313	505	155	**2193**	3.6	4.2	4.2	1.9	3.9	5.7	2.3	**3.7**
at33	Tirol	139	249	918	431	328	729	111	**2905**	8.5	4.6	5.4	3.7	4.1	8.2	1.7	**4.9**
at34	Vorarlberg	20	31	202	139	95	66	239	**792**	1.2	0.6	1.2	1.2	1.2	0.7	3.6	**1.3**

Source: AMS

It is also instructive to look at the changes in the flows of workers over time, in order to analyse how far the propensity to move to Austria has changed over the past eight years. Looking at the numbers in Table 7, it is obvious that there is an ongoing inflow of NMS workers to Austria which is becoming stronger over time. In the period 2000-2007 the total number of NMS employees in Austria increased by about 18 thousand (or about 44%), with some two thirds of this increase occurring in the period 2004-2007. By country, the highest additional inflows came from Hungary and Slovakia (about 7300 and 5500 workers respectively), followed by Poland and the Czech Republic. Expressed in percentage terms,

Slovakia accounted for the largest increase: the number of Slovak workers more than doubled over that period.

Table 7

Changes in the number of workers from Central and Eastern Europe in Austrian regions by country of origin, 2000-2007

		changes 2000-2004								changes 2004-2007							
		Bulgaria	Czech Republic	Hungary	Poland	Romania	Slovakia	Slovenia	Total	Bulgaria	Czech Republic	Hungary	Poland	Romania	Slovakia	Slovenia	Total
at	Austria	-35	606	3859	895	-1521	2134	74	**6012**	544	716	3489	2099	2261	2399	502	**12010**
at11	Burgenland	7	-6	2044	7	-229	108	48	**1979**	9	-2	513	4	81	78	45	**728**
at12	Niederösterreich	-38	8	253	235	-345	675	-45	**743**	66	130	557	250	390	571	11	**1975**
at13	Wien	109	219	82	131	32	524	-12	**1085**	346	156	444	1049	592	767	-10	**3344**
at21	Kärnten	-3	22	129	21	-84	31	-47	**69**	4	18	219	40	-8	89	171	**533**
at22	Steiermark	-22	26	462	276	-234	120	249	**877**	24	29	753	314	555	203	309	**2187**
at31	Oberösterreich	-57	205	310	66	-616	132	-20	**20**	48	321	424	301	455	338	16	**1903**
at32	Salzburg	-15	55	175	8	-18	160	1	**366**	21	69	300	71	58	220	24	**763**
at33	Tirol	-14	72	374	125	18	356	-4	**927**	19	2	256	57	103	132	-15	**554**
at34	Vorarlberg	-2	5	30	26	-45	28	-96	**-54**	7	-7	23	13	35	1	-49	**23**

Source: AMS

Although the above figures suggest that an increasing number of workers in the NMS is seeking employment in Austria, the figures refer to a period when labour mobility was still highly regulated, so they may not necessarily be used to assess the future trends in commuting and migration. We therefore supplement the analysis with additional information on commuting behaviour which is available from the LFS. These data give the percentage of the employed who commute from their region of residence to other regions to work. According to the underlying methodology this includes commuting to other domestic as well as foreign regions. In our analysis the share of commuters in total employment in a region is interpreted as the propensity or willingness of a region (or of the people living there) to engage in commuting. In principle this propensity is a function of various factors, such as wage differences, distance, the labour market situation in the home and potential destination regions, the degree of mobility and the state of the transport infrastructure. However, the data also depend on the definition of regions: larger regions tend to show much less outward commuting than small regions, as most of the commuting takes place within the large regions. This induces some upward bias with regard to commuting (or inter-regional mobility) from the smaller regions and has to be kept in mind, especially with regard to those regions that contain not only the capital city (or other conurbations) but also the hinterland, such as the regions of Budapest and Warsaw (compared to Prague and Bratislava).

Among the NMS and their regions, the propensity to commute is by far the highest in Slovakia, followed by the Czech Republic and Hungary, while in Bulgarian, Polish and Romanian regions it is relatively low (Map 4).

In Slovakia the share of commuters in total employed was, in the aggregate, about 12% in 2007 and thus higher than the Austrian average rate of 11%. Within Slovakia, commuting is particularly strong outside the capital city: given the relatively tight situation on the labour markets, about 13-14% of the employed in each of the regions to the East of Bratislava (or 270 thousand people) tend to have a job outside the region they live in.

Map 4

Propensity to commute, 2007, Austrian and CEE border regions*
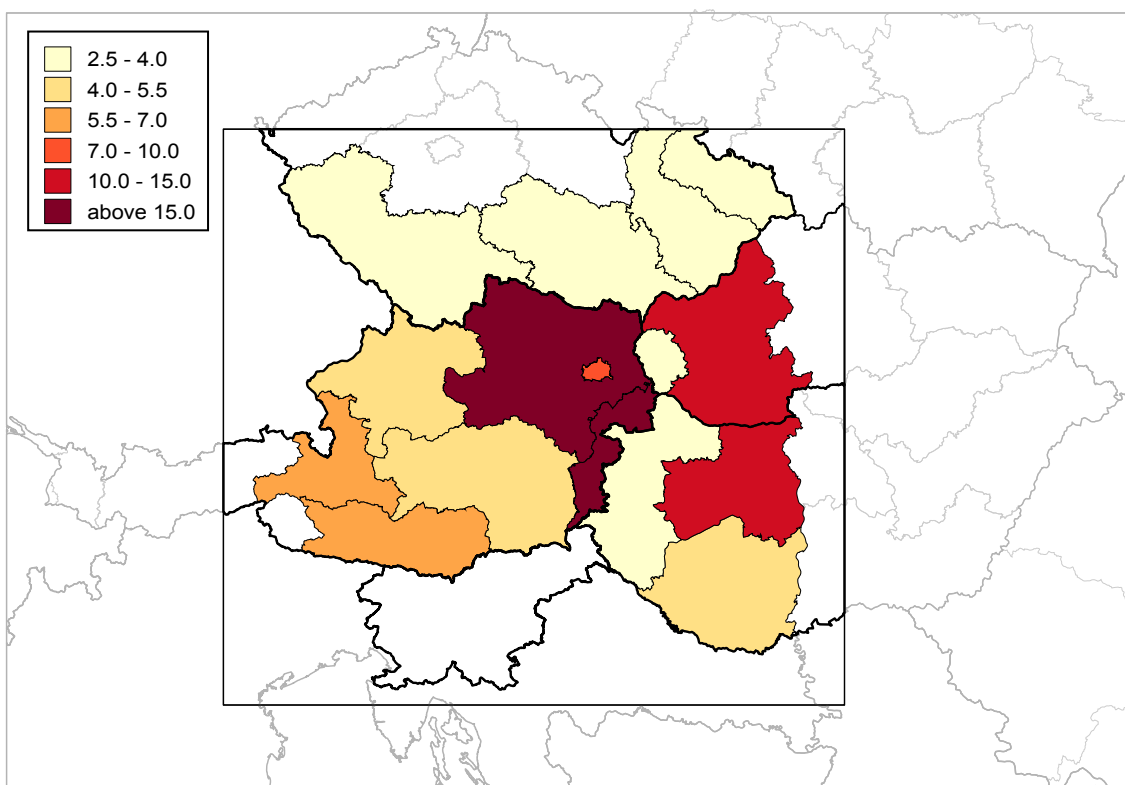
*no reliable data available for Slovenia

Source: LFS.

In the Czech Republic and Hungary commuting is stronger in the regions close to Prague or Budapest than in other regions. Thus about 16% of employed in the Strední Cechy surrounding Prague (or 96 thousand) tend to commute, while in the rest of the Czech Republic commuting rates range between 3% and 4%. Likewise, in Hungary about 11% of the employed population in the region West of Budapest, and about 10% of the employed in the region East of Budapest, have their jobs outside their domestic region.

Although the average level of commuting seems to be low (with few exceptions) in the NMS, at least compared to Austria, it is instructive to look at the changes in the commuting behaviour over time. The period 2004-2007 (the only period for which reasonable data are available) reveals a clear trend of increasing mobility in the NMS regions. Thus, with only few exceptions – some capital cities, and some regions in Romania – the propensity to commute as well the absolute number of commuters have increased in all NMS regions (but declined in all Austrian regions except Salzburg).

PART II: Migration studies and country experiences

II.1 Experiences of receiving and sending countries

Over the period 2003-2007 the stock of NMS-8 nationals in the EU-15 increased from 840,000 to 1.86 million persons, corresponding to 0.5% of the EU-15 population. The bulk of immigrants (over 60%) has been absorbed by the UK and Ireland, two of the countries that agreed to permit free access to their labour markets for nationals from the new member countries immediately after enlargement (Figure 14a). In Ireland the share of NMS-8 migrants in the total population increased from 1.1% in 2004 to 4.1% in 2007, in the UK from 0.2% to 1%. Inflows of migrant workers to Sweden (which also allowed free access to its labour market for NMS nationals) and Denmark (applying moderate transitional rules) remained modest. Germany and Austria, imposing transitional rules, have experienced only a small influx of NMS migrants, but the share in their total population is relatively high, at 0.7% and 1% respectively, in 2007 (Figure 14b).

Figure 14a

NMS-8 nationals residing in EU-15

change in stocks in thousand, 2003-2007

Figure 14b

NMS-8 nationals in total population of EU-15 countries
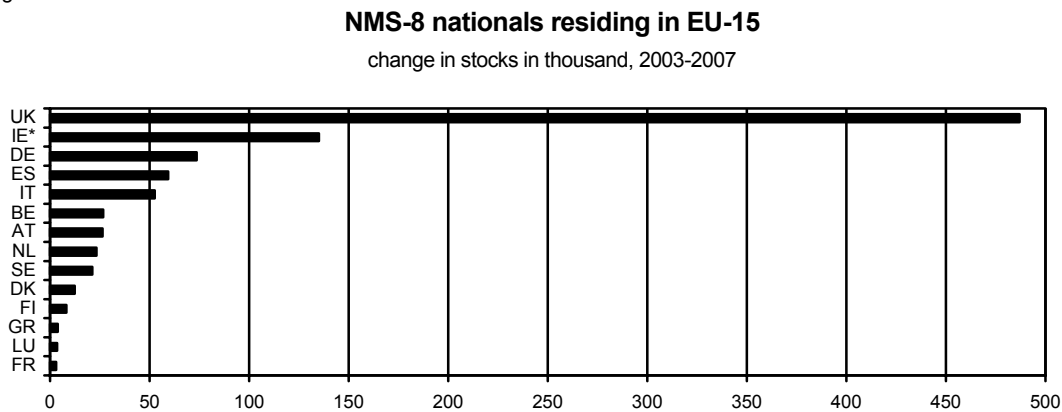
share in %, 2003 and 2007
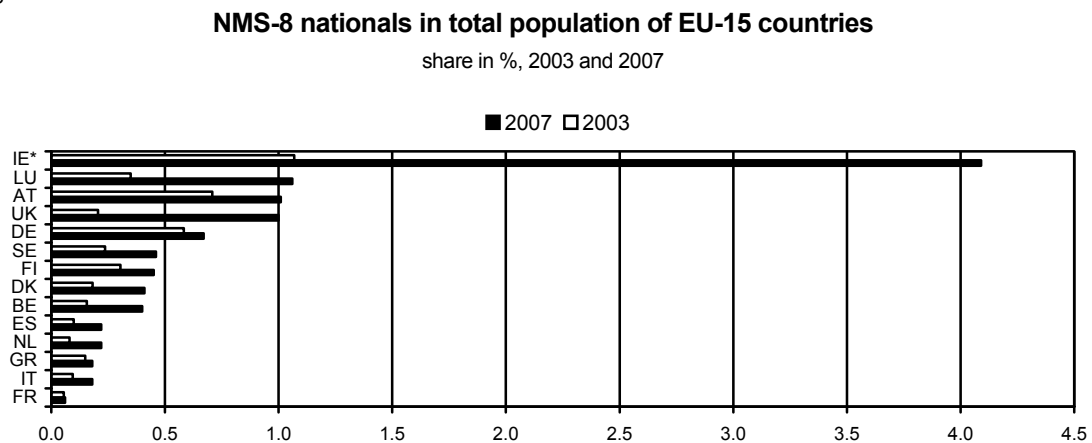
*Data 2003 refer to 2004.

Source: Eurostat-LFS, wiiw calculations.

Migration from Bulgaria and Romania started already in the pre-accession period; between 2003 and 2007 about 670,000 Romanian and 125,000 Bulgarian nationals went to the EU-15. Spain and Italy became the most favoured destinations (Figure 15a). Only a smaller number of NMS-2 migrants emigrated to the UK or Ireland: this was primarily the result of the restricted access to the labour market for Bulgarian and Romanian citizens (for further details see country reports below). The outstanding role of Spain and Italy as destination countries is also reflected in the high shares of Romanian and Bulgarian citizens in the total population of the former countries, accounting for 1.5% and 0.7% respectively (Figure 15b). According to LFS figures, overall 1.2 million Romanian nationals and 270,000 Bulgarian nationals were residing in EU-15 countries in 2007.

Figure 15a

NMS-2 nationals residing in EU-15

change in stocks in thousand, 2003-2007

Figure 15b

NMS-2 nationals in total EU-15 countries

share in %, 2003 and 2007

■ 2007 □ 2003
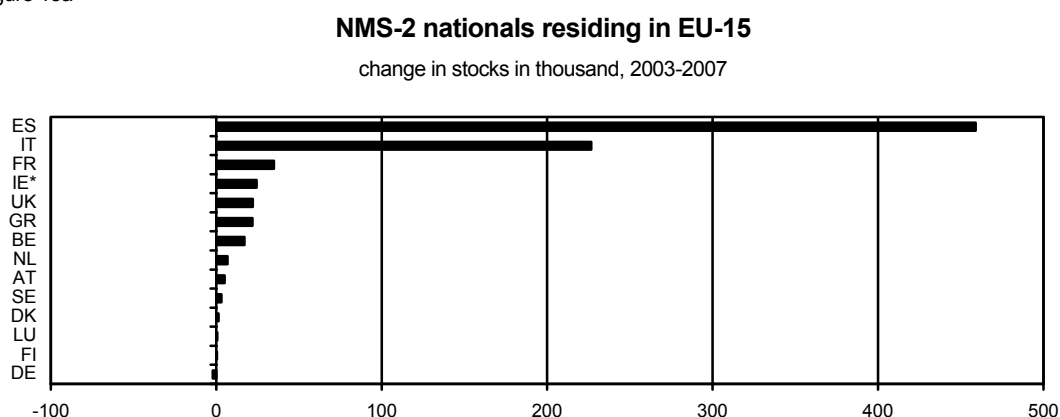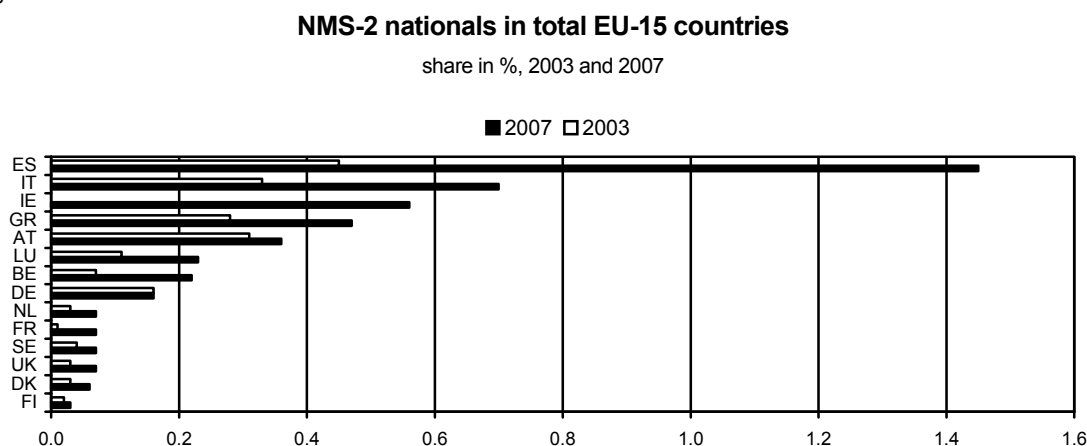
Source: Eurostat-LFS, wiiw calculations.

Figure 16a illustrates that the highest numbers by far of migrants to the EU-15 originate from Poland and Romania, which show the highest increases in stocks over the period 2003-2007. The shares of emigrants in the population of the sending countries are particularly high in Romania (5.4%), Lithuania (3.7%), Bulgaria (3.6%) and Poland (3.3%), while it is still relatively low in the Czech Republic (1%), Hungary and Slovenia (Figure

16b). In 2007 close to 274,000 Bulgarian citizens lived in the EU-15, accounting for 3.6% of Bulgaria's total population.

Figure 16a

NMS-10 nationals residing in EU-15

change in stocks in thousand, 2003-2007

Figure 16b

NMS-10 migrants to the EU-15 in sending countries' population

share in %, 2003 and 2007

■2007 □2003
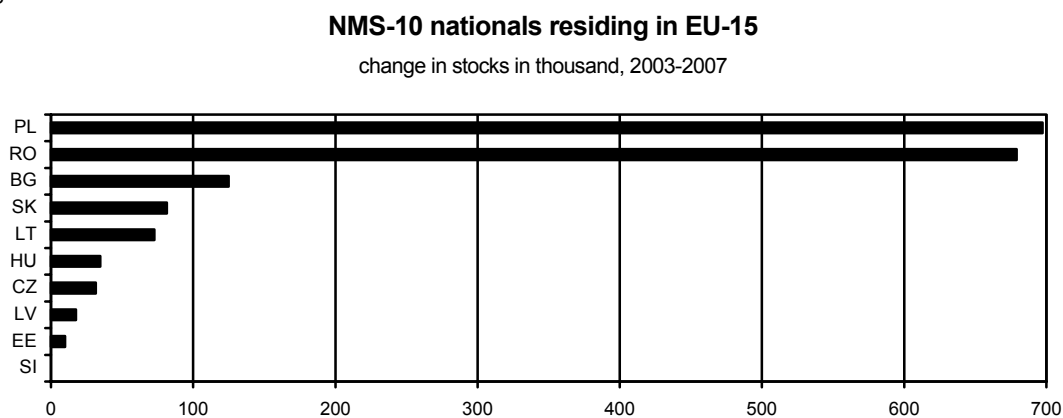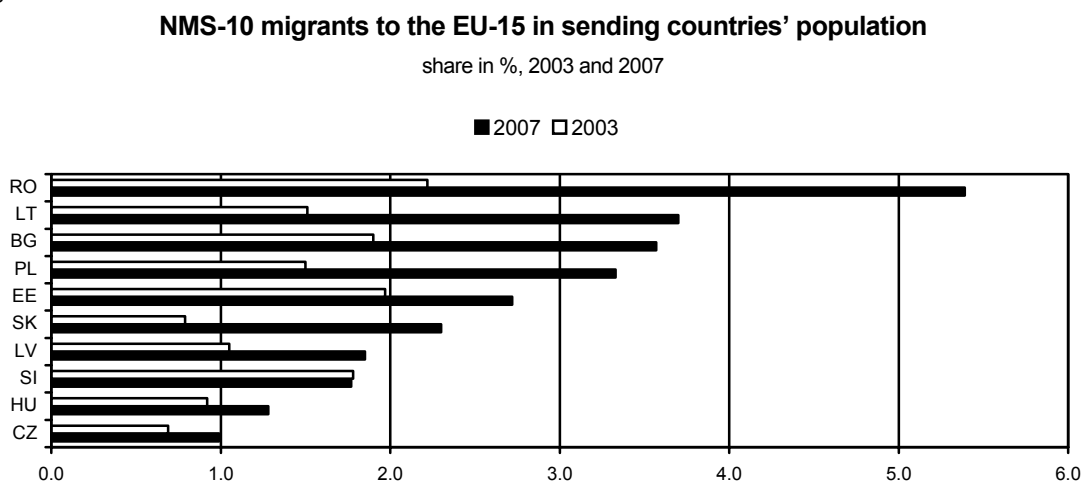
Source: Eurostat-LFS, wiiw calculations.

In the following we examine the experiences of those receiving countries which allowed free access to their labour markets upon accession (UK, Ireland and Sweden). Developments in the main sending countries (Poland and Romania, but also the Slovak Republic, Hungary, the Czech Republic and Slovenia) are discussed thereafter.

II.1.1   Receiving countries

United Kingdom

Migration trends

The UK agreed to permit free access to its labour market for NMS nationals from 1 May 2004, but obliged them to register with the Home Office under a new 'Workers Registration

Scheme' (WRS) and to obtain a worker's registration certificate. Transitional periods were introduced with respect to welfare benefits. As a result the UK experienced unprecedented inflows of migration within a short period of time (Upward, 2008). However, there is no precise estimate on the net inflows of migrants to the UK, because available administrative data record only gross inflows of migrants who enter the official labour force. Taking this caveat into account, over the period 2004-2007 up to one million migrants from the NMS-8 entered the UK (this includes a figure of people who were already in the country but were not registered), of which currently about 600,000 are residing in the UK.

The rules for Bulgarian and Romanian nationals wishing to work in the UK differ from those for the NMS of the 2004 enlargement. Migrants from Bulgaria and Romania are required to apply for an accession working card or a registration certificate if they are self employed.

Characteristics of migrants

The skill level of NMS migrants is higher than that of other migrant workers and/or the UK nationals. However, in the UK NMS-8 migrants tend to work in jobs for which they are overqualified. More than 60% of them are primarily employed in low-skilled occupations, working as operatives or in elementary occupations, compared to only 18% of UK-born workers). At the same time NMS migrants have higher education levels (two years more) than UK-born workers, suggesting 'that in some senses NMS migrants are 'underemployed' relative to their education' (Upward, 2008). This is also the reason why wages of NMS migrants are considerably lower than those of UK nationals at the same educational level. Most of the NMS migrants are regionally concentrated in London (services and hospitality industries) and in the Eastern parts of England (agriculture and manufacturing).

