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CENTROPE Regional Development Report 2010

Returning to Growth

Petr Rozmahel (Co-ordinator), Luděk Kouba (MENDELU), Karol Frank (EU-SAV), Peter Huber (WIFO), Mihaly Lados (WHRI), Roman Römisch (wiiw)

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Abstract

The economic crisis had a deep impact on the CENTROPE Region. In average the CENTROPE countries were harder hit than the EU 27. Moreover the relative growth performance of regions within CENROPE shifted. While before 2008 the new EU countries among the CENTROPE countries experienced (with the exception of Hungary) higher growth rates than Austria, in the crises year 2009 the opposite applied. This more than average affectedness of the CENTROPE countries does, however, not apply to the CENTROPE regions. According to existing regional forecasts the GVA decline of the CENTROPE region as an aggregate was still lower than that of the EU 27 and for 2010 as well as the years after this a return to above average growth performance is expected. Recovery has been more rapid than expected. Already in 2010 all CENTROPE countries but Hungary will resume GDP growth and once more economy in the new EU countries will grow faster than in Austria. On a regional level, by contrast, it is expected that all CENTROPE regions but Vas and South Moravia will return to economic growth in 2010. From a long-term perspective the increase in unemployment rates due to the crises seems to be more of a problem, since in the past unemployment rates have proven to be rather persistent in the CENTROPE and have fallen only in times of very rapid growth.

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1. Macroeconomic Overview

1.1 Global and European economic environment

To put the good news first: there are clear signs that the longest and deepest recession in the history of the EU has come to an end and the speed of recovery appears to be faster than expected in spring this year. Current forecasts by the EU Commission[1][2] suggest a growth rate of GDP for the EU of 1.8% and 1.7% for the Euro area. Still, despite the apparent economic upturn, there is no consensus about the shape of the recovery. Generally it is assumed[3] that instead of a "V" shaped recovery, i.e. a sharp downswing followed by an equally steep recovery, the post-crisis growth rates will be lower than they were before the crisis – at least in Europe. As a matter of fact, economic growth projections for 2010 for the EU are lower than for the largest non EU economies as well as for emerging Asia[4]. Thus, the US economy is projected to grow by 2.75% and Japan by around 2% this year, while in emerging Asia GDP growth rates are expected to be over 8%, with China being back at double digit growth rates.

The relatively strong growth of economic activity in other parts of the world also led to a rebound of global trade, which, especially in the early stages after the crisis, was the main driver of economic recovery in the EU. Usually, in post recession scenarios, investment and consumption demand tend to follow the upswing in trade with some lag. Indeed the latest forecasts by the EU Commission[5] show that the combined contributions of investment and consumption to GDP growth now seem to exceed those of foreign trade. The expansion of global trade benefitted especially the largest EU economy, Germany which is expected to grow by 3.7% in 2010. This is also good news for those EU countries, amongst them all of the CENTROPE countries, for which Germany is the main trading

[1] EU Commission DG Economic and Financial Affairs, 2010, Interim forecast September 2010.

[2] EU Commission DG Economic and Financial Affairs, 2010, European Economic Forecast, Autumn 2010.

[3] Astrov, V., Holzner, M., 2010, Will exports prevail over austerity? In: wiiw Current Analysis and Forecasts No. 6 July 2010.

[4] EU Commission DG Economic and Financial Affairs, 2010, European Economic Forecast, Spring 2010, p.9.

[5] EU Commission DG Economic and Financial Affairs, 2010, Interim forecast September 2010, p.3.

partner, as German growth is expected to have important spill over effects to these economies.

Despite this optimistic outlook current economic forecasts remain uncertain to some extent, as there are both upside and downside factors that may alter the actual economic development. As far as the upside factors are concerned there is the hope that the impact of the export led recovery on the labour markets and on consumption are stronger than expected, resulting in even higher growth rates than currently predicted. More importantly though, are the caveats with respect to the downside factors. Firstly, global demand is expected to weaken somewhat over the next half year or so, while secondly financial markets are still fragile and bank credit provision restrictive and tend to tighten even more, potentially reducing investment and consumption. Thirdly, fiscal consolidation is taking place in many countries, partly to finance the bail-out of the financial sector, which again tends to reduce aggregate consumption and investment.

1.2 Economic Development in the CENTROPE countries

1.2.1 Gross Domestic Product

In the pre-crisis years up to 2007 the CENTROPE countries formed one of the most vibrant economic areas within the EU. Especially in the period 2004 to 2007 average growth of GDP in the CENTROPE was almost twice as high as the average growth in the EU 27 (5.0% per year compared to 2.7%). The strong growth performance during those four years was mainly driven by Slovakia, showing an impressive annual growth rate of 7.7%. Growth was also strong in the Czech Republic (5.9% on average), and - if compared to other EU 15 countries – also Austria (3.1%) performed quite well. In Hungary growth was weaker, if compared with the Czech Republic and Slovakia, but still slightly ahead of Austria and the EU 27 average.

With 2008 first signs of an economic downturn appeared. The average growth rate in the CENTROPE was almost halved (2.9%) compared to the four year period before, but still the CENTROPE countries grew well ahead of the EU 27 on average. The slowdown of economic performance was less pronounced in Slovakia (GDP still grew by over 6%) and Austria, while in the Czech Republic and Hungary the reduction of growth rates was more significant. Thus in the Czech Republic the growth rate went down to 2.5% and the Hungarian economy almost stagnated, given the detrimental effects of the fiscal austerity package (made necessary by the lax fiscal policy from mid 2001 to mid 2006) on

consumption and investment demand. Still, Hungary grew slightly above the EU 27 average, though only marginally.

Table 1.1: Gross Domestic Product, real change in % against preceding year

	ø 2000-2003	ø 2004-2007	2008	2009		2010	2011
						forecast	
Austria	1.6	3.1	2.2	–3.9		2.0	1.7
Czech Rep.	2.9	5.9	2.5	–4.1		2.4	2.3
Hungary	4.4	3.3	0.6	–6.3		1.1	2.8
Slovakia	3.5	7.7	6.2	–4.7		4.1	3.0
CENTROPE	3.1	5.0	2.9	–4.8		2.4	2.5
EU 27	2.1	2.7	0.5	–4.2		1.8	1.7

Source: wiiw, Eurostat, DG ECFIN Autumn forecast 2010. Note: Table reports (average) annual growth rates of GDP at constant process, ø=average annual values

In 2009 finally the economic crisis hit the CENTROPE countries hard, and as a whole harder than the EU 27 on average. Still Austria and the Czech Republic performed slightly less bad than the other two CENTROPE countries, and also than the EU 27. As illustrated in Table 1.2, in both countries aggregate consumption continued to grow, if only slightly, but still exerting a small stabilising effect, which in the case of Austria was due to an expansionary fiscal policy including a tax reform and more financial support to families. Moreover, aggregate investment demand declined in Austria and the Czech Republic by less than in Hungary and Slovakia, though the investment decline contributed with 2.9 percentage points in Austria and even with 4.3 percentage points in the Czech Republic to the decline in GDP. In both countries foreign trade also contributed negatively to GDP development in 2009. In Slovakia the drop in investment demand was the exclusive factor behind the GDP decline (ceteris paribus causing a drop of GDP by 6 percentage points), as especially the developments of net exports and to a very small extent also domestic consumption tended to mitigate some of the negative effects of the crisis on GDP. Amongst the CENTROPE countries Hungary suffered most from the crisis. Just as there were first signs of an economic recovery following the economically painful years of fiscal adjustment, Hungary was struck hard by the turmoil in the global financial system. Given its large public and private debt, often denominated in foreign currencies, Hungary, not being able to roll over its debt on international financial markets, faced the threat of

insolvency, which could only be averted through an IMF stand-by agreement and further assistance by the EU and the World Bank. The economic consequences of this were a complete breakdown of consumption and investment demand, the former contributing 4.3 percentage points and the latter 7.1 percentage points to the decline of GDP. Another effect of the crisis was a significant devaluation of the Hungarian currency, which at least helped to curb imports from abroad and to increase exports, so that the Hungarian trade balance improved and quite to some extent contributed to soften the drop in economic activity.