Studies examining the labour market outcomes for natives in the UK found that, in the pre-2004 period, immigration mainly had small negative effects on the earnings of incumbent immigrant workers, and on wages at the low end of the wage distribution (Manacorda et al., 2006; Dustmann et al., 2007). The post-enlargement evidence based on survey results shows that immigration has helped to alleviate labour and skills shortages, and that employers prefer these recent immigrants because of their comparatively high productivity (Upward, 2008).

NMS migrants to the UK show high rates of employment, so that only very low numbers have received benefits. As concerns education services, the UK has experienced a recent increase in pupils whose first language is not English, which poses additional costs to the educational system. Looking at health services, the NMS recent immigrants are likely to under-use these because of their low age. NMS nationals still may have put some strain on public services in the case of high concentration of non-registered migrant inflows,

because local public services receive funding from the central government based on population estimates (Upward, 2008).

Latest data obtained from the Worker Registration Scheme (WRS) reveal that the inflow of migrants to the UK has been slowing down. Upwards (2008) expects that net migration from the NMS-8 will fall 'as outflows rise and inflows fall', first because of an improving economic environment in the sending countries and, second, due to the financial crisis (and in the wake labour market crisis) hitting the UK.

Ireland

Ireland opened its labour market to NMS-8 nationals (Employment Permits Bill, April 2007) immediately after these countries' accession in 2004. The new regulations were applied both to the newly expected immigrants and to those already in the country prior to enlargement. Monitoring the number of migrants is conducted via the number of social security (PPS) numbers issued. Transitional arrangements were introduced with respect to welfare benefits. As a consequence of the large inflow of workers from the first enlargement round in 2004, Ireland introduced a seven-year transitional period for Bulgarian and Romanian nationals.

Information on migration flows from the NMS is limited. Detailed data, available only from 2005 onwards, show a rapid influx. Census figures for 2006 indicate that about 120,000 NMS-10 citizens were living in Ireland, with approximately three quarters accounted for by Polish or Lithuanian nationals.

Characteristics of migrants

NMS migrants have higher educational levels than Irish nationals (OECD, 2008a), but the occupational mismatch is relatively high and they tend to work in jobs for which they are overqualified (Ivlevs, 2008a); their wages are considerably below average. This leads to the conclusion 'that Ireland may not be getting the most out of its immigrant workforce' (OECD, 2008a). Regarding sectors of employment, NMS nationals are primarily employed in hotels and restaurants, low-skill manufacturing and construction. They are slightly more likely than Irish workers to work shifts, evenings and weekends (Barret and Bergin, 2007). Migrants from the NMS are slightly younger (median age 29) than the native population (median age 33) and much more likely to be of working age (Ivlevs, 2008a).

The OECD (2008a) found that wage growth in Ireland has been depressed in those sectors attracting the highest inflow of NMS migrants. Possibly this has caused Irish workers to move from those sectors.

As the majority of migrants are young and employed, they have not put major demands on public services or the welfare system (OECD, 2008a).

Sweden

Migration trends

Sweden was the only country that introduced free access to its labour market for NMS nationals including full access to social benefits. Despite this fact the inflow or NMS nationals remained moderate. Over the period 2003-2007 the stock of migrants from the NMS rose by about 25,000 persons (measured both by country of birth and by country of citizenship), particularly from Poland and the Baltic States. Since the initial basis was very low, this meant a doubling of the migrant stock from those countries. In sum, the share of NMS citizens in Sweden's total population remained negligible (rising from 0.3% in 2003 to 0.5% in 2007) (Ivlevs, 2008).

Possible reasons for the relatively low inflow of NMS migrants to Sweden compared to the UK and Ireland were, according to Wadensjö (2007), the low rate of job growth and vacancies, the diversion of migration flows to the UK and Ireland, but 'not least that English is the language of those two countries'. Dolvik and Eldring (2008), examining labour migration from the NMS to the Nordic countries (Sweden, Denmark, Finland, Iceland and Norway), concluded that 'the differences in the influx *of* migrants show little correlation with the presence of transitional arrangements' in these countries.

Characteristics of migrants

After the EU enlargement of 2004, the share of female NMS immigrants employed primarily in the health sector fell significantly, caused by easier access to sectors employing primarily males (such as construction). In the case of Polish immigrants, for instance, the share of females dropped from 74% in the period 2000-2003 to 50% in the period 2004-2007. Regarding the age structure, about half of the NMS migrants are in the age group 15-34; the age group 35-54 years accounts for about 30% of the NMS migrant stock (Ivlevs, 2008).

Data available from the Swedish Migration Board reveal that in the period 2003-2007, 57% of NMS migrants (including those from Bulgaria and Romania) were employees, 28% dependents and family members, and 8% students. The share of employers remained small (about 3%).

A comparison of the educational levels of NMS migrants and Swedish-born for 2005 (latest data available) shows a larger share of those with at least two years of higher education for NMS nationals (particularly from the Baltic States) than for Swedish-born. Regarding the sector of industry in which NMS migrant workers are employed, nationals from Poland and

the Baltic States are overrepresented in the health sector, while Lithuanian nationals are overrepresented in agriculture as compared to the Swedish-born.

Overall wage differences between NMS and Swedish-born nationals are very small, but vary by sending country. For example, there is a wide wage gap between Polish nationals (wages lower by 4%) and citizens from the Baltic States (lower by 8%) on the one the hand and Swedish-born on the other. Wadensjö (2007) notes that, the earlier migrants born in the NMS have arrived in Sweden, the lower is the wage gap.

Concerning the impact of migration from the NMS on the Swedish economy Dolvik and Eldring (2007) conclude that 'the increasing labour mobility from Poland and the Baltic States has contributed to higher economic growth and slower increases in prices, costs and interest rates than what otherwise would have been possible in a period of sustained economic boom and increasing scarcity of labour in the Nordic countries. Labour migration has contributed to removing bottlenecks, and no significant imbalances in the Nordic labour markets have been registered.' In addition, they found no evidence that NMS migrants came to Sweden because of the generous welfare system.

II.1.2   Sending countries

Poland

Migration trends

Poland's EU accession in 2004 triggered one of the largest migration waves in Polish history. According to most recent estimates the number of Polish citizens working abroad for more than two months increased from about 1 million in 2004 to 2.3 million in 2007. The main destination countries of Polish migrants were those allowing free access to their labour markets for NMS nationals, Ireland and particularly the United Kingdom, attracting half a million labour migrants from Poland. At the same time Germany and Italy, the most popular destinations of Polish migrant workers before enlargement, lost importance.[10] However, if adding seasonal workers to the total migrant flows, Germany would remain the major target for Polish migrants (Fihel et al., 2008).

Characteristics of migrants

Both in the pre- and post-accession period, the majority of Polish migrants were males; their share in total migrants even increased after EU enlargement. After EU accession the age structure of Polish migrants became significantly younger than in the pre-accession

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[10]   Prior to accession (abroad for at least 2 months in the period 1999-2003) the three most important destination countries of Polish migrants were Germany (32.1%), the United States (19.1%) and Italy (11.9%). After EU accession (abroad for at least 2 months between May 2004 and December 2006) Polish workers migrated primarily to the UK (31.1%), Germany (18.9%) as well as Ireland and the US (both 9.1%) (Fihel et al., 2008).

period (persons aged 20-39 account for 45% of total migrants). Fihel et al. (2008) argue that this change was mostly caused by the rising importance of Ireland and the United Kingdom among the destination countries, attracting particularly very young migrants.

The qualification structure of Polish migrants also changed considerably after accession. Detailed research found that migrant workers leaving the country during the 1990s had rather low qualification levels and were very often pushed into informal activities due to heavy restrictions on the EU-15 labour markets – a situation very disadvantageous for the highly skilled (Fihel et al., 2008). In general, those with (secondary) vocational education have represented the majority of Polish emigrants both before and after accession, but their number has been slightly declining since 2004. In the post-accession period the situation changed significantly with respect to the highly educated: the share of migrants with university degrees increased to about 20% as compared to 14% of university graduates in the overall population of Poland. In the case of females this proportion is even higher. Most of these migrants left for the UK and Ireland, which have attracted younger and better educated migrants. Fihel et al. (2008), note that some young migrants who left for other countries than the UK, Ireland and Sweden prior to enlargement may have moved to these three countries after Poland's EU accession.

Before as well as after enlargement the majority of Polish migrants (more than two thirds) accounted for persons from rural areas and small cities (less than 50,000 inhabitants). In the post-enlargement period the share of migrants from large cities has slightly increased to 24%, as against 20% prior to enlargement. Migrants are mostly recruited from Southern and Eastern Poland, either from rural and underdeveloped regions or the most populated areas (Fihel et al., 2008).

Despite the significant outflow of labour, migrants constitute only a small fraction of the Polish population. So far the demographic impact of recent migration has only been felt in the south eastern parts of Poland. Assessments with respect to the impact of migration on the labour market are mixed: while the World Bank (2007) finds that migration has led to labour shortage, Fihel et al. (2008) conclude that migration plays an important, but not decisive role with respect to the changes on the Polish labour market.

Recently there has been a broad discussion about return migration, but research on the issue is scarce. Data provided by the British Home Office and the Irish Department for Social and Family Affairs show a weakening of Polish migration flows both to the UK and to Ireland starting from the fourth quarter of 2007. Pollard et al. (2008) estimate that about half of Polish migrants to the UK have already returned home. Possible reasons for this decision are to be found in higher salaries and in job shortages in Poland along with the fall in the value of the British pound. However, according to the World Bank (2008) the return

home may only be of a transitory nature: a survey among Polish nationals who had returned from the UK showed that a third of them intend to leave again in the future.

Romania

Migration trends

Immediately before the country's EU entry, official numbers of Romanian nationals in the EU-15 countries amounted to about one million (Iara, 2008; there is some variation in the figures depending on the different datasets). Between 2000 and 2006, the number of Romanian populations in this area at least doubled, both by the standards of nationality and place of birth, but increased even much more in some countries. The increase was particularly strong in Spain, where the stock of Romanian nationals rose from about 30,000 to about 500,000, and Italy, where the increase was especially sharp between 2002 and 2003, from 95,000 to 245,000. In the countries with time series on Romanian nationals, stocks increased most strongly between 2001 and 2003. As for the dynamics of temporary migration, the intensity of departures doubled in the second half of the 1990s as compared to the five preceding years, and has again tripled since 2001. The individual periods were dominated by varying destination countries: in the early 1990s Turkey and Israel were the main destinations. along with secondary destinations in Italy, Germany and Hungary; flows in the second half of the 1990s increasingly turned to Italy (Sandu et al., 2006).

After the lifting of the Schengen visa requirement for Romanian travellers as of 2002, the Romanian authorities introduced severe exit conditions. In 2007, the EU entry of Romania allowed for free travel and stay across the European Union, but stays exceeding three months still may be subject to the proof of subsistence. Finally, several members of the enlarged EU permit access of Romanian nationals to their labour markets only within strict limits. Attempts to circumvent these constraints produce irregular migrants; their major share is not recorded in official data. It has been found that repressive migration policies do in fact foster irregular migration practices as well as permanent forms of migration, while the release of restrictions supports return migration. On the extent of irregular migration in Romania, according to an IOM survey of 2005, just 53% of the migrant workers interviewed performed labour abroad under legal contracts (Stan, 2006).

Characteristics of migrants

Migrant characteristics have changed against the 1990s. Today, females provide almost two thirds, and prime-age individuals half of all permanent migrants, against a higher share of both dependent minors and elders in the early 1990s. Existing evidence suggests the over-proportionate participation of the better skilled in migration, pointing to the risk of brain drain. Other effects on the Romanian economy include the emergence of labour and skill shortages that may necessitate higher levels of immigration to Romania, as well as the inflow of large amounts of remittances, which are rarely used for investment though. Based

on the existing characteristics of Romanian international out-migration, and looking at the supply side only, one should not expect a substantial decrease of the migration potential from Romania in the short run (Iara, 2008).

Slovakia

Migration trends

The number of Slovak citizens working abroad has been steadily on the increase since the beginning of the new millennium. According to LFS data the rise was particularly strong after Slovakia joined the EU in 2004, reached a peak in 2007 when 186,000 Slovak citizens worked officially abroad, and decreased somewhat thereafter. LFS data for the first quarter of 2008 post the number of Slovak labour migrants at 176,600, the vast majority of whom are males. However, the actual magnitude is considerably higher than reported by the LFS (Balaz, 2008).

According to the Slovak Ministry of Labour – collecting data from its partner institutions in the EU – in 2007 the number of Slovak migrant workers in the EU was 215,000 or about 10% of Slovakia's working-age population. The majority of migrants moved to the Czech Republic (absorbing about 40% of total labour migrants), followed by the UK, Ireland, Germany, Hungary, Austria and Italy. But again, also these data have to be taken with caution as they refer to those Slovaks who registered with foreign employment services. They may include migrants who have already left their destination country, but exclude migrants working illegally and/or students working on part-time jobs.

Most of the labour migrants are coming from the Presov and Zilina counties. The major sectors of employment were manufacturing and construction, accounting for about 60% of total migrants.

Information on cross-border commuting is scarce and limited in quality. Estimates based on EURES mention some 2000 daily commuters and 5000 weekly commuters from Slovakia to Austria. But there may be as much as 15,000 Slovak social care workers in Austria, most of them employed in the informal sector (Balaz, 2008). Daily commuting of Slovak citizens is also very common to Northern Hungary where multinational companies such as Nokia, Philips and Suzuki have established their plants. Estimates available for 2007 put the number of daily commuters at 8000, the vast majority of them being members of the Hungarian minority living in the Southern parts of Slovakia. On top of that, 6000-7000 Slovaks commute daily from the border district of Cadca to the Czech hinterland. Most of these commuters work in low-skill and low-paid jobs (Balaz, 2008).

Characteristics of migrants

Results obtained from a mailing survey conducted by EURES among 743 migrants in November 2007 indicate that 57% of Slovak migrants are males. Emigrants tend to be young, with the age group 18-34 accounting for 75%; about one quarter has a university degree. About half of the migrants are employed, while one quarter is unemployed, 16% are students and about 7% entrepreneurs. The UK is the most important destination country for Slovak labour migrants (29%), followed by Ireland (17%), the Czech Republic (11%), Germany and Austria (each close to 9%). The main sectors of employment are hotels and restaurants, manufacturing and transport, help in household, public and social services, agriculture, and construction.

Brain drain

Research conducted by the OECD (2008b) found that some 362,300 persons born in Slovakia lived abroad in 2005. Out of the total more than 40% had primary education and 13% tertiary education. These data, however, differ significantly from EURES data and from the information obtained from the Slovak authorities, which put the share of university graduates at about one quarter of total migrants and that of those with primary education at 5%.

Studies examining the future migration flows (particularly of the highly skilled) found a very high potential of brain drain. For example, a survey carried out by Hanzelova (2006) on a sample of 802 university students found that more than half of the respondents wished to work abroad after graduation. Medical doctors and pharmacists wanted to work in the same field, while students of social sciences and agriculture were ready to accept jobs in different occupations. The main reasons for working abroad were, among other things: travelling and life experience abroad, improving language skills, earning higher incomes, and improving skill levels. Among the preferred destinations the UK ranked first, followed by Ireland, the Czech Republic, Germany and the US.

In order to stem the brain drain, in June 2008 the Slovak government adopted a resolution addressing the major problems of labour migration and calling explicitly for stopping mass migration of skilled workers and applying policy measures to stabilize migration and the situation on the domestic labour market. The proposed measures include the build-up of a database on Slovak citizens living abroad, facilitating their return and reintegrating them in the Slovak labour market, and the establishment of Mobility Information Centres in countries with a high portion of Slovak migrants.

Apart from being a country of out-migration, Slovakia is also a country of immigration and transit migration (Biffl, 2004). Illegal migration to Slovakia played a bigger role in the past but has declined recently. Since the beginning of the millennium several thousand

members of ethnic Slovaks formerly living in Russia, Ukraine, former Yugoslavia and Romania have arrived in Slovakia, but also workers from Vietnam and China who wish to become Slovak citizens (Balaz and Williams, 2007).

Hungary

Migration trends

With the country's accession to the EU, Hungarian citizens are in principle entitled to work in any other EU and European Economic Area (EEA) member state. However, due to transitional measures, completely unrestricted 'freedom of movement' will apply for Hungarian citizens only from 2011 onwards. Currently 21 EU countries and 1 EEA member apply no restrictions on migration from Hungary. We have a relatively clear picture about Hungarians migrating within the EU. The data show that in comparison to other new EU members the propensity of Hungarians to migrate is fairly limited. Hungary's working-age population amounted to 13.5% of the total NMS-8 working-age population, while the share of Hungarians of working age registered in other EU countries amounted to only 6.6% of the total NMS-8 working-age population in other EU members. Among the new member states only the Czech Republic showed similar proportions to those of Hungary, hinting at a similarly low migration propensity. The share of Hungarian working-age population registered in other EU members in relation to the whole Hungarian working-age population is only 1%, substantially less than in any of the other new EU members, except for the Czech Republic (1.1%). Surprisingly, the traditional and more recent 'success stories' of the region, i.e. Slovenia, Estonia and Slovakia, show a much higher share than Hungary. Austria and Germany are the two traditional target countries of Hungarian migrants. In Austria, the share of NMS migrants in the total inflow ranged between 9% and 16% in 2000-2005, that of Hungarians was 3.6% in 2005, lower than in 2000 or 2001; thus no special impact of Hungary's EU accession can be observed. As for Germany, immigration from the NMS increased substantially, its share nearly doubled in the total (up to 30%). This was, however, the result of the strong increase of inflows from Poland. The Hungarians share remained at the pre-accession level, about 3%.

Time series on the inflow of foreigners show that Hungary has remained a relatively unimportant target country of international migration. The annual inflow was ranging between 13 and 22 thousand persons in the period 1996-2005. The three most important source countries of immigration were Romania, Ukraine and Serbia, each with substantial ethnic Hungarian population. All other source countries were of minor significance, with migrants below 1000 persons in any year. The foreign-born population slightly increased in 1996-2005, and surpassed 330,000 by the end of the period. Even then the share of the foreign-born population remained modest, 3.3% of Hungary's total population: this is lower than the respective indicator in the old EU member states, and also somewhat lower than in the Czech Republic (4-5%), and it corresponds roughly to the Slovak data. Illegal

employment poses a special problem of capturing migrants' role on the labour market. In 2005 the share of foreign-born labour force made up 1.9% of the total labour force, while this population group constituted 3.3% of the total population. In the same year foreign labour force (those with other than Hungarian citizenship) amounted to 0.8% of the total labour force, while this group's share in total population was 1.5%. These figures hint at an overrepresentation of migrants in illegal employment. Most of the immigrants arrive from neighbouring countries and they are typically ethnic Hungarians. This explains the relative importance of naturalizations appearing in the highly diverging numbers of foreign-born persons and foreign citizens, respectively, in Hungary. Foreign employment is highly concentrated in the Budapest agglomeration and, to a smaller extent, in Central Transdanubia, both regions figuring as engines of growth in Hungary. The breakdown of foreign employees by branches significantly differs from that of the total employees. Foreigners are over-represented in construction and industry while under-represented in the services sectors. The latter, however, may accommodate a substantial part of illegal employment.

The available figures on migration from and to Hungary clearly show that Hungary is a relatively 'closed' country, neither outward nor inward migration is really significant. Hungary is among the less important sending countries of the EU's new member states and, as a host country, attracts much fewer migrants in relative terms than the old EU members. Compared to the communist era, the mobility in both directions is more significant, but EU accession has not changed the characteristics of migration in either direction.

The Czech Republic and Slovenia

Information available on labour migration both from the Czech Republic and Slovenia is scant. Migration data provided by mirror statistics in the receiving countries indicate that the propensity of Czech and Slovenian citizens to migrate is relatively low (similar to that of the Hungarians). Looking at absolute figures, the number of Czech migrants to the EU rose by 40,000 between 2004 and 2007, amounting to 102,000 or close to 1% of the total Czech population (up from 0.6% in 2004). At the same time only about 4000 Slovenian nationals migrated to the EU-15, totalling 35,700 person or 1.8% of the country's total population (up from 1.6% in 2004). Figures provided by the Czech Ministry of Labour post the stock of labour migrants at 78,000 by the end of 2007, the vast majority of whom worked in the UK (41%), Germany (17%), Ireland (15%) and Austria (7%).

However, according to the British Home Office, the inflow of Czech migrants plummeted in the second quarter of 2008.[11] The drop is being attributed to the strength of the Czech koruna and changing trends in Czechs' migration habits.

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[11] British Home Office quoted in Czech Radio, http://www.radio.cz/en/article/107667.

The Czech Republic has also become an important immigration country. As of May 2008 the stock of foreign workers totalled 268,000, the majority of them coming from Slovakia, Ukraine and Poland. In attracting skilled workers from abroad in order to fill the vacancies, the Czech Ministry of Labour and Social Affairs launched a programme entitled 'Selecting qualified workers from abroad' as far back as 2003, offering permanent residence permits to those who had lived and worked in the country for two and a half years. Until June 2007 the programme had attracted 170 participants and their family members (OECD, 2008c).

Similarly, in Slovenia the number of foreign workers has increased steadily in the past couple of years. In March 2008 the number of work permits amounted to 72,000. Most foreign workers are engaged in construction or other jobs requiring only elementary or no education at all.

In both countries the share of foreigners in total workforce is relatively high, accounting for 7.3% in Slovenia (January 2008) and 5.5% in the Czech Republic (2006) respectively.

II.2   Econometric studies of migration flows

Because of the complexity and idiosyncrasy of bilateral migration flows, forecasting the size of migrations after a lift of existing migration barriers is difficult and can only provide indicative results. One option[12] is to estimate a macroeconomic model[13] of migration that explains stocks or flows of migrants with variables that account for the costs and benefits of migration, such as economic push and pull factors and variables that reflect cultural and spatial proximity and migration regimes. Migration flows are then extrapolated based on assumptions on economic developments. For assessing expected free migration between countries where migration flows have been restricted, extrapolations need to be made in time and in space. The results of such extrapolations hinge on the assumption that the reaction of migration patterns to the explanatory variables employed is stable over time and in space. A methodological problem is that migration patterns are country-specific. Technically, the inclusion of country-fixed effects into the estimation has a strong impact on the estimation and simulation results. To translate the results for one set of countries to another, the country-fixed effects for the latter need to be known.

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[12]   Another option is to evaluate survey data on the willingness to migrate from the source countries of expected migration. On the positive side, this methodology draws conclusions from studying the population of a specific country directly and avoids the pitfalls of translating results from one country to another. Such studies have their own shortcomings, however. First, they focus on the supply side of migration, while demand conditions are left out of regard. Even on the former, they can provide only a snapshot that may be of limited validity under different conditions. Besides, they typically do not consider the intended length of the stay abroad. Even if they did, the validity of such results would remain doubtful, since migrants tend to adjust their plans during the stay abroad. Therefore, survey results indicate the expected gross inflow of migrants into a set of host countries in a period of time, but they are not informative about the change in the stock of foreigners living in those countries. However, they relate information about the socio-economic characteristics and motivations of potential migrants.

[13]   In terms of theory foundations, the model specifications in most empirical contributions which forecast migration flows are (explicitly or implicitly, and more or less strictly or vaguely) based on the human capital approach to migration.

Forecasts of east to west European migration flows produced before 2004 were based on historical data on immigration to the EU-15. We shall discuss the two most influential studies of this period, namely Alvarez-Plata et al. (2003) produced for the European Commission, and Dustmann et al. (2003) prepared for the UK Home Office.

Using immigration data from 19 source countries to Germany in 1967-2001, Alvarez-Plata et al. (2003) estimate a dynamic stock model of migration with fixed effects and provide extrapolations on eastern European immigration both for Germany and the EU-15. The expansion of the results to the EU-15 is based on the observed distribution of migrants from the NMS[14] source countries across the EU-15 member states. As a strong feature of the study, the country-fixed effects for the eastern European source countries are calculated from results of a secondary regression, following the methodology of the earlier contribution of Fertig (2001) on the topic.

For the EU-15 altogether, Alvarez-Plata et al. (2003) predicts a net increase in the foreign population from the NMS-10 of 2.7 million between 2004 and 2020. For the same period, the study calculates an increase in the stock of NMS-10 foreigners in Austria by 216,500. The annual inflow of immigrants is predicted to peak in the second and third year after the introduction of free migration assumed in 2004, at 29,000 individuals p.a. In the first three years upon enlargement, an increase in the stock of NMS migrants by 1,020,000 was expected. The long-run stock of migrants to the EU-15 (in 2030) is predicted at 3.8% of the sending country population. Alvarez-Plata et al. (2003) argue that the postponement of free movement altogether will not have a sizeable impact on the total number of immigrants to the EU-15 over ten years, since migration is mainly driven by the income gap, which is slow to diminish. However, restrictions that are abolished gradually could mitigate a sudden shock. At a sudden transition to the liberalized regime, around 30% of the migration potential would materialize in the first two years.

Dustmann et al. (2003) has been influential in shaping the British approach towards opening up their labour markets for workers from the new EU member states of 2004. Using information on immigration to the United Kingdom from 1975 to 2000, a variance components model of migration flows relative to the sending country populations is estimated. Similar estimations are provided for Germany, using historical immigration data from 1960 to 1999. Dustmann et al. (2003) predict that until 2010, between 20,000 and 200,000 immigrants from eastern Europe would migrate to Germany per annum, while for the UK, annual inflows between 5000 and 13,000 are predicted. These low figures are due to the fact that the historical sending countries of immigration to the UK have relatively large populations as compared to the migration flows; this was considered likely not to be true for the eastern European countries even before 2004. Dustmann et al. (2003) also

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[14] These countries were not yet EU members at the time of the study.

raise the possibility that migration flows expected for Germany may be diverted to the UK in the case of asymmetric labour market liberalizations.

Both before and after 2004, estimations of the migration potential from the new EU members have also been produced for Austria specifically. As an early study on the topic, Huber and Brücker (2003) estimate a similar model as Alvarez-Plata et al. (2003) with Austrian data. Their simulations of the migration potential imply that from 2004 to 2025, the stock of NMS foreigners in Austria would increase by 173,000 to 302,000 persons, with the baseline scenario value being 226,000 persons.

A thorough review of the pre-2004 forecasts of east to west European migration upon EU enlargement is provided in Brücker et al. (2008). The studies reviewed[15] are heterogeneous in terms of modelling details, estimation methodology, datasets and the control variables. They also differ in terms of results: the studies applying the Alvarez-Plata et al. (2003) dynamic stock model with country-fixed effects (in addition, these are Boeri, Brücker et al., 2001, and Brücker, 2001) arrive at predicting a long-run stock of NMS migrants in the EU-15 of around 4% of the combined sending country populations and a net inflow of around 0.3% in the first year, which corresponds to a long-run NMS migrant stock of around 2.5% of the sending population in Germany. By contrast, Flaig (2001) and Sinn et al. (2001), who similarly estimate a dynamic stock model but do not include country-fixed effects, expect that in the long run, more than 7% of the NMS populations would migrate to Germany. The predictions of the studies employing different methodologies (Dustmann et al., 2003; Fertig, 2001; Fertig and Schmidt, 2001; Hille and Straubhaar, 2001; Straubhaar, 2002) arrive at lower predictions of net initial migrant flows than Alvarez-Plata et al. (2003).

How can these studies be assessed in terms of methodology and observed migrations since 2004? As concerns methodology, the studies of the period before 2004 necessarily suffered from two technical flaws: first, due to limited observations on migration flows between the countries concerned, they had to rely on extrapolation from observed relationships in both time and space. Second, the forecasts of that period all acted on the assumption that the incumbent EU-15 members would adopt a symmetric approach towards labour market liberalization. Diversion effects emanating from differences in immigration regulations were not considered, apart from the fact that no pre-2004 evidence is known on diversion effects of international migration. Now available figures show that in 2007, the stock of NMS foreigners in the EU-15 increased by 1,800,000 as compared to 2003, which implies an average annual increase by 450,000. This is 33% more than the baseline scenario predictions of Alvarez-Plata et al. (2003) for the whole EU-15 and 10%

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[15] In addition to Alvarez-Plata et al. (2003) and Dustmann et al. (2003), these include Boeri and Brücker (2001), Brücker (2001), Fertig (2001), Fertig and Schmidt (2001), Flaig (2001), Hille and Straubhaar (2001), Sinn et al. (2001), and Straubhaar (2002).

more than the expansion for the EU-15 based on the high scenario for Germany, but still below the high forecasts of Sinn et al. (2001). Part of the difference to the Alvarez-Plata et al. (2003) predictions may be explained by the presumption that the share of NMS migrants choosing to migrate temporarily is higher than that of migrants from the traditional sending countries of guest worker migration to Germany such as Turkey, so the initial migrant stock figures after 2004 may be inflated by the shorter-term migrations. In the long run, the change in the NMS migrant stocks in the EU-15 is therefore more likely to be closer to the Alvarez-Plata et al. (2003) predictions. As concerns the diversion effects of asymmetric labour market liberalization, any pre-2004 study failed with regard to the spatial distribution of east to west European immigration, as such effects could not be taken into account. While the share of Germany in total NMS immigration into the EU-15 was around 60% by 2003, by 2007 it fell to 30%.[16]

After the eastern enlargement of the EU in 2004, three studies have provided new forecasts of east to west European migration. We describe these below in turn.

Zaiceva (2006) estimates migration flows from three cohesion countries (Greece, Spain, Portugal) to the EU-15, based on data from the mid-1980s to the mid-1990s. Other than the previous studies, she allows for unobserved destination country heterogeneity as well. Besides, the experience of the southern EU enlargement countries allows her to study the effect of opening up the old EU labour markets to immigration from the new members. Based on this analysis, she estimates a counterfactual migration scenario for the eastern new EU members where free migration is introduced in 2011. She extrapolates a long-run inflow from the eight EU members of 2004, Bulgaria, and Romania to the EU-15 of around 3.5-5% of the source country populations, corresponding to around 1% of the combined host country populations. The most extensive bilateral flows are expected to be between Romania, Poland and Bulgaria respectively to Germany and Austria. An important result of Zaiceva (2006) is that the control variable for a free labour migration regime is insignificant: this means that according to her results, one does not have to expect that immigration from the new EU members would increase if free immigration would be introduced by the old EU members, as compared to unchanged labour migration regulations. Zaiceva (2006) argues that, according to her results, postponing free movement by all old EU members would not have increased total immigration upon liberalization at a later point of time. Instead, most likely stocks of migrants in the EU-15 would have reached their equilibrium levels by then.

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[16] As another aspect of methodology, the studies discussed above adopt a variety of model specifications and estimation strategies. Evaluating the performance of various estimators with immigration data from Germany in the period 1967-2001, Brücker and Siliverstovs (2006) establish that the standard fixed-effects estimator is superior to both pooled OLS and instrumental variable methods such as GMM.

Pytlikova (2007) uses historical flow data of migration from seven new EU member states of 2004[17] to thirteen countries of the European Economic Area[18] in the 1990s to forecast migration from these countries after EU enlargement. She arrives at the prediction of net increases of NMS migrant stocks in the destination area of 20,000 to 46,000 p.a., resulting in a long-run stock of NMS migrants of around 1.1 to 1.4 million by 2015 (starting from the year 2004). This corresponds to 1.5-2% of the source country populations. As an interesting feature, Pytlikova (2007) considers gross migration flows as well. According to her results, the gross flows are up to three times larger than the net stock increases, amounting to almost 6% of the source country populations in 2004 to 2015. Apart from the fact that Pytlikova's analysis does not cover flows to Austria, which has been one of the important host countries to eastern European migration, one limitation in Pytlikova's work lies in the fact that she is unable to consider the effect of changing immigration policies and liberalized work immigration regimes in particular. Besides, while the new members of 2007 have shown higher emigration rates already before their EU entry, the forecasts of Pytlikova (2007) only cover the new EU members of 2004.

Finally, Brücker et al. (2008) present projections of east to west European migration flows based on estimations of a dynamic stock model of migration with observations made after EU enlargement, specifically using a dataset that covers the years 1982 to 2007. Similarly as in Pytlikova (2007) this allows to circumvent the problem of extrapolation across countries. Two sets of projections are presented: first, expected migration is studied under the institutional framework existing at present, and a second scenario is based on the assumption of complete labour market liberalization in the EU-15. Comparable to Zaiceva (2006), the impact of liberalizations is studied using the experience of the EU-15 members. The study provides results for total migration flows to the EU-15 as a whole (where weighted EU averages of the explanatory variables are used). It cannot provide results on the spatial distribution of immigration however, as no counterfactual evidence is available on the regional distribution of NMS migrants that is not distorted by restrictions. Brücker et al. (2008) arrive at the predictions that, under the present set of transitional arrangements, until 2020 the stock of NMS migrants in the EU-15 will increase from 1.7 (NMS-8) plus 1.4 (NMS-2) million to 3.8 plus 3.9 million respectively, while in a scenario with liberalized labour migration, the stocks will reach 4.4 plus 4 million respectively. These figures correspond to 5.2% of the NMS-8 populations, and around 13% of the NMS-2 populations.

Brücker et al. (2008) are unable to make predictions on the spatial distribution of the migrations into the EU-15. Taking the shares of migrants to Austria in the total EU-15 of 2003, before the diversion of migration flows to the United Kingdom and Ireland set in, one could expect on the grounds of the Brücker et al. (2008) forecasts for the total EU-15 that the long-run increase of the NMS-8 migrant stocks in Austria would be around 153,000 to

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[17] Namely, the NMS-10 without Malta, Cyprus, and Slovenia.

[18] The sample does not include migration flows to Austria, France, Ireland, Luxembourg, and Portugal.

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190,000, and that such an increase in the number of migrants from the NMS-2 would be around 98,000 to 105,000.[19]

An alternative to migration from the new EU members to the EU-15 is commuting, at least for the inhabitants of the regions bordering the old EU. In Austria specifically, this affects the Bundesländer of Burgenland, Lower Austria, and Vienna. Evaluating survey data from the LAMO[20] questionnaire of the 2004-2005 and 2006-2007 waves (including around 6,000 and 5,600 observations respectively), Huber and Novotny (2008) assess the commuting potential from the NMS-8 regions bordering Austria. Specifically, these are South Moravia from the Czech Republic, Trnava and Bratislava in Slovakia, and the Hungarian counties of Gyor-Moson-Sopron and Vas. Based on the state of the considerations of the interviewees with respect to commuting, three levels of commuting potentials are distinguished.[21] According to Huber and Novotny (2008), the evaluation of the LAMO data shows that in the border regions of the Slovak Republic, the Czech Republic and Hungary neighbouring Austria, in 2004-2005 the general commuting potential was close to 10 per cent but declined to 5.6 per cent in the next round. The expected commuting potential has been much lower, 3 per cent and 1.4 per cent respectively. Finally, the real potential was slightly increased, from 0.7 to 0.8 per cent. These figures were below the respective potentials to migrate (including residential relocation), that were by 25 to 50 per cent higher. For each category, the commuting potential was found lowest from the Czech Republic and highest from Slovakia in 2004-2005 and from Hungary in the 2006-2007 round respectively, when the real potential from Hungary amounted to 1.4 per cent. The potential has dropped between the two survey rounds, which may be due to improved economic conditions in the residential regions of the potential commuters, and the fact that people with a strong interest in working in the neighbouring country may have moved abroad during the two rounds of the survey. Taking the LAMO survey as representative for the working age population, extrapolating from the survey results on the working age population of the affected regions implies for 2007 commuting potentials from the combined Centrope regions of Hungary, the Slovak Republic, and the Czech Republic of 186,000 individuals of the general type, 45,000 of the expected commuting type, and 23,000 of the real commuting type. This is around eight, two, and one per cent of the combined working age populations of the Centrope regions on the Austrian side respectively. The results of the LAMO survey thus suggest that fears of

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[19]   These figures are slightly above those implied for Austria in the earlier study of Alvarez-Plata et al. (2003). However, a major part of the migration potential from the new EU members has already materialized at the time of Brücker et al. (2008). A part of the total flows to the EU-15 has already taken place, and diversion came into effect.

[20]   LAMO stands for Labour Market Monitoring; the questionnaires were administered by the Paul Lazarsfeld Gesellschaft für Sozialforschung. For details, see www.arbeitsmarktmonitoring.at.

[21]   The general potential includes those persons who consider seeking a job abroad or would do so if the mobility restrictions were lifted and would then commute to the job daily or weekly. The expected potential includes those from the above who have collected information about their target country, taken training or language courses, or applied for a residence or work permit or for a job or have a job offer. Finally, the real commuting potential includes those who have already applied for a job or work permit or have a job offer.

strains on the labour markets of the eastern border regions of Austria due to a labour supply shock by commuting eastern European residents are unfounded.

Econometric analysis of the effects of immigration on the labour market

The various forms of immigration have multiple effects on the economies and societies of the receiving (as well as the sending) countries. Among the most important for the public discussion are the short-run labour market effects. A considerable body of research has developed to study these wage and (un-) employment effects of immigration by means of econometric techniques.

One possible way to identify the labour market effects of immigration is to study the variation in labour market outcomes across spatial units (such as regions or US states) that are simultaneously affected by immigration to various degrees. To counter the problem of endogeneity of migration flows to specific areas, exogenous information from natural experiments or appropriate instrumental variables have to be used. Earlier studies adopting this so-called spatial correlation approach (Card, 1990, on the Cuban refugees to Miami in 1980; Hunt, 1992, on the impact of Algerian migrant flows to France in 1982; Carrington and de Lima, 1996, on flows of African refugees to Portugal in the 1970s) fail to detect substantial impacts of immigration on local labour markets. A shortcoming of this approach is that the local labour market effects of immigration may be downward biased if the adjustment of local economies is not controlled for. Kugler and Yuksel (2008), scrutinizing the inflow of Central American immigrants to the US in the aftermath of a natural disaster in 1998, present research results that are in part robust to this critique in so far as they control for local out-migration flows. So they can show that immigration is associated with a negative employment impact for low-skilled previous migrants, which suggests that earlier and more recent migrants are substitutes. Besides, their finding of positive wage effects vanishes once local out-migration is controlled for.

In the context of east to west European labour migration specifically, several contributions have studied the labour market impact of such migration in the UK in the spatial correlations framework. Each is resorting to instrumental variables to deal with endogeneity. Portes and French (2005) find a small but significant increase in local unemployment associated with immigration from the new EU members of 2004, even without controlling for labour reallocation across local labour markets. This result is, however, put in question by Gilpin et al. (2006) and Lemos and Portes (2008) who fail to find any significant adverse effect of migration from the new EU members on local labour markets. Although in these studies out-migration is not controlled for, the results of Lemos and Portes (2008) are robust to the estimation at higher levels of spatial aggregation, where one could expect larger effects due to fewer possibilities of short-term spatial adjustment (Longhi et al., 2008).

A second group of studies identifies the labour market effects of immigration by looking at the variation of supply shifts induced by immigration across sub-sectors of the labour market by education and experience. Introducing this so-called factor proportions framework to the immigration impact research, Borjas (2003) found that immigration to the US substantially lowers the wage of workers in the same education/experience category. His contribution implicitly assumed, however, that foreigners and natives are perfect substitutes. Allowing for imperfect substitution between immigrant and native workers, Ottaviano and Peri (2006) showed that in the short term (where the capital stock is kept fixed) immigration results in negative overall wage effects that are particularly large for high school dropouts, up to 7%, while the overall long-run effects are positive. According to Borjas et al. (2008), however, these results cannot be maintained when the dataset is constructed more carefully.

In the European context, the factor proportions approach was adopted by four studies evaluating different German datasets (Bonin, 2005; D'Amuri et al., 2008; Felbermayr et al., 2008; Brücker and Jahn, 2008) and one piece of research on British data (Manacorda et al., 2006) recently. While Bonin (2005) adopts the original Borjas (2003) methodology that does not consider imperfect substitution between natives and foreigners, Manacorda et al. (2006) and D'Amuri et al. (2008) are built on the more refined framework of Ottaviano and Peri (2006). Finally, Felbermayr et al. (2008) and Brücker and Jahn (2008) extend the factor proportions approach to a structural model of the labour market that allows for unemployment. All of these studies find very moderate overall labour market effects, owing to the stylized fact that natives and migrants are imperfect substitutes. However, another robust conclusion of the above studies is that older workers (Bonin, 2005) and workers with lower education levels (Bonin, 2005; Brücker and Jahn, 2008) tend to lose above-average from immigration. Importantly, as Manacorda et al. (2006) and D'Amuri et al. (2008) show, new immigration is found to produce negative labour market effects on earlier arrivals, suggesting that earlier and more recent immigrants are closer to being perfect substitutes.

Felbermayr et al. (2008) also simulate the impact of eastern European immigration to be expected upon labour market liberalization to Germany. In a counterfactual setting with perfect labour markets, they find short-run wage losses of natives by 0.3-4.1%, while long-run wage effects for natives are positive, between 0.07% and 0.8%.[22] Comparable to Brücker and Jahn (2008), they also show that foreign workers suffer higher wage losses upon immigration. Considering wage rigidities modifies their results in so far as the wage effects are lower but the mitigation comes at the cost of higher unemployment.

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[22] Short and long run effects may be different due to the fact that the capital stock may be adjusted in the long run but not in the short run. The long run simulations of Felbermayr et al. (2008) assume endogenous capital accumulation that results constant marginal productivities of capital and labour.

Longhi et al. (2008) provide a meta-analytic review of 45 primary studies on the effects of immigration on wages and labour market outcomes (employment, unemployment, participation) that employ the spatial correlations or the factor proportions approach. Their quantitative analysis confirms the above qualitative review that migration has very small effects on the native population. Similarly, the meta-analysis confirms the emerging stylized fact that immigration bears negative labour market effects on earlier migrants, which shows that migrants do not fully substitute natives but they are more likely to do so regarding earlier migrants. Longhi et al. (2008) find that larger impacts tend to be estimated for quantities than for wages, and that impacts are smaller in smaller geographical units where the possibility of adjustment by factor flows to other units exists. Another interesting result of Longhi et al. (2008) is that the factor proportions approach tends to provide less support for negative labour market impacts of immigration than the spatial correlations approach.[23] Finally, from the quantitative evaluation of the recent literature the insight emerges that in Europe immigration tends to impact more on employment than on wages, while the opposite is true for the US.

As a further possibility, labour market and other macroeconomic effects of migration are studied in the framework of computable general equilibrium (CGE) or other macroeconomic models. This approach goes beyond those presented above in so far as it allows for the consideration of trade flows in addition to capital stock adjustments and migration flows. A most recent contribution in this group is Baas and Brücker (2008) who study the effect of the diversion of traditionally Germany-oriented migration to the United Kingdom subsequent to the asymmetric labour migration rules adopted in the EU. They find that immigration results in higher GDP and employment levels, but also in retarded wage growth and unemployment decline. In line with the standard neoclassical model, capital owners benefit from EU enlargement with labour mobility, while native workers incur losses. As compared with symmetric introductions of free movement by 2004, Germany is found to experience a GDP loss of 0.4%, while the UK benefits from GDP gains of a similar extent. It is further shown that with opening labour markets to immigration in 2004, German unemployment would have declined by 0.3 percentage points less than otherwise as a result of the stimulus of enlargement. Baas and Brücker (2008) argue that their overall effects are larger than those found in earlier studies due to the fact that the positive trade impacts of enlargement had been underestimated in the former. This illustrates the importance of jointly considering trade flows with migration flows and capital stock adjustments when evaluating the economic impact of immigration. As another recent macroeconomic simulation study on the eastern EU enlargement, Barrell et al. (2007) adopt a somewhat different, new Keynesian model to simulate the effects of immigration from the new EU members of 2004 to the UK, Ireland, Denmark and Sweden on the economies of the source and destination countries. They find small overall macroeconomic

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[23]   Actually this is surprising because local units offer more opportunities for adjustment to immigrant worker inflows, such as outward migration.

effects, including the moderation of inflation, increased unemployment, and a decline in labour productivity. In the sending countries the effects are mostly symmetric but opposite. The GDP effects in a ten-year time horizon are around 0.15 percentage points for most destination countries, except the United Kingdom and Ireland where these effects are much larger, 0.7 and 1.7 percentage points respectively. In per capita terms, however, the GDP effects are much smaller, 0.05 percentage points for most destination countries and 0.22 and 0.33 for the United Kingdom and Ireland respectively.