Table 1.2: Contribution of consumption, investments and trade to total GDP growth*

	2005	2006	2007	2008	2009	*2010*	*2011*
						forecast	
	Austria						
GDP growth rate (%)	2.5	3.6	3.7	2.2	–3.9	2.0	1.7
Consumption[1)]	1.5	1.5	0.8	1.0	0.8	0.7	0.5
Investment[1)]	0.4	0.7	1.6	0.2	–2.9	–0.3	0.6
Trade balance[1)]	0.7	1.5	1.3	1.1	–1.8	1.6	0.7
	Czech Republic						
GDP growth rate (%)	6.3	6.8	6.1	2.5	–4.1	2.4	2.3
Consumption[1)]	1.9	2.8	2.5	1.9	0.4	0.8	0.2
Investment[1)]	–0.2	2.5	2.5	–0.8	–4.0	0.8	1.1
Trade balance[1)]	4.6	1.5	1.1	1.3	–0.6	0.7	1.1
	Hungary						
GDP growth rate (%)	3.2	3.6	0.8	0.8	–6.7	1.1	2.8
Consumption[1)]	2.3	1.9	–1.5	0.4	–4.3	–2.0	1.5
Investment[1)]	–1.5	–0.4	0.3	0.4	–6.4	0.8	1.1
Trade balance[1)]	2.4	2.2	2.1	0.0	4.0	2.2	0.2
	Slovak Republic						
GDP growth rate (%)	6.7	8.5	10.5	5.8	–4.8	4.1	3.0
Consumption[1)]	4.5	5.2	3.9	4.5	1.1	–0.2	0.0
Investment[1)]	4.3	1.8	2.7	1.3	–8.6	3.6	2.0
Trade balance[1)]	–2.1	1.6	3.9	0.0	2.6	0.7	1.0
	EU 27						
GDP growth rate (%)	2.0	3.2	3.0	0.5	–4.2	1.8	1.7
Consumption[1)]	1.6	1.8	1.6	0.9	–0.5	0.7	0.7
Investment[1)]	0.5	1.4	1.4	–0.5	–3.6	0.6	0.7
Trade balance[1)]	–0.1	0.1	–0.1	0.1	–0.1	0.5	0.4

Source: wiiw, Eurostat, DG ECFIN Spring forecast, 2010, * Table without "Other items" that include changes in stocks and statistical discrepancies, 1) contribution to total GDP growth in percentage points.

In 2010 and 2011 the CENTROPE economies are expected to recover. In 2010 the main consensus is that recovery will be predominantly export-led, due to the strong expansion

of global economic activity and trade as well as the relatively strong growth of the main trading partner Germany. Consumption and investment growth tend to follow with some lag and are expected to be the main factors behind economic growth only in 2011. Seen from a different angle, the growth rate of GDP can also be defined as the sum of the growth rate of productivity (i.e. output per employed) and the growth rate of the number of employed. Using this definition, it becomes apparent that up to 2007 economic growth throughout the CENTROPE countries was mainly carried by advances in productivity rather than employment (see Table 1.3). Despite this general trend, individual country experiences were quite differentiated. Thus, in Austria, employment contributed more to output growth than productivity over the whole observed period (starting in 1996), except for the latest period 2004-2007 where employment contributed less. In Hungary, too, GDP growth was also associated with employment growth, but only up to 2003. The slowdown of economic activity in the period 2004-2007 had pronounced effects on the employment side, as in fact employment declined, while the growth rate of productivity almost remained constant when compared to the previous period. Contrastingly, in the Czech Republic and Slovakia, the years up to 2004 were marked by relatively high productivity growth, while in fact employment tended to decline. Only in the period 2004-2007, a period of especially strong economic growth in both countries, the increase in output was partly achieved by an increase in the number of employed. There was, however, still a large gap between the growth rate of productivity and the growth rate of employment.

In 2008, when there was already a marked slowdown in economic activity in the CENTROPE countries, except Slovakia, productivity reacted much quicker than employment. Thus, productivity growth rates tended to decline quite significantly, while in fact employment tended to grow even quicker than in the years before, at least as far as Austria and Slovakia are concerned. In the latter employment almost grew by 3% in 2008. In the Czech Republic, there was only a small reduction in the employment growth rate (from 1.5% on average in the years 2004-2007 to 1.2% in 2008), while in Hungary, feeling the extent of the more or less home-made recession employment levels declined.

The economic and financial crisis caused both employment and productivity levels to decline significantly in all four CENTROPE countries and in the EU 27 in general. Importantly however, productivity levels declined by more, and partly by much more than employment levels, indicating that a preferred strategy to weather the crisis was to reduce

hours worked rather than to lay off workers: A policy that was in part supported through government subsidies for short term work in Austria.

Table 1.3: Contribution of productivity and employment growth to GDP growth (in percentage points),

	ø 1996-1999	ø 2000-2003	ø 2004-2007	2008	2009	*2010*	*2011*
						Forecast	
	Austria						
GDP growth (%)	2.8	1.6	3.1	2.2	–3.9	2.0	1.7
Productivity[1)]	1.9	1.3	1.5	0.4	–3.0	1.2	1.0
Employment[1)]	0.9	0.4	1.5	1.8	–0.9	0.9	0.7
	Czech Republic						
GDP growth (%)	1.0	2.9	5.9	2.5	–4.1	2.4	2.3
Productivity[1)]	1.9	3.0	4.4	1.2	–3.1	2.9	2.2
Employment[1)]	–1.0	–0.1	1.5	1.2	–1.1	–0.5	0.2
	Hungary						
GDP growth (%)	3.3	4.2	3.0	0.8	–6.7	1.1	2.8
Productivity[1)]	2.2	4.1	3.4	2.1	–4.0	1.9	2.7
Employment[1)]	1.1	0.1	–0.3	–1.3	–2.8	–0.8	0.1
	Slovakia						
GDP growth (%)	3.9	3.5	7.7	5.8	–4.8	4.1	3.0
Productivity[1)]	4.4	3.6	6.2	3.0	–2.5	7.2	2.6
Employment[1)]	–0.5	–0.1	1.4	2.8	–2.4	–2.8	0.3
	EU 27						
GDP growth (%)	2.7	2.1	2.7	0.5	–4.2	1.8	1.7
Productivity[1)]	1.6	1.3	1.4	–0.4	–2.4	2.4	1.4
Employment[1)]	1.0	0.8	1.3	0.9	–1.8	–0.6	0.3

Source: wiiw, Eurostat. 1) Contribution to total GDP growth in percentage points. ø=average annual values

As far as the economic recovery is concerned, the expectations are that the economic upturn is initially carried by advances in productivity levels while employment levels will lag behind, thus mirroring the developments during the crisis. Hence it is forecasted that in 2010 productivity will grow throughout the CENTROPE countries, while there will be in fact a reduction in employment. Only with 2011 employment levels are expected to grow again, yet at a lower rate than productivity.

Table 1.4: Balance of payments in % of total GDP

	2004	2005	2006	2007	2008	2009
	Austria					
Current account balance	2.08	2.02	2.77	3.54	4.86	2.91
Balance in Goods	–0.34	–0.59	0.07	0.48	–0.20	–0.85
Balance in Services	3.43	3.85	3.78	4.10	5.03	4.68
Current Incomes	–0.42	–0.67	–0.58	–0.59	0.60	–0.30
Current Transfers	–0.59	–0.58	–0.51	–0.45	–0.57	–0.63
	Czech Republic					
Current account balance	–5.27	–1.34	–2.41	–3.21	–0.65	–1.07
Balance in Goods	–0.48	1.98	2.02	3.41	2.79	4.98
Balance in Services	0.59	1.23	1.40	1.40	1.78	0.73
Current Incomes	–5.59	–4.80	–5.19	–7.24	–4.75	–6.38
Current Transfers	0.22	0.24	–0.64	–0.78	–0.47	–0.39
	Hungary					
Current account balance	–8.26	–7.19	–7.20	–6.56	–7.02	0.27
Balance in Goods	–3.45	–2.49	–2.28	0.19	–0.05	4.34
Balance in Services	0.58	1.28	1.37	1.04	0.91	1.58
Current Incomes	–5.22	–5.66	–5.94	–7.29	–7.23	–5.99
Current Transfers	–0.17	–0.32	–0.35	–0.50	–0.65	0.33
	Slovakia					
Current account balance	–3.40	–8.43	–8.16	–5.30	–6.61	–3.19
Balance in Goods	–3.47	–5.02	–5.54	–1.20	–1.10	1.87
Balance in Services	0.64	0.68	1.19	0.71	–0.73	–1.97
Current Incomes	–0.97	–4.12	–3.72	–4.22	–3.44	–2.03
Current Transfers	0.40	0.03	–0.10	–0.60	–1.33	–1.07

Source: Eurostat, OeNB, Statistik Austria. Note: positive values indicate surplus; negative values deficit.