Summarizing the overview on the labour market effects of immigration, the bottom line of recent research is that such effects are small altogether. This is because of the fact that native and migrant workers are imperfect substitutes. However, from the above studies it also emerges that the effects on weaker groups in the labour market, lower-skilled workers and earlier migrants in particular, tend to suffer more from negative labour market impacts of immigration.

ANNEX A: Labour market indicators

Table A1a

Change in employment, in ths., 2000-2007

Sector	Country	AT	CZ	HU	PL	SI	SK	BG	RO	EE	LV	LT	NMS-5	NMS-7	NMS-10	EU-15
Agriculture (A-B)		6.7	-67.9	-67.2	-468.0	10.4	-46.5	-121.4	-2053.6	-8.2	-30.3	-110.6	-639.1	-2814.2	-2956.5	-854.1
Industry (C-E)		-34.1	101.4	-73.8	183.6	-4.3	76.4	112.8	-90.9	-3.2	-4.1	4.2	283.4	305.3	268.2	-1615.0
Construction (F)		18.5	9.4	63.2	-35.7	10.7	69.1	129.1	280.7	36.3	69.9	90.1	116.8	526.7	741.4	1781.6
Trade & Transport (G-H)		106.9	36.3	69.1	305.2	4.1	77.0	159.6	311.4	22.7	71.5	94.1	491.6	962.6	1257.8	3476.3
Communications (I)		-12.0	-13.6	-13.5	30.6	-1.2	-8.1	4.7	-9.0	-2.6	2.6	-3.9	-5.8	-10.1	-26.0	-7.3
Financial intermediation (J)		-5.3	6.3	-0.5	-6.0	2.2	10.3	12.3	5.6	1.0	9.9	8.4	12.5	30.3	44.5	218.4
Real estate, business activities (K)		111.4	86.8	79.3	440.9	24.3	59.5	73.6	150.4	10.0	27.8	32.8	690.7	914.7	1096.7	4710.0
Public admin. & Education (L-M)		35.6	8.5	7.9	279.7	18.5	-2.2	62.2	20.5	15.9	8.0	-11.0	312.4	395.1	443.7	2366.2
Health, social & personal services (N-P)		89.5	76.6	32.5	-83.4	14.7	20.5	39.9	85.4	10.2	17.5	26.1	61.0	186.3	329.7	5007.3
TOTAL		**317.3**	**243.9**	**97.1**	**646.9**	**79.5**	**256.1**	**472.7**	**-1299.5**	**82.2**	**172.9**	**130.2**	**1323.5**	**496.7**	**1199.4**	**15083.4**

Table A1b

Change in employment, in %, 2000-2007

Sector	country	AT	CZ	HU	PL	SI	SK	BG	RO	EE	LV	LT	NMS-5	NMS-7	NMS-10	EU-15
Agriculture (A-B)		3.0	-27.8	-27.2	-17.3	12.1	-31.9	-33.1	-42.6	-21.0	-21.5	-40.9	-18.6	-32.7	-31.8	-12.4
Industry (C-E)		-4.2	7.1	-7.2	5.4	-1.5	12.4	15.1	-3.9	-2.1	-2.1	1.4	4.2	3.1	2.4	-4.8
Construction (F)		5.9	2.2	23.7	-3.3	22.2	41.2	79.1	70.6	81.2	123.5	111.5	5.8	20.6	24.3	14.2
Trade & Transport (G-H)		10.9	3.4	7.5	10.2	2.0	16.9	23.0	22.6	16.4	31.2	32.0	8.8	12.5	13.5	9.4
Communications (I)		-17.1	-16.2	-16.6	15.5	-8.0	-19.1	10.5	-9.3	-25.2	17.8	-16.9	-1.4	-1.8	-3.8	-0.3
Financial intermediation (J)		-3.7	6.7	-0.5	-1.6	10.3	27.8	39.0	6.1	12.5	85.3	60.9	2.1	4.1	4.9	4.0
Real estate, business activities (K)		44.2	32.6	38.6	86.7	56.0	69.0	82.2	114.3	25.3	61.4	76.9	62.2	68.7	64.1	34.1
Public admin. & Education (L-M)		7.9	1.4	1.4	15.8	16.7	-0.7	15.8	2.4	20.5	5.1	-4.6	9.2	8.5	8.0	10.4
Health, social & personal services (N-P)		18.8	16.7	7.8	-5.7	18.0	9.1	16.2	15.7	16.7	19.2	17.9	2.3	5.4	7.8	20.5
TOTAL		**8.6**	**5.2**	**2.5**	**4.5**	**8.9**	**12.2**	**17.0**	**-12.2**	**14.4**	**18.3**	**9.3**	**5.1**	**1.3**	**2.6**	**9.5**

Table A1c

Contributions to total employment growth, 2000-2007

Sector	Country	AT	CZ	HU	PL	SI	SK	BG	RO	EE	LV	LT	NMS-5	NMS-7	NMS-10	EU-15
Agriculture (A-B)		0.18	-1.45	-1.75	-3.22	1.17	-2.21	-4.37	-19.28	-1.44	-3.21	-7.88	-2.46	-7.13	-6.42	-0.54
Industry (C-E)		-0.92	2.17	-1.93	1.26	-0.48	3.64	4.06	-0.85	-0.56	-0.43	0.30	1.09	0.77	0.58	-1.02
Construction (F)		0.50	0.20	1.65	-0.25	1.20	3.29	4.65	2.64	6.33	7.41	6.42	0.45	1.33	1.61	1.12
Trade & Transport (G-H)		2.88	0.78	1.80	2.10	0.45	3.67	5.74	2.92	3.97	7.58	6.70	1.89	2.44	2.73	2.19
Communications (I)		-0.32	-0.29	-0.35	0.21	-0.13	-0.39	0.17	-0.08	-0.45	0.27	-0.28	-0.02	-0.03	-0.06	0.00
Financial intermediation (J)		-0.14	0.14	-0.01	-0.04	0.25	0.49	0.44	0.05	0.18	1.05	0.60	0.05	0.08	0.10	0.14
Real estate, business activities (K)		3.00	1.86	2.07	3.04	2.71	2.83	2.65	1.41	1.74	2.95	2.33	2.65	2.32	2.38	2.96
Public admin. & Education (L-M)		0.96	0.18	0.21	1.93	2.07	-0.11	2.24	0.19	2.79	0.85	-0.78	1.20	1.00	0.96	1.49
Health, social & personal services (N-P)		2.41	1.64	0.85	-0.57	1.64	0.98	1.44	0.80	1.79	1.86	1.86	0.23	0.47	0.72	3.15
TOTAL		**8.55**	**5.21**	**2.54**	**4.46**	**8.88**	**12.19**	**17.01**	**-12.20**	**14.36**	**18.32**	**9.27**	**5.09**	**1.26**	**2.60**	**9.49**

Source: EUROSTAT LFS, wiiw calculations.

Table A2a

Employment, in ths., 2007

Sector	Country	AT	CZ	HU	PL	SI	SK	BG	RO	EE	LV	LT	NMS-5	NMS-7	NMS-10	EU-15
Agriculture (A-B)		231	176	180	2243	96	99	245	2762	31	111	160	2795	5802	6334	6022
Industry (C-E)		769	1532	952	3614	284	691	862	2259	150	192	299	7074	10195	11605	31840
Construction (F)		329	447	331	1044	59	237	292	679	81	127	171	2117	3088	3796	14293
Trade & Transport (G-H)		1089	1088	987	3290	204	533	853	1689	162	301	388	6102	8643	10583	40386
Communications (I)		58	70	68	228	13	34	49	88	8	17	19	414	552	654	2851
Financial intermediation (J)		135	102	85	362	24	48	44	97	9	22	22	620	761	949	5625
Real estate, business activities (K)		363	353	285	949	68	146	163	282	49	73	75	1801	2246	2807	18507
Public admin. & Education (L-M)		487	617	588	2052	129	323	456	869	94	166	228	3709	5034	6009	25025
Health, social & personal services (N-P)		565	536	451	1383	96	246	287	629	71	109	172	2712	3628	4546	29456
TOTAL		4028	4921	3926	15164	974	2357	3253	9353	655	1117	1534	27344	39949	47283	174004

Table A2b

Employment structure, in % of total employment, 2007

Sector	Country	AT	CZ	HU	PL	SI	SK	BG	RO	EE	LV	LT	NMS-5	NMS-7	NMS-10	EU-15
Agriculture (A-B)		5.7	3.6	4.6	14.8	9.9	4.2	7.5	29.5	4.7	9.9	10.4	10.2	14.5	13.4	3.5
Industry (C-E)		19.1	31.1	24.3	23.8	29.2	29.3	26.5	24.2	22.9	17.2	19.5	25.9	25.5	24.5	18.3
Construction (F)		8.2	9.1	8.4	6.9	6.0	10.1	9.0	7.3	12.4	11.3	11.1	7.7	7.7	8.0	8.2
Trade & Transport (G-H)		27.0	22.1	25.1	21.7	20.9	22.6	26.2	18.1	24.7	26.9	25.3	22.3	21.6	22.4	23.2
Communications (I)		1.4	1.4	1.7	1.5	1.4	1.5	1.5	0.9	1.2	1.5	1.2	1.5	1.4	1.4	1.6
Financial intermediation (J)		3.4	2.1	2.2	2.4	2.5	2.0	1.3	1.0	1.4	1.9	1.5	2.3	1.9	2.0	3.2
Real estate, business activities (K)		9.0	7.2	7.3	6.3	6.9	6.2	5.0	3.0	7.6	6.6	4.9	6.6	5.6	5.9	10.6
Public admin. & Education (L-M)		12.1	12.5	15.0	13.5	13.3	13.7	14.0	9.3	14.3	14.9	14.8	13.6	12.6	12.7	14.4
Health, social & personal services (N-P)		14.0	10.9	11.5	9.1	9.9	10.4	8.8	6.7	10.9	9.8	11.2	9.9	9.1	9.6	16.9
TOTAL		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: EUROSTAT LFS, wiiw calculations.

Table A3a

Employment, in ths., 2000

sector	Country	AT	CZ	HU	PL	SI	SK	BG	RO	EE	LV	LT	NMS-5	NMS-7	NMS-10	EU-15
Agriculture (A-B)		225	244	247	2711	86	146	367	4816	39	141	270	3434	8616	9291	6876
Industry (C-E)		803	1431	1026	3430	289	615	750	2350	153	196	295	6790	9890	11337	33455
Construction (F)		311	437	267	1080	48	168	163	398	45	57	81	2000	2561	3054	12511
Trade & Transport (G-H)		982	1052	918	2985	200	456	693	1377	139	229	294	5610	7681	9325	36910
Communications (I)		70	84	81	198	15	43	45	97	10	14	23	420	562	680	2859
Financial intermediation (J)		140	95	85	368	22	37	31	92	8	12	14	608	731	905	5407
Real estate, business activities (K)		252	266	206	508	43	86	90	132	40	45	43	1110	1331	1710	13797
Public admin. & Education (L-M)		451	608	580	1772	111	326	394	848	78	158	239	3397	4639	5565	22659
Health, social & personal services (N-P)		476	460	418	1466	82	225	247	544	61	91	146	2651	3442	4216	24448
TOTAL		3711	4677	3829	14518	895	2101	2780	10653	573	944	1404	26020	39453	46083	158921

Table A3b

Employment structure, in % of total employment, 2000

Sector	Country	AT	CZ	HU	PL	SI	SK	BG	RO	EE	LV	LT	NMS-5	NMS-7	NMS-10	EU-15
Agriculture (A-B)		6.1	5.2	6.5	18.7	9.6	6.9	13.2	45.2	6.8	14.9	19.2	13.2	21.8	20.2	4.3
Industry (C-E)		21.7	30.6	26.8	23.6	32.3	29.3	27.0	22.1	26.7	20.8	21.0	26.1	25.1	24.6	21.1
Construction (F)		8.4	9.4	7.0	7.4	5.4	8.0	5.9	3.7	7.8	6.0	5.8	7.7	6.5	6.6	7.9
Trade & Transport (G-H)		26.5	22.5	24.0	20.6	22.3	21.7	24.9	12.9	24.3	24.3	20.9	21.6	19.5	20.2	23.2
Communications (I)		1.9	1.8	2.1	1.4	1.6	2.0	1.6	0.9	1.8	1.5	1.6	1.6	1.4	1.5	1.8
Financial intermediation (J)		3.8	2.0	2.2	2.5	2.4	1.8	1.1	0.9	1.5	1.2	1.0	2.3	1.9	2.0	3.4
Real estate, business activities (K)		6.8	5.7	5.4	3.5	4.8	4.1	3.2	1.2	6.9	4.8	3.0	4.3	3.4	3.7	8.7
Public admin. & Education (L-M)		12.2	13.0	15.1	12.2	12.4	15.5	14.2	8.0	13.6	16.8	17.0	13.1	11.8	12.1	14.3
Health, social & personal services (N-P)		12.8	9.8	10.9	10.1	9.1	10.7	8.9	5.1	10.7	9.7	10.4	10.2	8.7	9.1	15.4
TOTAL		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: EUROSTAT LFS, wiiw calculations.

Table A4

Activity, employment and unemployment rates by educational attainment levels

	Activity rates (15-64)				Employment rates (15-64)				Unemployment rates (15-74)			
	Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High
Total population												
Austria	74.7	56.9	78.8	88.7	71.4	51.9	75.9	86.5	4.4	8.6	3.7	2.5
Czech Republic	69.9	30.4	76.2	85.5	66.1	24.2	72.6	84.0	5.3	20.1	4.7	1.7
Hungary	61.9	33.1	69.4	82.4	57.3	27.3	64.8	80.0	7.4	17.3	6.6	2.9
Poland	63.2	29.8	68.0	86.8	57.0	24.9	61.0	82.8	9.6	15.7	10.3	4.6
Slovenia	71.3	46.6	74.6	90.5	67.8	43.1	70.8	87.5	4.8	6.8	5.0	3.3
Slovak Republic	68.3	26.8	76.2	86.6	60.7	14.7	69.0	83.1	11.1	44.9	9.4	4.1
Bulgaria	66.3	37.3	74.9	86.7	61.7	30.6	70.6	84.6	6.9	17.6	5.8	2.4
Romania	63.0	44.1	68.7	88.4	58.8	40.3	63.9	85.8	6.4	7.1	6.9	2.9
Estonia	72.9	37.5	78.3	89.0	69.4	33.1	74.4	86.8	4.7	11.2	4.8	2.3
Latvia	72.8	43.3	79.0	90.3	68.3	38.6	74.3	86.9	6.0	10.3	5.8	3.7
Lithuania	67.9	28.0	72.3	90.0	64.9	25.9	68.6	88.1	4.3	7.2	5.1	2.0
NMS-5	64.7	30.8	70.6	86.1	59.2	25.1	64.6	82.7	8.5	18.0	8.5	3.9
NMS-7	64.5	35.4	70.5	86.5	59.3	30.2	64.8	83.4	7.9	13.5	7.9	3.6
NMS-10	64.9	35.4	70.8	86.9	59.8	30.3	65.2	83.8	7.7	13.2	7.8	3.5
EU-15	72.1	58.0	77.5	87.4	67.0	51.9	72.3	83.9	7.0	10.3	6.6	4.0
EU-25	70.5	54.5	75.5	87.3	65.4	48.6	70.3	83.9	7.1	10.6	6.9	4.0
Women												
Austria	67.8	51.7	72.5	84.6	64.4	47.2	69.5	81.8	5.0	8.6	4.1	3.3
Czech Republic	61.5	29.8	67.4	78.0	57.3	23.9	63.2	76.7	6.7	19.4	6.1	1.7
Hungary	55.1	28.6	62.0	78.0	50.9	24.0	57.4	75.4	7.7	16.0	7.3	3.3
Poland	56.5	23.3	59.2	84.4	50.6	19.3	52.2	79.9	10.4	16.1	11.7	5.3
Slovenia	66.6	40.6	68.8	90.0	62.6	37.7	64.0	86.5	5.9	6.1	6.8	3.8
Slovak Republic	60.8	25.4	67.4	82.1	53.0	14.5	60.0	77.9	12.7	42.4	11.0	5.2
Bulgaria	62.1	32.6	68.8	84.5	57.6	25.7	64.5	82.4	7.3	20.9	6.3	2.5
Romania	56.0	37.4	62.1	87.4	52.8	35.1	58.2	84.7	5.4	4.8	6.3	3.1
Estonia	68.7	28.4	70.8	86.3	65.9	25.5	67.6	84.3	3.9	9.8	4.4	2.3
Latvia	68.3	31.0	73.0	88.7	64.4	27.6	68.8	85.4	5.6	10.5	5.7	3.7
Lithuania	65.0	21.3	66.9	89.0	62.1	19.6	63.3	87.0	4.4	7.8	5.5	2.2
NMS-5	57.7	26.0	62.0	82.8	52.3	21.1	55.9	79.0	9.4	18.0	9.8	4.6
NMS-7	57.7	30.2	62.5	83.7	52.8	26.0	56.9	80.2	8.3	12.5	8.8	4.1
NMS-10	58.3	30.0	62.9	84.2	53.5	25.8	57.5	80.9	8.0	12.4	8.6	3.9
EU-15	64.8	47.4	71.5	84.3	59.7	41.7	66.2	80.5	7.8	11.8	7.4	4.6
EU-25	63.4	44.6	69.1	84.3	58.4	39.2	63.7	80.5	7.8	11.9	7.7	4.4
Men												
Austria	81.7	64.5	84.6	91.8	78.4	58.8	81.8	89.9	3.9	8.7	3.3	2.0
Czech Republic	78.1	31.1	84.5	91.9	74.8	24.5	81.4	90.4	4.2	21.1	3.6	1.6
Hungary	69.0	38.9	76.1	88.1	64.0	31.6	71.5	85.9	7.1	18.4	6.1	2.4
Poland	70.0	36.4	76.4	90.3	63.6	30.5	69.3	86.8	9.0	15.5	9.3	3.8
Slovenia	75.8	53.3	79.3	91.2	72.7	49.2	76.4	88.8	4.0	7.2	3.7	2.6
Slovak Republic	75.9	28.4	84.5	91.4	68.4	14.9	77.6	88.7	9.9	47.7	8.1	3.0
Bulgaria	70.6	42.0	80.4	90.1	66.0	35.5	76.0	88.0	6.5	15.1	5.4	2.4
Romania	70.1	52.7	74.5	89.4	64.8	46.9	69.0	86.9	7.2	9.3	7.3	2.8
Estonia	77.5	44.6	85.5	100.0	73.2	39.1	81.0	91.2	5.4	11.9	5.2	2.5
Latvia	77.6	52.7	85.4	92.8	72.5	47.1	80.3	89.2	6.4	10.1	5.9	3.9
Lithuania	71.0	33.8	77.8	91.4	67.9	31.3	74.0	89.6	4.3	7.0	4.8	1.9
NMS-5	71.9	36.2	78.6	90.3	66.2	29.5	72.8	87.4	7.8	17.9	7.5	3.2
NMS-7	71.4	41.5	77.9	90.1	65.9	35.0	72.1	87.4	7.6	14.3	7.3	3.0
NMS-10	71.6	41.6	78.1	90.5	66.2	35.3	72.4	87.6	7.4	13.9	7.2	3.0
EU-15	79.3	68.9	83.2	90.5	74.2	62.4	78.2	87.2	6.4	9.3	5.9	3.6
EU-25	77.7	64.8	81.7	90.5	72.5	58.4	76.5	87.3	6.6	9.7	6.3	3.5

Source: EUROSTAT LFS, wiiw calculations.

Table A5

Activity, employment and unemployment rates by age groups

	Activity rates (15-64)				Employment rates (15-64)				Unemployment rates (15-74)			
	Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High
Population aged 15-64												
Austria	74.7	56.9	78.8	88.7	71.4	51.9	75.9	86.5	4.5	8.8	3.7	2.5
Czech Republic	69.9	30.4	76.2	85.5	66.1	24.2	72.6	84.0	5.4	20.4	4.7	1.7
Hungary	61.9	33.1	69.4	82.4	57.3	27.3	64.8	80.0	7.4	17.5	6.6	2.9
Poland	63.2	29.8	68.0	86.8	57.0	24.9	61.0	82.8	9.7	16.5	10.3	4.7
Slovenia	71.3	46.6	74.6	90.5	67.8	43.1	70.8	87.5	5.0	7.4	5.0	3.3
Slovak Republic	68.3	26.8	76.2	86.6	60.7	14.7	69.0	83.1	11.2	45.1	9.4	4.1
Bulgaria	66.3	37.3	74.9	86.7	61.7	30.6	70.6	84.6	6.9	18.0	5.8	2.4
Romania	63.0	44.1	68.7	88.4	58.8	40.3	63.9	85.8	6.8	8.6	6.9	3.0
Estonia	72.9	37.5	78.3	89.0	69.4	33.1	74.4	86.8	4.8	11.7	4.9	2.5
Latvia	72.8	43.3	79.0	90.3	68.3	38.6	74.3	86.9	6.1	10.8	5.9	3.7
Lithuania	67.9	28.0	72.3	90.0	64.9	25.9	68.6	88.1	4.4	7.7	5.1	2.1
NMS-5	64.7	30.8	70.6	86.1	59.2	25.1	64.6	82.7	8.6	18.6	8.5	3.9
NMS-7	64.5	35.4	70.5	86.5	59.3	30.2	64.8	83.4	8.1	14.8	8.0	3.6
NMS-10	64.9	35.4	70.8	86.9	59.8	30.3	65.2	83.8	7.8	14.5	7.8	3.5
EU-15	71.9	57.7	77.4	87.4	66.8	51.6	72.2	83.9	7.1	10.6	6.8	4.0
EU-25	70.4	54.2	75.5	87.4	65.3	48.3	70.2	83.9	7.2	11.0	7.0	4.0
Population aged 15-24												
Austria	60.8	46.7	74.6	81.3	55.5	40.9	70.0	73.0	8.7	12.4	6.2	10.2
Czech Republic	31.9	6.5	53.9	53.7	28.5	4.4	49.2	48.9	10.7	31.2	8.6	8.8
Hungary	25.6	9.7	38.7	80.0	21.0	6.7	32.7	70.2	18.0	30.5	15.6	12.3
Poland	33.0	8.9	51.0	71.5	25.8	6.9	39.9	57.2	21.7	22.8	21.7	20.0
Slovenia	41.8	18.9	56.5	87.6	37.6	16.4	51.2	79.4	10.1	13.2	9.4	9.3
Slovak Republic	34.6	7.2	56.4	76.5	27.6	2.5	47.8	62.0	20.3	66.2	15.3	19.0
Bulgaria	28.9	9.5	50.0	74.3	24.5	6.7	43.8	67.4	15.1	29.5	12.3	9.2
Romania	30.5	20.2	40.3	80.4	24.4	16.5	31.8	63.4	20.1	18.6	21.0	21.1
Estonia	38.3	20.1	55.0	81.2	34.5	16.4	51.0	77.5	10.0	18.5	7.3	4.6
Latvia	43.0	21.7	63.2	85.5	38.4	18.1	57.2	81.8	10.7	16.8	9.4	4.3
Lithuania	27.4	9.0	38.9	75.8	25.2	8.0	35.7	71.1	8.2	11.2	8.1	6.2
NMS-5	32.2	8.8	50.6	71.6	26.1	6.3	41.5	58.7	19.2	27.7	18.0	18.1
NMS-7	31.6	11.8	48.3	73.1	25.5	9.0	39.5	60.0	19.1	23.8	18.1	18.0
NMS-10	31.8	12.1	48.4	74.1	26.0	9.3	39.9	62.2	18.3	23.0	17.5	16.0
EU-15	47.7	37.5	59.5	69.3	40.6	30.0	52.2	62.5	14.9	19.8	12.3	9.8
EU-25	43.8	31.3	56.4	69.9	37.0	25.0	48.8	62.4	15.5	20.1	13.5	10.7
Population aged 25-34												
Austria	86.1	74.9	86.8	91.6	82.1	66.1	83.4	88.8	4.7	11.9	4.0	3.0
Czech Republic	81.5	67.3	82.5	81.7	77.2	49.5	78.7	80.2	5.2	26.4	4.6	1.8
Hungary	79.4	60.4	81.9	84.9	73.2	46.9	76.3	81.8	7.8	22.4	6.8	3.6
Poland	84.4	65.4	82.6	92.9	76.4	51.4	74.2	87.6	9.4	21.4	10.2	5.7
Slovenia	91.1	79.1	90.6	95.3	85.4	70.5	85.0	90.0	6.2	10.9	6.1	5.5
Slovak Republic	83.3	58.9	84.1	88.2	74.2	23.8	76.0	83.7	10.9	59.5	9.6	5.2
Bulgaria	81.7	61.8	84.3	90.3	76.2	49.3	79.7	88.1	6.7	20.3	5.5	2.4
Romania	78.3	65.4	78.7	93.1	73.2	58.4	73.7	90.2	6.5	10.7	6.3	3.2
Estonia	86.0	76.4	86.7	88.7	82.4	69.2	83.1	86.8	4.1	9.4	4.2	2.1
Latvia	85.6	78.3	85.8	90.4	80.6	70.7	81.2	86.6	5.9	9.6	5.3	4.2
Lithuania	85.5	66.3	86.1	92.0	81.9	60.6	81.5	90.2	4.3	8.6	5.3	2.0
NMS-5	83.2	64.3	82.9	90.5	76.1	48.8	75.9	86.0	8.5	24.1	8.4	5.0
NMS-7	82.0	64.5	82.0	90.9	75.5	52.8	75.6	86.8	7.9	18.2	7.8	4.5
NMS-10	82.2	65.2	82.2	90.9	75.8	53.9	75.9	87.0	7.7	17.4	7.7	4.4
EU-15	84.9	76.4	84.9	91.0	78.3	66.4	78.8	86.3	7.7	13.1	7.2	5.2
EU-25	84.3	74.9	84.1	91.0	77.7	64.7	77.9	86.4	7.7	13.6	7.3	5.1

Table A5 contd.

Table A5 (contd.)

	Activity rates (15-64)				Employment rates (15-64)				Unemployment rates (15-74)			
	Total	Low	Medium	High	Total	Low	Medium	High	Total	Low	Medium	High
Population aged 35-49												
Austria	89.5	78.1	91.1	94.8	86.4	72.5	88.3	92.8	3.5	7.2	3.1	2.1
Czech Republic	92.4	75.4	93.3	95.5	88.2	59.7	89.6	94.3	4.6	20.9	4.0	1.2
Hungary	83.1	62.7	86.3	92.3	77.7	52.0	81.5	90.1	6.5	17.1	5.5	2.3
Poland	84.9	68.6	84.8	95.6	78.4	57.2	77.9	93.8	7.7	16.6	8.1	1.8
Slovenia	92.1	80.8	93.0	98.1	89.1	75.7	90.2	96.4	3.2	6.3	3.1	1.8
Slovak Republic	90.7	69.9	92.1	94.5	81.9	37.9	84.6	92.7	9.7	45.8	8.2	1.9
Bulgaria	87.2	68.2	89.3	96.3	82.1	56.3	85.2	94.3	5.8	17.5	4.6	2.0
Romania	83.0	69.2	84.1	96.8	78.7	63.9	79.6	95.4	5.2	7.7	5.4	1.4
Estonia	90.5	69.3	90.3	94.7	86.5	60.4	85.7	92.5	4.4	12.8	5.1	2.4
Latvia	88.7	76.4	87.8	95.6	83.9	68.8	82.7	92.9	5.4	10.0	5.8	2.8
Lithuania	87.3	60.3	86.0	96.0	84.0	54.6	82.2	94.5	3.8	9.6	4.5	1.6
NMS-5	86.6	68.6	87.3	95.1	80.5	55.9	81.3	93.3	7.0	18.5	6.9	1.8
NMS-7	85.8	68.7	86.7	95.5	80.2	58.3	81.2	93.8	6.5	15.1	6.4	1.8
NMS-10	86.0	68.7	86.8	95.5	80.5	58.4	81.3	93.8	6.3	14.9	6.3	1.8
EU-15	86.2	76.2	88.9	93.5	81.5	69.8	84.2	90.7	5.5	8.4	5.3	2.9
EU-25	86.2	75.6	88.3	93.7	81.3	68.8	83.4	91.1	5.6	8.9	5.6	2.8
Population aged 50-64												
Austria	55.3	44.7	55.1	76.1	53.5	42.4	53.5	74.5	3.2	5.0	2.9	2.1
Czech Republic	62.5	44.4	63.3	80.8	59.4	38.1	60.5	79.4	5.0	14.1	4.4	1.7
Hungary	50.2	29.6	55.3	69.3	47.6	26.8	52.4	68.3	5.1	9.4	5.3	1.5
Poland	47.0	34.3	47.4	67.5	43.4	30.4	43.6	65.7	7.5	11.3	7.9	2.7
Slovenia	51.2	41.6	49.8	72.2	49.1	39.6	47.5	70.7	4.1	4.9	4.6	2.1
Slovak Republic	57.6	36.6	59.7	76.9	52.2	26.2	55.0	74.7	9.4	28.5	7.8	2.9
Bulgaria	56.9	40.0	61.9	71.3	53.3	34.4	58.7	69.5	6.5	14.0	5.2	2.5
Romania	52.9	48.3	52.5	72.7	51.0	46.7	50.3	71.6	3.5	3.2	4.3	1.5
Estonia	71.9	47.2	72.0	83.1	69.3	45.2	69.0	81.0	3.6	4.3	4.2	2.5
Latvia	69.8	49.4	72.0	83.6	66.3	46.0	68.5	79.7	5.0	6.8	4.8	4.6
Lithuania	65.5	39.0	66.0	82.0	62.8	37.9	62.6	80.3	4.0	2.8	5.1	2.1
NMS-5	51.1	34.9	52.5	70.8	47.7	30.6	49.1	69.2	6.7	12.2	6.6	2.3
NMS-7	51.9	39.6	53.1	71.1	48.8	36.1	49.9	69.6	6.0	8.9	6.1	2.2
NMS-10	52.9	39.8	54.1	72.4	49.8	36.3	50.9	70.7	5.8	8.7	6.0	2.3
EU-15	60.3	48.3	66.6	78.2	57.1	45.1	62.8	75.7	5.4	6.6	5.7	3.2
EU-25	58.7	47.1	62.8	77.3	55.5	43.8	59.1	74.9	5.5	6.9	5.8	3.1

Source: EUROSTAT LFS, wiiw calculations.

Table A6

Shares of education groups in working-age population, active population and total employment

	Shares of education groups in working-age population (15-64)			Shares of education groups in active population (15-64)			Shares of education groups in total employment (15-64)		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Total population									
Austria	25.2	60.0	14.8	19.2	63.3	17.5	18.3	63.8	17.9
Czech Republic	16.2	72.2	11.6	7.0	78.8	14.2	5.9	79.3	14.8
Hungary	26.2	58.5	15.4	14.0	65.5	20.5	12.5	66.1	21.5
Poland	20.4	63.9	15.7	9.6	68.8	21.5	8.9	68.4	22.7
Slovenia	22.2	59.3	18.5	14.5	62.1	23.5	14.1	62.0	23.9
Slovak Republic	18.4	69.7	11.9	7.2	77.7	15.1	4.5	79.3	16.3
Bulgaria	28.7	52.8	18.5	16.1	59.6	24.2	14.2	60.4	25.4
Romania	30.9	59.1	9.9	21.6	64.5	13.9	21.2	64.3	14.5
Estonia	20.4	52.4	27.3	10.5	56.2	33.3	9.7	56.2	34.1
Latvia	23.5	57.5	18.8	14.0	62.4	23.3	13.3	62.6	23.9
Lithuania	19.6	56.3	24.1	8.1	60.0	31.9	7.8	59.5	32.7
NMS-5	20.5	64.8	14.7	9.8	70.6	19.6	8.7	70.7	20.6
NMS-7	23.5	62.6	13.9	12.9	68.4	18.7	12.0	68.4	19.6
NMS-10	23.3	62.1	14.5	12.7	67.8	19.5	11.8	67.8	20.4
EU-15	34.9	41.9	22.0	28.1	44.9	26.6	27.1	45.1	27.5
EU-25	32.4	46.3	20.4	25.1	49.5	25.2	24.1	49.6	26.1
Women									
Austria	29.8	57.6	12.5	22.7	61.6	15.7	21.8	62.2	15.9
Czech Republic	18.8	70.4	10.9	9.1	77.1	13.8	7.8	77.6	14.5
Hungary	28.6	54.5	16.9	14.8	61.3	23.9	13.5	61.5	25.0
Poland	20.2	61.6	18.1	8.4	64.6	27.1	7.7	63.6	28.6
Slovenia	24.0	54.4	21.6	14.6	56.2	29.2	14.5	55.6	29.9
Slovak Republic	20.1	67.6	12.3	8.4	75.0	16.6	5.5	76.4	18.0
Bulgaria	28.2	49.3	22.4	14.8	54.7	30.5	12.6	55.3	32.1
Romania	34.8	55.4	9.8	23.3	61.5	15.3	23.2	61.1	15.7
Estonia	17.2	49.6	33.2	7.1	51.2	41.7	6.7	50.9	42.4
Latvia	19.8	57.5	22.6	9.0	61.4	29.4	8.4	61.3	30.0
Lithuania	17.6	54.6	27.8	5.8	56.2	38.0	5.5	55.6	38.9
NMS-5	21.4	62.2	16.4	9.6	66.8	23.5	8.6	66.6	24.8
NMS-7	25.0	59.7	15.4	13.1	64.6	22.3	12.3	64.4	23.4
NMS-10	24.5	59.3	16.2	12.6	64.0	23.4	11.8	63.7	24.5
EU-15	35.2	41.0	22.1	25.9	45.2	28.7	24.7	45.3	29.7
EU-25	32.9	45.0	20.8	23.2	48.9	27.7	22.1	49.0	28.7
Men									
Austria	20.5	62.5	17.0	16.2	64.7	19.1	15.4	65.1	19.5
Czech Republic	13.6	74.0	12.4	5.4	80.0	14.5	4.4	80.6	14.9
Hungary	23.6	62.6	13.8	13.3	69.1	17.6	11.7	69.8	18.5
Poland	20.6	66.3	13.1	10.7	72.4	16.9	9.9	72.2	17.9
Slovenia	20.5	64.1	15.5	14.4	67.0	18.6	13.8	67.3	18.9
Slovak Republic	16.7	71.8	11.5	6.3	79.9	13.8	3.6	81.5	14.9
Bulgaria	29.1	56.3	14.6	17.3	64.1	18.6	15.7	64.9	19.4
Romania	27.0	62.9	10.0	20.3	66.9	12.8	19.6	67.0	13.5
Estonia	23.7	55.4	20.8	13.7	61.1	26.9	12.7	61.3	26.0
Latvia	27.4	57.5	14.7	18.6	63.4	17.6	17.8	63.7	18.2
Lithuania	21.7	58.1	20.2	10.3	63.7	26.0	10.0	63.3	26.6
NMS-5	19.5	67.4	13.0	9.9	73.8	16.4	8.7	74.1	17.2
NMS-7	22.0	65.5	12.5	12.8	71.5	15.7	11.7	71.7	16.5
NMS-10	22.1	65.0	12.9	12.9	70.9	16.3	11.8	71.1	17.0
EU-15	34.5	42.8	21.9	30.0	44.8	25.0	29.0	45.0	25.7
EU-25	31.8	47.5	19.9	26.6	49.9	23.2	25.7	50.1	24.0

Source: EUROSTAT LFS, wiiw calculations.

Shares of education groups in working-age population, by age groups, active population and total employment

	Shares of education groups in working-age population (15-64)			Shares of education groups in active population (15-64)			Shares of education groups in total employment (15-64)		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Population aged 15-64									
Austria	25.2	60.0	14.8	19.2	63.3	17.5	18.3	63.8	17.9
Czech Republic	16.2	72.2	11.6	7.0	78.8	14.2	5.9	79.3	14.8
Hungary	26.2	58.5	15.4	14.0	65.5	20.5	12.5	66.1	21.5
Poland	20.4	63.9	15.7	9.6	68.8	21.5	8.9	68.4	22.7
Slovenia	22.2	59.3	18.5	14.5	62.1	23.5	14.1	62.0	23.9
Slovak Republic	18.4	69.7	11.9	7.2	77.7	15.1	4.5	79.3	16.3
Bulgaria	28.7	52.8	18.5	16.1	59.6	24.2	14.2	60.4	25.4
Romania	30.9	59.1	9.9	21.6	64.5	13.9	21.2	64.3	14.5
Estonia	20.4	52.4	27.3	10.5	56.2	33.3	9.7	56.2	34.1
Latvia	23.5	57.5	18.8	14.0	62.4	23.3	13.3	62.6	23.9
Lithuania	19.6	56.3	24.1	8.1	60.0	31.9	7.8	59.5	32.7
NMS-5	20.5	64.8	14.7	9.8	70.6	19.6	8.7	70.7	20.6
NMS-7	23.5	62.6	13.9	12.9	68.4	18.7	12.0	68.4	19.6
NMS-10	23.3	62.1	14.5	12.7	67.8	19.5	11.8	67.8	20.4
EU-15	34.9	41.9	22.0	27.9	45.1	26.7	26.9	45.3	27.6
EU-25	32.4	46.3	20.4	24.9	49.6	25.3	23.9	49.7	26.2
Population aged 15-24									
Austria	49.8	48.4	1.8	38.2	59.3	2.4	36.7	61.0	2.4
Czech Republic	46.3	51.6	2.1	9.4	87.1	3.6	7.2	89.1	3.7
Hungary	50.1	46.4	3.5	19.0	70.2	10.8	16.1	72.3	11.6
Poland	45.0	50.5	4.5	12.1	78.0	9.8	12.0	78.0	10.0
Slovenia	40.3	58.2	1.5	18.2	78.6	3.2	17.6	79.2	3.2
Slovak Republic	45.4	51.7	2.9	9.5	84.2	6.3	4.0	89.6	6.4
Bulgaria	53.8	43.5	2.7	17.7	75.2	7.0	14.7	77.7	7.5
Romania	52.9	45.0	2.1	35.0	59.4	5.6	35.7	58.8	5.5
Estonia	52.7	40.7	6.6	27.7	58.4	13.9	25.1	60.2	14.7
Latvia	52.2	41.6	6.3	26.4	61.1	12.5	24.6	62.0	13.4
Lithuania	48.2	43.9	7.9	15.8	62.3	21.9	15.3	62.4	22.4
NMS-5	45.8	50.4	3.8	12.4	79.1	8.5	11.1	80.3	8.6
NMS-7	48.1	48.6	3.3	17.9	74.4	7.7	16.9	75.3	7.8
NMS-10	48.2	48.2	3.6	18.3	73.3	8.4	17.3	74.1	8.6
EU-15	48.2	40.4	7.8	37.9	50.4	11.3	35.7	52.0	12.0
EU-25	48.2	42.3	6.7	34.4	54.5	10.8	32.6	55.7	11.4
Population aged 25-34									
Austria	13.5	67.6	18.9	11.7	68.2	20.1	10.9	68.7	20.5
Czech Republic	5.8	78.7	15.5	4.8	79.7	15.5	3.7	80.2	16.1
Hungary	14.7	63.3	22.0	11.2	65.3	23.5	9.4	66.0	24.6
Poland	7.9	62.1	30.0	6.1	60.8	33.1	5.3	60.2	34.5
Slovenia	7.7	62.2	30.1	6.7	61.9	31.5	6.3	62.0	31.7
Slovak Republic	6.0	76.5	17.5	4.3	77.3	18.5	1.9	78.4	19.7
Bulgaria	18.2	56.8	24.9	13.8	58.7	27.5	11.8	59.4	28.8
Romania	21.2	62.2	16.6	17.7	62.5	19.8	16.9	62.6	20.5
Estonia	13.8	51.6	34.6	12.3	52.0	35.7	11.6	52.0	36.4
Latvia	19.2	54.4	26.2	17.5	54.5	27.7	16.8	54.8	28.2
Lithuania	14.4	46.7	38.9	11.2	47.0	41.8	10.7	46.5	42.8
NMS-5	8.4	66.3	25.3	6.5	66.0	27.5	5.4	66.1	28.5
NMS-7	12.0	64.7	23.2	9.5	64.8	25.8	8.4	64.9	26.7
NMS-10	12.3	63.8	23.9	9.7	63.8	26.4	8.7	63.9	27.4
EU-15	23.0	45.2	31.6	20.7	45.2	33.9	19.5	45.5	34.8
EU-25	20.5	49.5	29.8	18.2	49.4	32.2	17.1	49.7	33.1

Table A7 contd.

Table A7 (contd.)

	Shares of education groups in working-age population (15-64)			Shares of education groups in active population (15-64)			Shares of education groups in total employment (15-64)		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Population aged 35-49									
Austria	28.0	56.9	15.0	15.1	65.0	19.8	14.6	65.3	20.1
Czech Republic	17.4	63.9	18.7	5.7	79.0	15.2	4.8	79.4	15.8
Hungary	7.0	78.2	14.7	13.5	67.0	19.4	12.0	67.7	20.3
Poland	14.6	74.0	11.4	8.1	73.8	18.0	7.3	73.5	19.2
Slovenia	28.2	56.2	15.5	14.7	61.7	23.5	14.3	61.8	23.9
Slovak Republic	17.9	64.6	17.5	6.3	79.8	14.0	3.8	81.1	15.2
Bulgaria	10.1	73.9	16.0	13.9	60.6	25.4	12.2	61.4	26.4
Romania	22.1	65.5	12.3	13.5	74.6	12.0	13.1	74.4	12.4
Estonia	16.8	61.1	22.1	4.7	58.8	36.5	4.3	58.4	37.3
Latvia	27.8	55.8	16.4	7.5	67.3	24.8	7.2	67.0	25.5
Lithuania	8.1	78.5	13.4	3.9	66.2	29.9	3.6	65.7	30.6
NMS-5	18.5	68.6	12.8	8.6	73.8	17.6	7.5	73.9	18.6
NMS-7	31.3	48.8	19.9	10.2	72.8	17.1	9.2	72.8	17.9
NMS-10	17.8	59.2	23.0	9.8	72.2	18.0	8.9	72.2	18.9
EU-15	16.2	73.6	10.3	26.6	45.6	27.6	25.7	45.7	28.4
EU-25	38.8	51.2	9.9	23.3	50.7	25.8	22.5	50.7	26.6
Population aged 50-64									
Austria	6.2	58.9	34.9	22.6	56.7	20.7	22.2	56.9	20.9
Czech Republic	14.0	55.5	30.5	10.4	74.9	14.7	9.4	75.4	15.3
Hungary	19.4	61.4	18.9	16.6	61.9	21.5	15.9	61.8	22.3
Poland	8.7	68.0	23.0	16.2	66.1	17.7	15.5	65.8	18.7
Slovenia	15.8	61.0	23.2	22.6	54.3	23.1	22.4	54.0	23.6
Slovak Republic	5.6	67.2	27.2	11.8	71.1	17.1	9.3	72.4	18.3
Bulgaria	10.8	73.1	16.0	22.0	53.1	24.9	20.2	53.8	26.0
Romania	21.7	65.4	12.8	35.5	50.9	13.7	35.6	50.5	13.9
Estonia	12.7	72.0	15.3	9.2	55.6	35.2	9.2	55.2	35.6
Latvia	26.1	61.1	12.8	13.7	63.3	22.7	13.5	63.4	22.8
Lithuania	25.5	61.0	13.4	9.4	61.5	29.1	9.5	60.8	29.7
NMS-5	12.3	71.5	16.2	14.8	67.3	17.8	14.0	67.4	18.6
NMS-7	30.0	44.2	25.5	19.9	62.5	17.5	19.3	62.5	18.2
NMS-10	40.9	37.6	19.7	19.2	62.4	18.4	18.6	62.3	19.1
EU-15	26.6	49.5	23.7	32.8	41.5	25.5	32.3	41.4	26.1
EU-25	37.6	42.6	18.3	30.2	45.5	24.1	29.7	45.4	24.7

Source: EUROSTAT LFS, wiiw calculations.

Table A8

Total employment, average annual growth rates

	2000-2007				2004-2007			
	Total	Low	Medium	High	Total	Low	Medium	High
Total population (15-64)								
Austria	1.2	0.0	1.0	3.2	3.0	6.5	3.1	-0.3
Czech Republic	0.7	-4.7	0.8	3.3	1.6	-0.8	1.4	3.9
Hungary	0.4	-4.1	0.5	3.9	0.2	-4.2	0.7	1.8
Poland	0.8	-5.1	0.0	8.2	3.8	-1.5	3.0	9.0
Slovenia	1.3	-2.6	0.9	6.0	1.2	-2.9	0.3	6.7
Slovak Republic	1.8	-4.3	1.5	5.9	3.2	-2.0	2.9	6.0
Bulgaria	1.8	-4.0	3.0	3.4	3.2	-5.7	5.9	3.0
Romania	-1.4	-6.2	-0.5	4.5	0.2	-3.9	0.6	5.4
Estonia	1.9	1.1	1.5	2.8	3.2	4.4	2.3	4.6
Latvia	2.3	3.4	1.3	4.4	2.9	1.8	1.8	6.1
Lithuania	1.2	-2.4	5.8	-3.7	2.1	-5.8	0.7	7.4
NMS-5	0.9	-4.7	0.4	6.5	2.7	-2.1	2.2	6.8
NMS-7	0.4	-5.3	0.4	5.8	2.1	-3.2	2.1	6.1
NMS-10	0.5	-5.0	0.5	4.9	2.2	-3.1	2.1	6.2
EU-15	1.4	-0.8	2.3	3.7	1.9	-0.4	2.7	3.9
EU-25	1.2	-1.3	1.8	3.9	1.9	-0.7	2.5	4.2
Women								
Austria	1.6	0.3	1.6	3.7	2.9	8.5	1.8	0.7
Czech Republic	0.4	-5.4	0.5	4.3	1.1	-3.2	0.8	5.4
Hungary	0.6	-4.2	0.4	4.7	0.1	-5.2	0.4	2.6
Poland	0.7	-6.7	-0.6	8.6	3.5	-4.8	2.1	10.0
Slovenia	1.0	-4.0	0.3	6.4	0.6	-5.0	-0.7	6.7
Slovak Republic	1.1	-6.0	0.7	6.5	2.2	-4.1	2.0	5.7
Bulgaria	1.8	-3.6	2.4	3.8	3.0	-6.0	5.4	3.4
Romania	-1.9	-7.5	-0.6	5.9	-0.4	-5.4	0.2	5.9
Estonia	1.9	-1.8	1.8	2.7	2.7	1.7	1.6	4.4
Latvia	2.3	0.5	1.2	5.8	3.4	-0.7	2.4	6.9
Lithuania	0.9	-4.2	5.9	-3.4	2.5	-6.4	0.0	8.2
NMS-5	0.7	-5.8	-0.1	7.3	2.3	-4.6	1.5	7.9
NMS-7	0.1	-6.4	0.0	6.6	1.7	-5.1	1.5	7.0
NMS-10	0.3	-6.2	0.2	5.5	1.8	-5.0	1.5	7.0
EU-15	2.0	-0.9	2.8	4.9	2.4	-0.6	3.1	5.0
EU-25	1.6	-1.6	2.1	5.0	2.3	-1.1	2.6	5.3
Men								
Austria	0.9	-0.4	0.6	3.0	3.1	4.4	4.1	-1.0
Czech Republic	1.0	-3.8	1.0	2.7	2.0	2.7	1.8	2.9
Hungary	0.3	-4.1	0.6	3.1	0.4	-3.1	0.8	1.0
Poland	0.9	-3.8	0.4	7.7	4.0	1.0	3.6	7.7
Slovenia	1.6	-1.3	1.3	5.4	1.7	-0.9	1.0	6.6
Slovak Republic	2.3	-2.1	2.1	5.3	3.9	0.7	3.6	6.3
Bulgaria	1.7	-4.4	3.5	2.8	3.3	-5.5	6.3	2.6
Romania	-1.0	-4.9	-0.4	3.3	0.7	-2.4	1.0	4.8
Estonia	1.9	3.0	1.3	3.1	3.8	6.0	2.8	5.1
Latvia	2.2	5.0	1.4	2.5	2.4	3.1	1.4	4.8
Lithuania	1.6	-1.3	5.7	-4.0	1.7	-5.5	1.2	6.3
NMS-5	1.0	-3.7	0.7	5.7	3.0	0.2	2.8	5.6
NMS-7	0.6	-4.2	0.7	5.0	2.5	-1.5	2.6	5.2
NMS-10	0.7	-3.8	0.8	4.2	2.5	-1.3	2.5	5.2
EU-15	0.9	-0.8	1.9	2.7	1.5	-0.3	2.4	2.9
EU-25	0.9	-1.1	1.6	2.9	1.7	-0.4	2.5	3.2

Source: EUROSTAT LFS, wiiw calculations.

Table A9

Employment by age groups, average annual growth rates

	2000-2007				2004-2007			
	Total	Low	Medium	High	Total	Low	Medium	High
Population aged 15-24								
Austria	2.0	3.0	1.8	-2.8	5.3	14.0	2.1	-13.0
Czech Republic	-5.2	-3.9	-5.3	-3.3	0.1	10.1	-0.2	-6.7
Hungary	-8.8	-7.4	-9.9	-1.6	-4.8	-5.6	-5.2	-0.2
Poland	0.8	-1.7	-0.2	22.0	4.8	1.6	4.3	14.3
Slovenia	0.9	2.5	0.6	2.5	0.8	1.2	0.7	4.1
Slovak Republic	-1.2	19.6	-1.9	6.7	0.1	-2.9	-0.3	4.9
Bulgaria	1.0	-4.9	2.8	0.5	1.9	-9.5	4.7	6.9
Romania	-6.0	-7.5	-5.7	4.4	-5.8	-7.7	-4.6	-5.8
Estonia	4.1	9.2	1.7	19.6	7.9	7.5	6.7	34.5
Latvia	4.2	3.5	3.4	11.3	9.2	1.5	11.6	14.8
Lithuania	0.2	-6.9	2.1	2.3	7.9	-3.8	12.6	5.8
NMS-5	-1.9	-2.5	-2.6	11.0	2.2	0.8	1.8	8.9
NMS-7	-2.8	-5.3	-2.9	8.8	0.1	-4.3	0.7	5.8
NMS-10	-2.4	-4.8	-2.6	8.3	0.8	-3.8	1.4	6.8
EU-15	0.6	-0.5	1.4	2.8	1.5	0.1	2.4	3.6
EU-25	0.0	-0.9	0.4	3.4	1.4	-0.3	2.2	4.0
Population aged 25-34								
Austria	-2.3	-5.4	-2.6	0.7	-0.4	-1.0	0.5	-2.8
Czech Republic	2.2	-2.0	1.8	5.8	1.7	0.0	1.0	6.5
Hungary	2.1	-2.7	1.2	8.3	0.9	-4.5	0.0	6.1
Poland	2.9	-1.6	-0.5	14.2	5.2	4.5	1.4	13.6
Slovenia	0.2	-9.2	-0.8	6.5	0.5	-9.3	-1.2	7.1
Slovak Republic	3.0	-0.4	1.8	9.4	4.1	-1.8	2.8	10.6
Bulgaria	1.0	-3.0	0.8	3.6	0.6	-4.0	1.6	0.7
Romania	-1.5	3.4	-4.5	9.3	-0.8	0.7	-4.0	10.9
Estonia	1.4	24.8	-0.3	1.8	4.0	27.2	-1.7	11.6
Latvia	1.1	15.1	-3.0	6.5	1.1	5.2	-3.0	8.3
Lithuania	0.0	11.5	-1.1	-0.4	-0.2	8.3	-4.0	3.1
NMS-5	2.6	-2.3	0.4	11.7	3.7	0.6	1.2	11.4
NMS-7	1.4	-0.1	-0.8	10.5	2.4	0.2	0.0	10.4
NMS-10	1.4	0.8	-0.9	9.4	2.3	0.8	-0.2	10.0
EU-15	-0.4	-3.6	-0.5	2.9	0.5	-2.9	0.6	3.0
EU-25	0.0	-3.2	-0.6	3.9	0.9	-2.5	0.4	4.1
Population aged 35-49								
Austria	2.1	-0.9	2.2	4.1	2.4	2.1	3.4	-0.4
Czech Republic	-0.4	-10.5	0.2	1.5	1.0	-7.5	1.1	3.2
Hungary	-0.8	-5.7	-0.2	0.8	-1.1	-5.3	-0.3	-1.3
Poland	-1.4	-8.1	-1.6	3.8	0.4	-6.5	0.2	4.9
Slovenia	0.3	-5.0	0.0	5.9	0.5	-6.0	-0.6	8.9
Slovak Republic	-0.3	-12.9	0.3	1.5	0.5	-14.2	1.5	0.0
Bulgaria	1.2	-5.2	2.6	2.0	4.3	-4.5	6.9	3.3
Romania	-0.4	-7.6	1.3	0.5	0.2	-5.9	1.6	-0.2
Estonia	0.8	-100.0	0.5	2.5	1.0		-0.7	3.7
Latvia	1.3	-2.4	0.9	2.8	0.6	2.6	-1.3	3.9
Lithuania	1.4	4.7	7.6	-6.2	1.5	-1.0	-1.1	8.6
NMS-5	-1.0	-7.9	-0.9	2.9	0.3	-6.7	0.4	3.4
NMS-7	-0.7	-7.5	-0.2	2.4	0.6	-6.2	1.1	2.8
NMS-10	-0.5	-7.4	0.1	1.6	0.7	-6.0	1.0	3.2
EU-15	1.7	-0.6	2.8	3.5	1.9	-0.5	2.6	3.9
EU-25	1.3	-1.2	2.0	3.3	1.7	-0.9	2.2	3.8

Table A9 contd.

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Table A9 (contd.)

	2000-2007				2004-2007			
	Total	Low	Medium	High	Total	Low	Medium	High
Population aged 50-64								
Austria	3.6	2.1	3.5	5.4	7.2	11.2	6.9	4.5
Czech Republic	3.4	0.4	3.6	4.3	2.9	2.5	2.9	3.2
Hungary	5.2	-1.9	7.9	5.2	3.4	-1.9	5.6	1.8
Poland	3.0	-4.5	5.3	4.1	8.4	-0.1	11.9	5.3
Slovenia	6.1	4.1	7.4	5.5	3.9	3.6	4.9	2.0
Slovak Republic	6.9	3.9	6.7	10.0	9.1	10.3	8.5	10.9
Bulgaria	4.1	-3.0	6.7	6.6	4.2	-7.0	9.5	5.3
Romania	-0.9	-8.6	8.0	4.5	4.4	-3.5	10.7	8.2
Estonia	3.3	-16.3	5.1	3.3	4.1	-30.6	10.0	-0.6
Latvia	4.2	-1.3	6.0	3.5	5.7	-4.8	8.5	5.3
Lithuania	2.7	-10.0	13.1	-4.0	3.8	-20.1	5.1	13.2
NMS-5	3.8	-2.7	5.4	4.8	6.2	0.6	8.1	4.5
NMS-7	2.6	-5.5	5.9	5.0	5.6	-1.9	8.6	5.2
NMS-10	2.7	-5.6	6.1	4.1	5.5	-2.6	8.5	5.4
EU-15	3.1	0.7	5.7	5.6	3.5	1.0	5.6	5.2
EU-25	3.0	-0.2	5.8	5.4	3.8	0.6	6.3	5.2

Source: EUROSTAT LFS, wiiw calculations.

Table A10

Average gross monthly wages by gender, age groups and educational attainment levels, total, in EUR and at PPP (EUR)

	Gross wages, in PPP		nominal growth		Gross wages, in EUR		nominal growth	
	2000	2007	00-07, in %	av. yearly gr.	2000	2007	00-07, in %	av. yearly gr.
Total population								
Austria					2390	2781	16.4	2.2
Czech Republic	833	1269	52.4	6.2	382	781	104.4	10.8
Hungary	706	1170	65.7	7.5	337	736	118.4	11.8
Poland	894	1193	33.4	4.2	472	711	50.7	6.0
Slovenia	1308	1735	32.7	4.1	935	1285	37.4	4.6
Slovak Republic	628	999	59.2	6.9	268	596	122.2	12.1
	Gross wages, in PPP		nominal growth		Gross wages, in EUR		nominal growth	
	2000	2007	00-07, in %	av. yearly gr.	2000	2007	00-07, in %	av. yearly gr.
Women								
Czech Republic	631	1003	58.9	6.8	290	618	113.2	11.4
Hungary	637	1091	71.5	8.0	304	687	126.0	12.4
Poland	786	1042	32.7	4.1	415	621	49.8	5.9
Slovenia	1223	1653	35.2	4.4	874	1224	40.0	4.9
Slovak Republic	524	829	58.1	6.8	224	495	120.7	12.0
Men								
Czech Republic	990	1473	48.7	5.8	455	907	99.5	10.4
Hungary	764	1237	62.0	7.1	364	778	113.5	11.4
Poland	984	1317	33.8	4.2	520	785	51.1	6.1
Slovenia	1380	1804	30.7	3.9	987	1336	35.4	4.4
Slovak Republic	715	1137	59.2	6.9	306	679	122.2	12.1
	Gross wages, in PPP		nominal growth		Gross wages, in EUR		nominal growth	
	2000	2007	00-07, in %	av. yearly gr.	2000	2007	00-07, in %	av. yearly gr.
Population aged 15-29								
Czech Republic	713	1091	53.1	6.3	327	672	105.3	10.8
Hungary	571	945	65.4	7.5	272	594	118.1	11.8
Poland	752	959	27.6	3.5	397	572	44.0	5.4
Slovenia								
Slovak Republic	522	875	67.5	7.7	223	522	133.9	12.9

Table A10 contd.

Table A10 (contd.)

	Gross wages, in PPP		nominal growth		Gross wages, in EUR		nominal growth	
	2000	2007	00-07, in %	av. yearly gr.	2000	2007	00-07, in %	av. yearly gr.
Population aged 30-49								
Czech Republic	863	1328	53.9	6.4	396	818	106.5	10.9
Hungary	721	1185	64.3	7.3	344	745	116.5	11.7
Poland	897	1181	31.7	4.0	473	704	48.8	5.8
Slovenia								
Slovak Republic	661	1044	58.0	6.8	283	623	120.6	12.0
Population aged 50-64								
Czech Republic	893	1300	45.6	5.5	410	800	95.3	10.0
Hungary	860	1354	57.5	6.7	410	852	107.6	11.0
Poland	1051	1490	41.8	5.1	555	888	60.2	7.0
Slovenia								
Slovak Republic	680	1032	51.8	6.1	291	616	111.9	11.3

	Gross wages, in PPP		nominal growth		Gross wages, in EUR		nominal growth	
	2000	2007	00-07, in %	av. yearly gr.	2000	2007	00-07, in %	av. yearly gr.
Low-educated employees								
Czech Republic	519	776	49.5	5.9	238	478	100.6	10.5
Hungary	458	733	60.0	6.9	219	461	111.0	11.3
Poland	641	796	24.3	3.2	338	475	40.4	5.0
Slovenia	833	1150	38.0	4.7	596	852	43.0	5.2
Slovak Republic	413	643	55.7	6.5	177	384	117.4	11.7
Medium-educated employees								
Czech Republic	751	1113	48.3	5.8	345	685	98.9	10.3
Hungary	613	948	54.6	6.4	293	596	103.8	10.7
Poland	841	1039	23.7	3.1	444	620	39.7	4.9
Slovenia	1189	1491	25.4	3.3	850	1104	29.9	3.8
Slovak Republic	572	887	55.0	6.5	245	529	116.5	11.7
Highly-educated employees								
Czech Republic	1578	2351	49.0	5.9	724	1447	99.8	10.4
Hungary	1314	2180	65.9	7.5	627	1371	118.7	11.8
Poland	1416	1938	36.9	4.6	747	1155	54.6	6.4
Slovenia	2427	2940	21.1	2.8	1735	2177	25.5	3.3
Slovak Republic	1114	1679	50.8	6.0	476	1003	110.5	11.2

Source: EUKLEMS database, wiiw Annual Database incorporating national statistics, wiiw calculations

ANNEX B - Regional labour market indicators

Table B1

Employment rate, population aged 25-64

nuts		Employment rate 2007, Population aged 25-64 years				Change in the employment rate 2000-2007				Change in the employment rate 2000-2004				Change in the employment rate 2004-2007			
		Total	by education			Total	by education			Total	by education			Total	by education		
			Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary
eu27	European Union	72.0	57.2	74.6	85.3	3.2	3.3	1.6	1.3	0.5	1.3	-0.9	-0.1	2.7	2.0	2.5	1.5
at	Austria	74.8	57.9	76.9	86.8	3.1	4.0	1.9	-0.7	-0.6	-1.7	-1.1	-5.0	3.7	5.6	3.0	4.3
at11	Burgenland (A)	75.9	57.9	79.2	90.0	4.5	7.3	-0.1	0.2	-0.6	-1.7	-2.4	-7.1	5.0	9.0	2.3	7.4
at12	Niederösterreich	76.3	59.8	78.4	87.7	4.0	5.8	2.7	-2.4	0.5	-2.1	0.5	-7.2	3.5	7.9	2.2	4.8
at13	Wien	70.9	55.1	71.0	84.5	-1.4	-6.5	-0.3	-2.1	-4.6	-10.2	-3.9	-5.9	3.2	3.6	3.7	3.8
at21	Kärnten	72.0	49.0	73.4	86.3	4.1	5.4	1.7	-0.9	0.8	3.2	-1.2	-4.9	3.3	2.3	2.9	4.1
at22	Steiermark	74.1	52.1	76.9	87.5	4.2	4.0	2.0	1.0	0.1	-1.1	-1.2	-4.7	4.1	5.1	3.2	5.7
at31	Oberösterreich	77.4	61.5	80.3	88.2	4.6	7.8	2.1	0.0	0.6	0.5	-0.6	-3.5	4.0	7.3	2.7	3.6
at32	Salzburg	77.6	62.5	79.4	85.7	3.0	4.9	1.5	0.5	-1.1	-0.4	-1.5	-4.6	4.1	5.3	3.0	5.1
at33	Tirol	76.3	62.5	78.5	87.3	5.6	9.3	3.7	1.5	1.7	3.5	-0.3	-1.1	3.8	5.8	4.0	2.6
at34	Vorarlberg	76.7	59.4	79.7	90.0	4.6	2.7	3.8	0.9	1.0	0.7	0.4	-2.9	3.6	2.0	3.4	3.8
nms10	New Member States (CEE)	68.6	45.9	70.1	85.0	2.2	-1.5	0.1	1.8	-1.5	-5.0	-2.5	0.2	3.7	3.4	2.6	1.7
cz	Czech Republic	74.5	45.7	76.1	85.2	1.8	-1.5	0.7	-1.3	-0.1	-4.9	-0.6	-0.1	1.8	3.4	1.3	-1.1
cz01	Praha	80.0	55.9	79.1	86.2	-1.2	-3.2	-0.9	-3.8	-1.9	-5.8	-2.4	-1.4	0.8	2.7	1.5	-2.4
cz02	Strední Cechy	76.0	50.9	77.6	85.5	3.1	-3.0	1.3	0.4	2.0	-10.4	1.4	5.2	1.1	7.4	-0.1	-4.8
cz03	Jihozápad	76.7	49.8	78.2	85.8	1.4	-2.2	0.3	0.3	-0.5	-6.6	-0.8	-0.2	1.9	4.5	1.0	0.4
cz04	Severozápad	69.7	40.6	74.1	83.7	1.4	-2.1	1.1	-3.6	1.3	0.2	0.9	-1.2	0.1	-2.3	0.2	-2.4
cz05	Severovýchod	74.8	45.4	77.1	82.8	0.9	-6.3	0.6	-1.0	-0.4	-6.4	-0.9	2.4	1.3	0.1	1.6	-3.4
cz06	Jihovýchod	74.5	46.3	75.7	84.7	1.5	1.6	0.0	-1.7	-0.3	-1.9	-1.0	-1.6	1.8	3.5	1.0	-0.1
cz07	Strední Morava	74.1	47.2	75.6	86.7	3.0	3.3	0.9	0.1	-0.4	-4.9	-1.1	-2.7	3.3	8.2	1.9	2.8
cz08	Moravskoslezsko	69.9	38.7	71.8	85.2	3.6	1.4	2.3	2.8	-0.1	-4.3	-0.7	1.3	3.7	5.7	2.9	1.6
hu	Hungary	65.5	38.5	70.2	80.4	2.8	2.3	-2.0	-2.1	1.9	0.7	-1.3	0.4	0.9	1.6	-0.7	-2.5
hu10	Közép-Magyarország	70.8	44.2	72.7	80.0	3.4	5.6	-0.5	-3.4	3.3	4.7	-0.3	0.3	0.1	0.9	-0.2	-3.8
hu21	Közép-Dunántúl	70.1	49.7	74.0	82.4	4.1	7.9	-0.9	-2.3	2.3	2.3	0.6	-2.2	1.9	5.6	-1.5	-0.1
hu22	Nyugat-Dunántúl	71.7	48.4	76.2	83.4	1.2	1.4	-2.5	-3.8	-1.1	-2.5	-2.5	-5.5	2.4	3.9	0.0	1.7
hu23	Dél-Dunántúl	58.8	34.1	65.6	81.0	-0.5	1.1	-5.2	0.4	0.5	-1.3	-3.0	1.5	-0.9	2.4	-2.2	-1.1
hu31	Észak-Magyarország	58.7	28.2	66.1	80.1	3.7	-1.1	-0.8	2.3	3.1	-1.0	0.4	3.8	0.6	-0.1	-1.2	-1.5
hu32	Észak-Alföld	58.7	31.4	65.9	79.0	4.2	2.1	-0.8	-2.2	3.8	1.9	0.7	1.1	0.4	0.2	-1.6	-3.3
hu33	Dél-Alföld	63.4	38.8	68.3	79.9	1.1	0.4	-5.8	0.3	-1.3	-1.9	-6.1	2.8	2.4	2.3	0.2	-2.5

Table B1 contd.

Table B1 (contd.)

		Employment rate 2007, Population aged 25-64 years				Change in the employment rate 2000-2007				Change in the employment rate 2000-2004				Change in the employment rate 2004-2007			
		Total	by education			Total	by education			Total	by education			Total	by education		
nuts			Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary
pl	Poland	65.5	41.0	65.2	84.5	1.6	-1.8	-1.4	-0.1	-3.3	-5.9	-5.4	-2.0	5.0	4.1	4.0	2.0
pl11	Lódzkie	66.6	42.4	67.1	86.6	1.4	-3.1	-0.6	2.3	-4.4	-8.3	-5.0	-1.5	5.8	5.3	4.4	3.8
pl12	Mazowieckie	69.9	46.8	67.9	84.1	0.0	-5.3	-3.4	-1.8	-3.6	-9.9	-5.6	-1.5	3.7	4.6	2.2	-0.3
pl21	Malopolskie	68.2	45.1	67.4	85.1	0.4	-4.1	-1.5	-1.3	-2.9	-4.0	-4.3	-2.6	3.4	-0.2	2.8	1.3
pl22	Slaskie	61.1	28.6	60.4	83.8	5.4	2.1	0.5	4.1	0.4	0.4	-3.6	1.4	5.0	1.8	4.1	2.7
pl31	Lubelskie	69.6	52.1	70.0	83.0	1.4	-3.7	0.1	-0.6	-3.9	-7.3	-5.6	-1.2	5.2	3.6	5.7	0.6
pl32	Podkarpackie	67.0	49.6	66.3	84.9	1.7	3.4	-1.7	2.3	-2.6	-0.9	-5.2	1.5	4.4	4.3	3.5	0.8
pl33	Swietokrzyskie	67.9	53.6	67.9	82.4	3.1	1.9	1.3	-1.5	-6.0	-8.8	-8.1	-6.7	9.1	10.6	9.4	5.2
pl34	Podlaskie	69.4	50.3	70.4	85.3	0.3	-7.6	-0.5	1.5	-2.9	-3.9	-4.6	-0.4	3.2	-3.8	4.0	1.8
pl41	Wielkopolskie	66.5	40.5	67.0	84.0	0.8	-2.7	-1.7	-3.2	-3.6	-8.8	-4.9	-3.5	4.4	6.1	3.2	0.3
pl42	Zachodniopomorskie	59.7	31.3	59.1	84.6	-1.3	-5.1	-5.7	0.9	-4.8	-4.7	-6.8	-5.3	3.5	-0.4	1.1	6.2
pl43	Lubuskie	64.4	39.0	64.0	89.2	6.6	8.3	2.7	4.0	-1.7	-1.9	-4.6	-1.8	8.3	10.1	7.3	5.9
pl51	Dolnoslaskie	62.2	31.3	61.8	83.5	1.7	-3.3	-2.0	-1.9	-5.3	-9.0	-7.8	-3.9	6.9	5.7	5.8	2.0
pl52	Opolskie	63.4	33.3	64.8	84.2	0.6	-5.9	-1.8	-0.2	-2.7	-6.2	-4.4	-2.7	3.3	0.3	2.7	2.4
pl61	Kujawsko-Pomorskie	61.4	37.6	63.6	82.0	-0.4	-0.1	-2.9	-0.1	-2.7	-6.3	-4.6	3.0	2.2	6.1	1.7	-3.1
pl62	Warminsko-Mazurskie	63.5	37.3	65.7	86.4	6.2	1.3	3.1	1.9	-0.2	0.5	-2.7	-6.1	6.5	0.8	5.8	8.0
pl63	Pomorskie	64.4	36.2	64.2	86.1	1.4	-1.0	-1.2	0.7	-5.0	-4.7	-7.2	-3.1	6.4	3.6	6.0	3.8
si	Slovenia	74.4	56.2	75.1	87.7	3.6	2.2	1.3	1.7	2.2	1.9	0.6	0.8	1.5	0.3	0.7	0.9
sk	Slovakia	70.0	29.1	73.2	84.2	4.2	-1.8	2.6	-1.7	0.5	-4.3	-0.3	-2.4	3.7	2.5	2.9	0.7
sk01	Bratislavský kraj	80.0	53.1	80.8	85.8	-0.8	4.2	-1.3	-3.3	-3.5	4.5	-5.5	-3.2	2.7	-0.3	4.2	-0.1
sk02	Západné Slovensko	72.6	36.4	75.3	85.5	7.4	2.7	4.9	0.8	3.8	-1.6	3.1	-1.0	3.7	4.3	1.8	1.8
sk03	Stredné Slovensko	66.4	28.1	70.3	81.5	2.7	-2.1	1.5	-2.6	-0.8	-3.5	-2.9	-0.4	3.5	1.5	4.4	-2.2
sk04	Východné Slovensko	65.6	13.9	70.3	83.4	3.8	-9.4	2.2	-1.6	-0.5	-9.5	-0.4	-4.4	4.3	0.2	2.6	2.8
bg	Bulgaria	70.8	44.5	75.7	85.1	12.3	8.8	9.5	7.3	4.0	3.5	1.9	1.6	8.4	5.2	7.6	5.7
bg31	Severozapaden	65.5	33.8	70.2	84.3	.	.	.	.	.	.	.	.	10.2	4.9	8.6	8.7
bg32	Severen tsentralen	65.4	34.2	72.8	83.8	.	.	.	.	.	.	.	.	5.6	-1.0	5.8	3.9
bg33	Severoiztochen	68.6	45.4	75.7	84.9	.	.	.	.	.	.	.	.	9.9	5.4	10.7	9.3
bg34	Yugoiztochen	68.6	46.9	75.5	82.8	.	.	.	.	.	.	.	.	6.5	5.6	6.4	2.5
bg41	Yugozapaden	77.8	51.8	78.7	86.1	.	.	.	.	.	.	.	.	8.8	8.5	8.5	4.9
bg42	Yuzhen tsentralen	70.2	47.4	77.3	85.3	.	.	.	.	.	.	.	.	8.2	5.7	5.4	6.0
ee	Estonia	79.6	56.7	79.4	87.4	10.3	13.6	9.2	7.2	4.0	7.9	2.4	2.2	6.4	5.8	6.8	5.0
lt	Lithuania	76.8	49.1	75.8	89.4	8.3	12.4	7.1	9.0	4.5	11.8	4.6	5.2	3.7	0.6	2.5	3.9
lv	Latvia	77.2	59.7	77.7	87.3	12.5	19.2	10.9	7.6	6.8	9.5	5.9	4.6	5.7	9.8	5.1	3.0
ro	Romania	68.1	53.8	70.1	86.9	-3.9	-11.6	-3.1	1.9	-5.8	-14.0	-3.5	0.5	1.9	2.4	0.3	1.4

Table B1 contd.

Table B1 (contd.)

nuts		Employment rate 2007, Population aged 25-64 years				Change in the employment rate 2000-2007				Change in the employment rate 2000-2004				Change in the employment rate 2004-2007			
		Total	by education			Total	by education			Total	by education			Total	by education		
			Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary
ro11	Nord-Vest	66.1	48.6	69.7	86.0	-4.6	-14.9	-3.1	2.3	-6.7	-18.5	-2.7	1.3	2.1	3.6	-0.3	0.9
ro12	Centru	64.1	40.8	68.5	85.5	-4.6	-11.4	-5.1	0.2	-6.8	-15.4	-5.2	3.2	2.2	4.0	0.1	-2.9
ro21	Nord-Est	71.8	70.6	69.9	86.9	-3.0	-3.8	-4.0	2.0	-3.0	-5.2	-2.8	1.0	0.0	1.3	-1.2	1.0
ro22	Sud-Est	63.2	49.5	67.2	82.3	-5.9	-13.5	-3.0	-3.6	-6.8	-15.9	-2.5	-3.2	0.8	2.3	-0.5	-0.4
ro31	Sud - Muntenia	68.9	53.8	73.0	87.1	-4.4	-12.5	-2.6	-0.7	-6.8	-13.0	-4.7	-2.9	2.5	0.5	2.1	2.2
ro32	Bucuresti - Ilfov	71.7	42.7	70.2	89.8	1.9	-4.6	-0.9	5.0	-1.4	-9.1	-0.8	0.1	3.3	4.5	0.0	4.9
ro41	Sud-Vest Oltenia	69.5	62.6	69.6	84.4	-8.9	-16.8	-7.6	0.5	-9.5	-18.3	-7.2	1.5	0.6	1.5	-0.3	-1.0
ro42	Vest	68.7	47.5	73.0	89.0	-0.9	-14.7	2.1	5.5	-5.5	-17.2	-1.6	3.8	4.5	2.5	3.7	1.7

Source: LFS

Table B2

Unemployment rate, population aged 25-64

		Unemployment rate 2007, Population aged 25-64 years				Change in the unemployment rate 2000-2007				Change in the unemployment rate 2000-2004				Change in the unemployment rate 2004-2007			
		Total	by education			Total	by education			Total	by education			Total	by education		
			Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary
eu27	**European Union**	**6.1**	**9.2**	**6.0**	**3.6**	**-1.8**	**-1.9**	**-1.9**	**-0.9**	**0.0**	**-0.5**	**0.5**	**0.2**	**-1.9**	**-1.3**	**-2.3**	**-1.1**
at	**Austria**	**3.8**	**7.4**	**3.3**	**2.4**	**0.4**	**1.1**	**0.3**	**0.8**	**0.9**	**1.5**	**0.8**	**1.4**	**-0.4**	**-0.4**	**-0.5**	**-0.6**
at11	Burgenland (A)	3.0	5.2	2.9	1.0	-0.2	-1.5	0.4	0.4	1.2	-0.9	1.5	4.2	-1.4	-0.6	-1.0	-3.8
at12	Niederösterreich	3.0	5.8	2.8	1.1	0.0	0.6	0.2	-0.4	0.6	0.9	0.7	1.0	-0.6	-0.3	-0.5	-1.3
at13	Wien	7.4	15.0	6.6	4.2	1.8	4.6	1.4	1.5	2.3	6.0	2.2	1.4	-0.5	-1.4	-0.8	0.0
at21	Kärnten	3.3	7.7	3.1	1.6	0.4	-0.7	0.9	0.6	1.1	-1.4	1.4	2.4	-0.7	0.8	-0.5	-1.8
at22	Steiermark	3.0	6.1	2.6	2.3	0.3	1.5	0.1	0.8	0.4	1.7	0.3	0.8	-0.1	-0.2	-0.2	0.0
at31	Oberösterreich	2.7	4.5	2.4	1.6	-0.1	-0.4	-0.2	0.8	0.1	0.2	-0.1	1.2	-0.2	-0.6	-0.1	-0.4
at32	Salzburg	2.6	5.0	2.2	2.5	0.6	1.0	0.4	1.5	1.2	0.5	1.0	2.6	-0.6	0.6	-0.6	-1.1
at33	Tirol	2.2	3.6	1.9	1.6	-0.1	-1.2	-0.1	1.1	0.2	-1.2	0.4	1.7	-0.4	0.1	-0.5	-0.7
at34	Vorarlberg	2.7	5.6	2.4	1.0	0.7	1.5	0.9	-0.2	1.4	1.9	1.7	-0.2	-0.7	-0.4	-0.9	-0.1
nms10	**New Member States (CEE)**	**6.6**	**13.1**	**6.6**	**2.9**	**-3.9**	**-1.4**	**-4.3**	**-1.6**	**0.5**	**3.3**	**0.5**	**-0.1**	**-4.4**	**-4.7**	**-4.8**	**-1.5**
cz	**Czech Republic**	**4.9**	**19.1**	**4.3**	**1.6**	**-2.6**	**-0.2**	**-2.4**	**-0.9**	**-0.4**	**3.7**	**-0.4**	**-0.5**	**-2.2**	**-3.9**	**-2.1**	**-0.4**
cz01	Praha	2.2	9.3	2.2	1.3	-1.3	0.6	-1.6	-0.5	-0.1	3.4	-0.1	-0.5	-1.2	-2.8	-1.6	0.0
cz02	Strední Cechy	3.0	11.4	2.6	0.8	-3.7	-4.2	-2.9	-0.9	-1.9	-0.4	-1.1	-1.0	-1.8	-3.8	-1.8	0.1
cz03	Jihozápad	3.3	11.7	2.9	1.3	-1.9	-2.3	-1.6	0.1	0.0	3.4	0.0	0.2	-1.8	-5.7	-1.6	-0.1
cz04	Severozápad	8.5	29.5	6.2	1.0	-3.6	2.8	-4.3	-1.2	-0.7	5.8	-1.8	-0.9	-2.9	-2.9	-2.5	-0.3
cz05	Severovýchod	4.4	17.4	3.7	1.6	-1.5	4.5	-1.6	-1.3	-0.4	4.2	-0.3	-1.8	-1.1	0.3	-1.3	0.5
cz06	Jihovýchod	4.7	16.3	4.3	2.2	-2.0	-1.3	-1.8	-0.3	-0.2	1.2	-0.2	0.7	-1.8	-2.5	-1.6	-1.0
cz07	Strední Morava	5.8	17.6	5.4	2.0	-3.0	-3.9	-2.4	-1.1	-0.8	1.1	-0.5	0.1	-2.2	-5.0	-2.0	-1.3
cz08	Moravskoslezsko	7.9	28.0	7.1	1.4	-4.1	-3.9	-3.4	-3.2	0.5	4.7	0.9	-1.1	-4.7	-8.5	-4.4	-2.0
hu	**Hungary**	**6.5**	**16.0**	**5.9**	**2.6**	**1.1**	**6.1**	**0.5**	**1.3**	**-0.3**	**0.9**	**-0.4**	**0.6**	**1.3**	**5.2**	**0.9**	**0.7**
hu10	Közép-Magyarország	4.4	12.0	4.5	1.9	0.0	3.1	-0.2	0.7	-0.6	-0.8	-0.8	0.7	0.6	3.9	0.5	0.0
hu21	Közép-Dunántúl	4.5	8.5	4.1	2.3	0.2	1.7	-0.1	1.0	0.6	2.1	0.2	1.0	-0.4	-0.4	-0.3	0.0
hu22	Nyugat-Dunántúl	4.4	8.7	3.8	3.5	0.9	1.9	0.8	2.5	0.6	2.4	0.4	0.9	0.3	-0.5	0.4	1.5
hu23	Dél-Dunántúl	9.0	19.6	7.5	2.9	2.2	6.4	1.5	1.8	-0.6	1.4	-0.4	-0.5	2.8	5.0	1.9	2.4
hu31	Észak-Magyarország	10.8	26.1	9.5	3.1	2.3	11.2	1.4	1.9	0.0	2.8	-0.1	0.4	2.3	8.3	1.4	1.4
hu32	Észak-Alföld	9.3	23.3	7.2	3.8	1.4	10.6	-0.6	2.6	-1.9	-0.5	-2.5	1.0	3.3	11.1	1.9	1.6
hu33	Dél-Alföld	7.0	14.7	6.4	2.8	2.4	7.3	2.2	1.1	0.8	1.2	1.1	0.3	1.6	6.1	1.1	0.8

Table B2 (contd.)

		Unemployment rate 2007, Population aged 25-64 years				Change in the unemployment rate 2000-2007				Change in the unemployment rate 2000-2004				Change in the unemployment rate 2004-2007			
		Total	by education			Total	by education			Total	by education			Total	by education		
			Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary
pl	**Poland**	**8.2**	**15.5**	**8.7**	**3.8**	**-5.4**	**-5.2**	**-5.2**	**-0.5**	**2.7**	**6.8**	**3.3**	**1.7**	**-8.1**	**-12.0**	**-8.5**	**-2.2**
pl11	Lódzkie	8.4	14.5	8.9	4.0	-5.5	-3.9	-6.1	0.5	2.9	11.8	1.6	3.4	-8.4	-15.7	-7.8	-2.9
pl12	Mazowieckie	7.6	15.8	8.4	3.9	-3.3	-0.2	-3.1	-0.2	1.9	9.7	2.2	0.6	-5.2	-10.0	-5.3	-0.8
pl21	Malopolskie	6.5	11.1	6.8	4.1	-2.7	-1.9	-3.0	0.4	5.0	5.8	6.0	2.4	-7.7	-7.7	-9.0	-2.1
pl22	Slaskie	7.0	21.9	6.9	3.3	-8.0	-9.4	-7.1	-2.9	1.0	-2.7	3.4	-0.6	-9.0	-6.7	-10.5	-2.2
pl31	Lubelskie	7.9	10.7	8.4	4.8	-3.8	0.0	-4.7	-1.3	2.9	6.4	2.8	1.9	-6.7	-6.4	-7.5	-3.3
pl32	Podkarpackie	8.2	9.9	8.9	4.7	-5.1	-6.6	-5.0	-1.0	0.9	0.5	1.6	0.8	-6.0	-7.1	-6.6	-1.8
pl33	Swietokrzyskie	10.4	11.8	11.0	7.2	-2.6	-1.2	-3.5	3.1	5.5	5.7	6.4	5.1	-8.1	-6.8	-9.9	-2.0
pl34	Podlaskie	7.8	9.8	9.3	2.4	-5.8	-3.6	-5.9	-3.6	-0.3	1.2	0.0	-0.9	-5.5	-4.8	-5.9	-2.7
pl41	Wielkopolskie	6.8	12.4	7.3	2.6	-4.3	-3.8	-4.0	-1.2	3.8	14.5	3.5	1.5	-8.1	-18.3	-7.5	-2.7
pl42	Zachodniopomorskie	10.3	24.7	10.7	3.9	-6.0	-4.5	-5.4	0.4	4.4	5.1	5.4	4.7	-10.3	-9.5	-10.8	-4.3
pl43	Lubuskie	8.3	19.3	8.7	1.6	-9.7	-9.1	-10.0	-3.2	1.8	9.1	2.4	-0.6	-11.5	-18.2	-12.4	-2.6
pl51	Dolnoslaskie	11.5	25.3	12.4	4.2	-7.1	-9.7	-5.8	1.6	3.1	9.9	4.2	3.8	-10.2	-19.6	-10.0	-2.2
pl52	Opolskie	8.3	18.9	8.5	3.2	-5.2	-3.2	-4.7	-2.3	1.9	1.8	3.1	0.6	-7.1	-5.0	-7.8	-2.8
pl61	Kujawsko-Pomorskie	9.8	16.7	10.0	3.6	-5.0	-7.5	-4.4	-1.8	4.1	12.2	4.1	0.9	-9.1	-19.7	-8.5	-2.7
pl62	Warminsko-Mazurskie	9.1	21.0	8.3	3.8	-11.6	-13.2	-11.1	0.5	-1.1	-1.8	0.0	2.9	-10.5	-11.4	-11.0	-2.5
pl63	Pomorskie	8.0	13.0	8.9	3.4	-6.0	-13.6	-5.2	0.1	3.5	4.5	4.7	1.6	-9.5	-18.1	-9.9	-1.5
si	**Slovenia**	**4.3**	**6.5**	**4.3**	**3.2**	**-1.2**	**-2.9**	**-1.1**	**1.1**	**-0.4**	**-1.0**	**-0.1**	**0.7**	**-0.9**	**-1.9**	**-0.9**	**0.4**
sk	**Slovakia**	**10.0**	**41.5**	**8.6**	**3.4**	**-5.3**	**5.3**	**-5.7**	**-1.1**	**0.7**	**11.6**	**0.4**	**0.4**	**-6.0**	**-6.3**	**-6.1**	**-1.4**
sk01	Bratislavský kraj	4.0	16.2	3.5	2.6	-1.6	-4.4	-2.1	0.8	1.2	-6.2	2.3	0.9	-2.7	1.8	-4.4	0.0
sk02	Západné Slovensko	7.2	23.1	6.8	2.6	-7.5	-7.2	-6.8	-2.9	-2.0	3.0	-1.7	-1.7	-5.5	-10.1	-5.1	-1.3
sk03	Stredné Slovensko	14.1	48.5	11.8	4.8	-2.9	10.9	-4.0	-0.5	2.7	12.4	2.8	0.6	-5.6	-1.5	-6.8	-1.0
sk04	Východné Slovensko	12.9	67.8	10.1	3.9	-6.4	19.5	-7.1	-2.2	1.9	24.0	0.2	0.9	-8.3	-4.5	-7.3	-3.1
bg	**Bulgaria**	**6.2**	**16.8**	**5.0**	**2.2**	**-8.7**	**-8.6**	**-8.8**	**-4.5**	**-4.1**	**-5.1**	**-3.9**	**-1.5**	**-4.6**	**-3.5**	**-5.0**	**-3.0**
bg31	Severozapaden	7.9	22.5	6.9	2.8	.	.	.	.	.	.	.	.	-3.7	0.8	-4.5	-2.8
bg32	Severen tsentralen	9.7	30.5	6.9	2.0	.	.	.	.	.	.	.	.	-2.7	5.7	-3.7	-4.3
bg33	Severoiztochen	9.5	23.9	6.3	2.6	.	.	.	.	.	.	.	.	-6.6	-2.6	-8.5	-4.8
bg34	Yugoiztochen	5.9	12.7	4.4	2.9	.	.	.	.	.	.	.	.	-4.7	-7.2	-4.5	-1.7
bg41	Yugozapaden	3.6	8.5	4.0	1.9	.	.	.	.	.	.	.	.	-4.6	-7.3	-4.9	-3.0
bg42	Yuzhen tsentralen	4.9	11.3	3.6	2.4	.	.	.	.	.	.	.	.	-4.7	-5.7	-4.2	-1.8
ee	**Estonia**	**4.1**	**8.6**	**4.6**	**2.3**	**-8.5**	**-13.3**	**-9.5**	**-4.6**	**-4.1**	**-6.5**	**-4.5**	**-2.0**	**-4.3**	**-6.8**	**-4.9**	**-2.6**
lt	**Lithuania**	**4.0**	**6.9**	**4.8**	**1.8**	**-10.7**	**-14.1**	**-14.6**	**-7.0**	**-4.3**	**-6.2**	**-7.7**	**-2.7**	**-6.5**	**-7.9**	**-6.9**	**-4.3**
lv	**Latvia**	**5.4**	**8.8**	**5.4**	**3.7**	**-8.1**	**-10.2**	**-9.0**	**-3.8**	**-4.0**	**-4.0**	**-4.1**	**-3.2**	**-4.1**	**-6.2**	**-4.9**	**-0.6**
ro	**Romania**	**5.2**	**6.6**	**5.5**	**2.2**	**-0.7**	**2.6**	**-1.8**	**-0.9**	**0.6**	**3.2**	**-0.2**	**-0.3**	**-1.3**	**-0.6**	**-1.6**	**-0.6**

Table B2 contd.

Table B2 (contd.)

		Unemployment rate 2007, Population aged 25-64 years				Change in the unemployment rate 2000-2007				Change in the unemployment rate 2000-2004				Change in the unemployment rate 2004-2007			
		Total	by education			Total	by education			Total	by education			Total	by education		
			Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary		Primary	Secondary	Tertiary
ro11	Nord-Vest	3.4	5.0	3.2	1.9	-3.2	0.0	-4.7	-0.8	-1.5	2.1	-3.2	0.5	-1.7	-2.0	-1.5	-1.3
ro12	Centru	6.8	12.5	6.5	2.4	0.8	6.2	0.3	-2.1	1.5	7.9	0.7	-2.3	-0.7	-1.7	-0.4	0.3
ro21	Nord-Est	4.3	2.7	5.4	1.9	-1.6	-0.7	-1.9	-3.4	-1.0	-0.4	-1.3	-2.3	-0.6	-0.3	-0.7	-1.1
ro22	Sud-Est	6.7	7.8	6.8	3.9	-0.4	2.9	-2.0	0.2	1.2	4.4	-0.1	-0.5	-1.6	-1.5	-1.9	0.7
ro31	Sud - Muntenia	6.7	8.3	6.7	3.4	1.0	5.0	-0.7	1.7	2.0	3.8	1.2	1.4	-1.0	1.2	-1.9	0.3
ro32	Bucuresti - Ilfov	3.2	10.5	3.3	0.9	-2.1	4.4	-3.0	-1.1	0.6	6.3	0.2	0.4	-2.7	-1.9	-3.2	-1.5
ro41	Sud-Vest Oltenia	5.9	5.6	6.6	3.5	0.9	3.1	-0.2	1.2	1.5	2.3	1.0	1.1	-0.6	0.8	-1.3	0.1
ro42	Vest	4.5	7.3	4.4	1.6	-0.9	3.9	-2.4	-1.6	1.2	6.2	-0.1	-1.3	-2.1	-2.3	-2.3	-0.3

Source: LFS

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Table B3

Wages by sectors, 2004

		in per cent of the Austrian average					in per cent of the national average					annual average wage growth 2000-2004* (nominal)				
		Industry	Construction	Market services	Business Services	Total	Industry	Construction	Market services	Business Services	Total	Industry	Construction	Market services	Business Services	Total
at	**Austria**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**2.9**	**2.7**	**1.5**	**0.8**	**1.2**
at11	Burgenland	82.7	90.3	85.9	98.9	**89.1**	82.7	90.3	85.9	98.9	**94.4**	3.6	3.4	1.7	0.4	**2.1**
at12	Niederösterreich	98.9	93.9	99.8	90.5	**94.7**	98.9	93.9	99.8	90.5	**90.9**	3.6	2.4	2.3	0.2	**1.5**
at13	Wien	121.2	109.0	116.5	110.8	**112.7**	121.2	109.0	116.5	110.8	**110.5**	2.3	2.7	0.7	1.5	**0.6**
at21	Kärnten	95.9	101.7	90.0	92.4	**96.5**	95.9	101.7	90.0	92.4	**101.3**	3.3	7.1	0.2	0.2	**2.0**
at22	Steiermark	96.8	95.7	88.6	89.6	**94.6**	96.8	95.7	88.6	89.6	**95.8**	2.9	1.7	2.4	0.4	**1.4**
at31	Oberösterreich	98.3	104.1	93.0	95.4	**98.5**	98.3	104.1	93.0	95.4	**96.7**	2.9	2.8	1.6	0.4	**1.0**
at32	Salzburg	96.3	99.3	102.7	91.9	**96.3**	96.3	99.3	102.7	91.9	**95.8**	3.1	2.3	2.4	0.0	**0.8**
at33	Tirol	94.5	95.6	95.6	95.2	**94.1**	94.5	95.6	95.6	95.2	**96.5**	3.2	2.4	2.4	0.7	**1.7**
at34	Vorarlberg	99.3	98.5	94.8	95.9	**99.9**	99.3	98.5	94.8	95.9	**102.1**	3.6	1.5	1.0	1.6	**1.7**
cz	**Czech Republic**	**22.3**	**24.7**	**30.6**	**33.7**	**26.9**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**10.1**	**9.1**	**10.0**	**9.7**	**11.8**
cz01	Praha	36.5	29.9	46.3	46.8	**40.1**	163.9	121.1	151.4	138.8	**131.2**	14.5	11.4	9.2	9.0	**13.0**
cz02	Strední Cechy	24.5	21.8	26.6	22.0	**25.1**	110.0	88.3	87.0	65.3	**92.0**	10.9	10.5	7.3	11.1	**10.9**
cz03	Jihozápad	20.6	26.4	27.2	27.7	**24.8**	92.7	106.8	89.0	82.3	**93.6**	8.7	8.2	13.9	12.4	**9.7**
cz04	Severozápad	22.0	21.3	21.0	20.3	**22.6**	98.9	86.2	68.5	60.3	**89.5**	8.6	8.0	6.8	9.3	**9.1**
cz05	Severovýchod	20.4	22.1	27.6	27.8	**24.0**	91.8	89.4	90.4	82.4	**89.5**	8.8	6.8	12.2	11.4	**11.5**
cz06	Jihovýchod	21.6	23.8	28.5	25.4	**25.0**	97.0	96.6	93.0	75.5	**98.2**	12.6	7.8	10.6	8.8	**14.2**
cz07	Strední Morava	20.0	26.8	23.6	28.7	**23.3**	89.8	108.4	77.2	85.1	**91.0**	10.5	11.6	8.3	9.2	**11.3**
cz08	Moravskoslezsko	22.0	23.2	27.6	28.5	**25.2**	98.8	94.0	90.2	84.7	**96.0**	8.0	8.5	14.0	6.1	**11.0**
hu	**Hungary**	**24.3**	**20.9**	**36.7**	**56.6**	**32.1**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**9.5**	**9.8**	**13.3**	**15.0**	**16.4**
hu10	Közép-Magyarország	34.1	26.3	48.6	66.2	**43.7**	140.7	125.6	132.6	116.9	**125.4**	10.0	11.2	11.2	13.6	**15.4**
hu21	Közép-Dunántúl	26.8	17.7	29.9	47.1	**29.4**	110.3	84.5	81.4	83.2	**91.8**	9.0	13.4	15.2	6.3	**18.4**
hu22	Nyugat-Dunántúl	22.9	18.5	30.6	67.5	**28.5**	94.3	88.5	83.5	119.2	**89.8**	9.6	5.6	13.2	29.7	**17.9**
hu23	Dél-Dunántúl	19.3	18.8	30.3	42.4	**26.1**	79.6	89.8	82.7	74.9	**86.6**	9.2	9.5	17.1	17.6	**15.8**
hu31	Észak-Magyarország	21.2	21.9	25.7	33.8	**25.8**	87.2	104.8	70.1	59.6	**89.8**	8.4	10.7	13.1	17.0	**18.2**
hu32	Észak-Alföld	17.2	16.1	29.7	34.5	**24.2**	71.0	76.9	81.0	61.0	**82.7**	9.2	4.7	15.5	14.8	**15.9**
hu33	Dél-Alföld	18.9	16.8	26.5	41.1	**24.7**	78.1	80.5	72.3	72.6	**84.8**	9.0	12.9	17.1	18.3	**15.9**
pl	**Poland**	**19.3**	**23.2**	**26.1**	**25.7**	**25.1**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**-3.3**	**2.0**	**6.0**	**2.5**	**2.4**
pl11	Lódzkie	17.4	22.2	22.7	20.9	**23.2**	90.1	95.6	86.8	81.2	**96.3**	-3.5	5.5	6.4	2.6	**1.9**
pl12	Mazowieckie	21.0	25.0	36.7	37.1	**31.4**	108.9	107.9	140.5	144.3	**114.1**	-4.3	1.5	5.4	1.7	**1.4**
pl21	Malopolskie	18.0	19.1	23.9	25.1	**23.5**	93.1	82.5	91.4	97.7	**98.3**	-4.1	-1.0	5.5	4.2	**3.3**
pl22	Slaskie	23.8	23.2	24.0	21.7	**24.8**	123.2	100.0	91.9	84.2	**94.0**	-1.9	1.8	5.8	-0.5	**2.4**
pl31	Lubelskie	16.9	24.6	23.2	22.1	**24.3**	87.8	106.1	88.8	85.9	**95.9**	-3.6	5.0	5.3	4.1	**3.4**
pl32	Podkarpackie	17.5	21.6	21.6	18.9	**22.2**	90.6	93.0	82.6	73.6	**94.1**	-3.3	0.3	6.2	2.4	**2.1**
pl33	Swietokrzyskie	18.6	26.4	21.9	19.3	**23.7**	96.6	113.9	84.0	75.1	**92.6**	-3.0	4.2	6.8	3.5	**1.5**
pl34	Podlaskie	16.4	26.1	22.6	20.8	**25.3**	85.2	112.4	86.4	80.9	**100.0**	-3.6	8.9	3.6	4.8	**3.4**
pl41	Wielkopolskie	16.9	21.8	24.1	21.0	**23.3**	87.7	94.2	92.2	81.7	**99.1**	-4.5	-1.4	4.9	0.4	**2.8**
pl42	Zachodniopomorskie	17.9	23.2	23.7	22.0	**23.6**	92.9	99.8	90.8	85.5	**102.0**	-3.5	5.6	7.2	7.0	**3.4**
pl43	Lubuskie	17.8	25.8	23.1	18.6	**22.9**	92.1	111.4	88.6	72.2	**95.2**	-2.6	5.4	5.9	2.9	**2.0**
pl51	Dolnoslaskie	21.5	24.7	24.3	23.1	**24.8**	111.4	106.4	93.0	89.9	**99.2**	-2.2	3.8	6.8	2.7	**3.2**
pl52	Opolskie	18.4	19.2	22.5	19.2	**22.9**	95.6	82.6	86.1	74.5	**96.5**	-3.4	-2.9	2.7	3.5	**2.1**
pl61	Kujawsko-Pomorskie	17.2	24.6	23.8	20.2	**23.6**	89.1	105.8	91.2	78.6	**96.3**	-3.3	3.3	7.0	2.4	**2.1**
pl62	Warminsko-Mazurskie	16.3	21.0	22.4	18.4	**23.3**	84.7	90.7	85.9	71.5	**98.6**	-4.6	2.6	6.1	4.8	**2.6**
pl63	Pomorskie	18.5	24.3	25.1	24.2	**24.1**	96.1	104.8	96.2	93.8	**100.3**	-4.0	2.3	5.7	3.4	**2.5**
si	**Slovenia**	**40.1**	**43.9**	**59.1**	**54.0**	**51.4**	.	.	.	.	.	**5.2**	**4.9**	**5.3**	**2.4**	**4.1**
sk	**Slovakia**	**18.0**	**18.2**	**24.8**	**22.9**	**20.5**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**11.1**	**8.9**	**7.9**	**4.8**	**11.8**
sk01	Bratislavský kraj	25.2	22.4	33.9	29.3	**27.9**	140.3	123.1	136.4	128.1	**134.3**	11.7	6.7	6.4	4.1	**11.6**
sk02	Západné Slovensko	16.9	17.4	21.6	18.6	**18.6**	94.1	95.4	87.0	81.5	**91.6**	10.2	10.4	7.3	5.1	**11.6**
sk03	Stredné Slovensko	16.4	17.2	22.5	18.0	**18.5**	91.2	94.7	90.6	78.7	**92.3**	11.3	9.7	8.7	4.2	**11.9**
sk04	Východné Slovensko	18.1	16.9	22.7	18.0	**18.9**	100.5	93.2	91.3	78.6	**92.0**	12.5	8.6	9.0	4.0	**12.0**
bg	**Bulgaria**	**6.6**	**7.6**	**9.3**	**10.5**	**8.8**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**2.7**	**1.3**	**5.5**	**7.8**	**8.2**
bg31	Severozapaden	6.8	7.1	7.4	5.4	**7.8**	102.5	92.7	79.3	51.5	**80.7**	2.6	5.1	3.8	-1.5	**5.1**
bg32	Severen tsentralen	5.8	7.0	7.5	5.5	**7.3**	87.4	92.3	80.9	52.6	**85.1**	2.6	4.0	6.3	-2.5	**7.4**
bg33	Severoiztochen	6.4	7.0	9.4	6.6	**8.1**	97.3	91.9	101.1	62.9	**86.6**	3.0	-0.3	4.4	0.7	**7.4**
bg34	Yugoiztochen	8.0	7.9	8.0	6.2	**8.5**	121.3	103.9	85.8	58.8	**90.6**	3.7	3.0	3.4	-0.1	**8.1**
bg41	Yugozapaden	7.2	8.4	11.6	14.0	**11.0**	109.4	110.0	124.1	132.7	**128.5**	3.6	0.8	6.5	12.1	**9.7**
bg42	Yuzhen tsentralen	5.4	6.7	7.1	5.8	**7.2**	82.1	87.3	76.8	55.5	**90.1**	0.7	-1.2	5.3	-0.8	**8.8**
ee	**Estonia**	**16.6**	**21.5**	**29.8**	**38.8**	**22.8**	.	.	.	.	.	**8.4**	**14.9**	**12.6**	**16.4**	**6.6**
lt	**Lithuania**	**16.8**	**16.0**	**21.9**	**23.7**	**18.0**	.	.	.	.	.	**9.7**	**8.1**	**11.2**	**7.3**	**8.8**
lv	**Latvia**	**12.2**	**10.1**	**16.0**	**22.5**	**14.4**	.	.	.	.	.	**2.2**	**0.3**	**2.3**	**3.2**	**6.7**

Table B3 contd.

Table B3 (contd.)

		in per cent of the Austrian average					in per cent of the national average					annual average wage growth 2000-2004* (nominal)				
		Industry	Construction	Market services	Business Services	Total	Industry	Construction	Market services	Business Services	Total	Industry	Construction	Market services	Business Services	Total
ro	**Romania**	**8.0**	**11.2**	**11.8**	**11.4**	**10.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**5.3**	**3.3**	**2.2**	**-6.8**	**20.5**
ro11	Nord-Vest	7.2	10.5	11.3	9.6	**9.1**	90.2	93.3	96.4	84.3	**90.2**	11.4	13.3	6.5	-2.6	**17.7**
ro12	Centru	7.6	10.2	11.6	10.3	**9.3**	94.1	91.1	98.7	90.8	**90.7**	3.1	-6.5	1.5	-13.7	**15.0**
ro21	Nord-Est	6.3	8.4	8.8	8.1	**8.1**	78.7	75.2	75.2	71.5	**88.7**	3.1	-1.3	-2.7	-1.3	**17.9**
ro22	Sud-Est	8.2	11.3	10.2	7.7	**9.3**	102.4	100.5	86.7	67.9	**86.6**	2.4	3.7	7.8	-6.9	**20.9**
ro31	Sud - Muntenia	8.0	8.9	9.2	7.4	**8.8**	99.9	79.1	77.9	65.4	**90.4**	8.3	0.8	1.1	-3.3	**19.9**
ro32	Bucuresti - Ilfov	10.9	15.5	18.0	16.1	**14.9**	135.3	138.1	152.8	141.9	**136.0**	4.8	4.6	-2.0	-12.4	**21.2**
ro41	Sud-Vest Oltenia	9.6	12.1	9.1	6.8	**10.4**	120.1	108.0	77.5	59.9	**107.1**	5.0	10.8	-4.8	-2.8	**29.3**
ro42	Vest	7.5	12.5	11.1	13.2	**9.7**	93.7	111.9	94.5	116.6	**99.6**	4.2	4.6	7.9	8.3	**22.8**

* Romania 2002-2004.

Source: Eurostat, Regional Economic Accounts; wages defined as compensation of employees / employees

Table B4

Regional outward commuting, 2004-2007

		Propensity to commute		Absolute number of commuters	
		2004	2007	2004	2007
at	**Austria**	**12.2**	**10.8**	**449.9**	**436.4**
at11	Burgenland (A)	35.9	32.9	43.4	44.5
at12	Niederösterreich	28.2	26.1	201.6	201.4
at13	Wien	9.0	8.2	63.2	63.8
at21	Kärnten	7.7	6.0	18.5	15.5
at22	Steiermark	5.7	4.5	30.3	25.9
at31	Oberösterreich	6.5	5.5	41.6	38.3
at32	Salzburg	5.8	6.1	14.4	16.5
at33	Tirol	4.9	3.7	15.9	13.3
at34	Vorarlberg	12.3	9.4	20.8	17.1
bg	**Bulgaria**	**1.5**	**1.6**	**43.4**	**50.9**
bg31	Severozapaden	1.5	1.6	4.6	5.6
bg32	Severen tsentralen	0.9	1.5	3.1	5.7
bg33	Severoiztochen	0.5	1.5	1.7	6.2
bg34	Yugoiztochen	1.2	1.3	5.2	5.7
bg41	Yugozapaden	1.9	1.1	16.8	11.4
bg42	Yuzhen tsentralen	2.1	2.5	11.9	16.3
cz	**Czech Republic**	**4.7**	**5.0**	**219.2**	**244.9**
cz01	Praha	4.2	4.1	25	25.7
cz02	Střední Čechy	16.3	16.5	88.3	95.8
cz03	Jihozápad	2.9	3.7	16.3	21.6
cz04	Severozápad	3.1	3.4	15.6	17.5
cz05	Severovýchod	2.7	3.4	18.3	24.2
cz06	Jihovýchod	3.2	3.4	23.5	26.7
cz07	Střední Morava	3.5	3.2	19	18.5
cz08	Moravskoslezsko	2.5	2.7	13.2	14.9
hu	**Hungary**	**4.3**	**4.8**	**168.8**	**188.3**
hu10	Közép-Magyarország	1.5	1.7	18	20.9
hu21	Közép-Dunántúl	9.9	11.1	45	51.8
hu22	Nyugat-Dunántúl	3.8	3.9	16	17.1
hu23	Dél-Dunántúl	3.9	4.9	13.8	16.4
hu31	Észak-Magyarország	9.2	9.5	39.7	40.1
hu32	Észak-Alföld	4.4	4.9	23.3	25.4
hu33	Dél-Alföld	2.7	3.4	13.1	16.6
pl	**Poland**	**1.3**	**2.0**	**180.6**	**309.7**
pl11	Lódzkie	1.5	3.7	16.5	45.1
pl12	Mazowieckie	0.5	1.1	10.1	24.2
pl21	Malopolskie	1.8	2.8	21.7	35.1
pl22	Slaskie	0.9	1.4	14.9	25.1
pl31	Lubelskie	1.8	2.1	15.7	20.3
pl32	Podkarpackie	0.7	1.3	5.1	10.4
pl33	Swietokrzyskie	1.6	2.1	7.9	11.9
pl34	Podlaskie	0.6	0.8	2.5	3.8
pl41	Wielkopolskie	0.8	1.0	10.1	13.5
pl42	Zachodniopomorskie	1.4	2.5	7.8	13.2
pl43	Lubuskie	1.5	3.0	5.5	12.9
pl51	Dolnoslaskie	2.1	2.4	19.6	26.8
pl52	Opolskie	3.1	7.5	10.1	27.1
pl61	Kujawsko-Pomorskie	1.3	1.9	10.2	14
pl62	Warminsko-Mazurskie	2.5	2.5	11.6	13.4
pl63	Pomorskie	1.7	1.7	11.5	13
ro	**Romania**	**0.9**	**1.3**	**84.7**	**125.5**
ro11	Nord-Vest	0.4	0.6	4.9	7
ro12	Centru	0.4	0.3	3.7	2.7
ro21	Nord-Est	0.6	1.0	9.6	17.6
ro22	Sud-Est	0.7	1.1	8.5	12.7
ro31	Sud - Muntenia	3.2	5.0	45.1	74.1
ro32	Bucuresti - Ilfov	0.4	0.1	3.9	0.7
ro41	Sud-Vest Oltenia	0.7	0.8	6.9	8.3
ro42	Vest	0.3	0.3	2.2	2.4
sk	**Slovakia**	**8.9**	**11.8**	**193.4**	**279**
sk01	Bratislavský kraj	2.2	2.7	6.5	8.9
sk02	Západné Slovensko	10.4	13.0	83.1	112.1
sk03	Stredné Slovensko	9.1	12.6	46.7	70.3
sk04	Východné Slovensko	10.3	14.3	57.1	87.7

Source: LFS

NUTS II regions in Austria and the NMS

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