1.2.2 Current account, foreign trade and FDI

The economic and financial crisis, while having obvious negative repercussions on the income and employment prospects of the population residing in the CENTROPE, also led to an improvement in the current account balance of most CENTROPE countries, which, especially in the case of the new member state CENTROPE countries, tended to be notoriously negative over the last couple of years. From 2005 to 2008 Hungary and

Slovakia had current account deficits from at least 5% to over 8% of GDP. In Slovakia it was predominantly the net incomes from/to abroad and, especially in the years 2005 and 2006 the balance of trade in goods that contributed excessively to the highly negative current account balance. In Hungary the income balance, i.e. mostly the transfer of incomes generated through FDI firms to abroad, was more important for the large deficit, while the trade in goods, after contributing to the deficit in 2005 and 2006, was nearly balanced in 2007 and 2008. In the Czech Republic the current account balance tended to be negative, too, but to a lower extent than in the other two NMS CENTROPE countries. The main reason for this is that the balance of goods trade is highly positive and therefore partly offsetting the negative flows of incomes.

Importantly, all four CENTROPE countries are net exporters of services, especially Austria, where the surplus in services trade is around 4% of GDP on average over the latest years.

Table 1.5: Inflow of Foreign Direct Investment in % of GDP

	2004	2005	2006	2007	2008	2009
Austria*	1.10	3.56	2.46	8.37	2.72	1.85
Czech Republic	4.54	9.34	3.84	6.02	3.02	1.41
Hungary*	4.40	6.96	6.24	3.91	4.50	1.10
Slovak Republic	7.19	5.07	7.43	3.84	3.70	–0.06

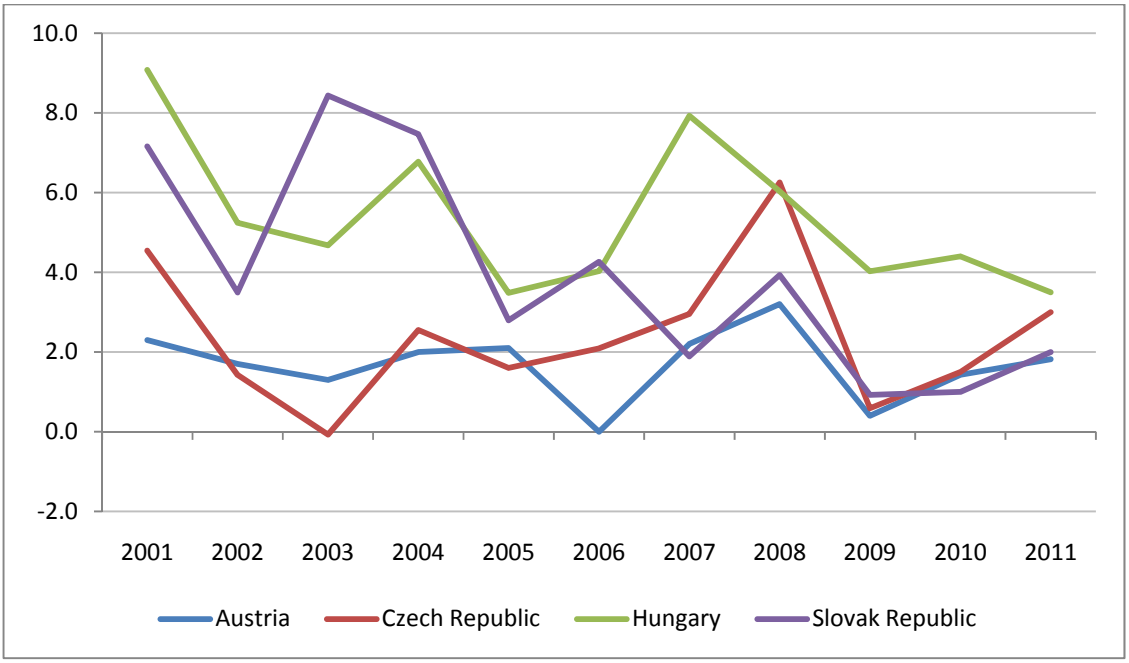
Source: wiiw, Austrian National Bank * Excluding Special Purpose Enterprises (SPE).

In 2009 the economic crisis brought a significant shift in country trends. The Hungarian current account balance turned from a deficit of 7% of GDP in 2008 to a slight surplus, mainly because the balance in goods trade improved to a surplus of 4% of GDP, while incomes transferred to abroad declined, though still remaining highly negative. In Slovakia, the current account balance improved as well, basically for the same reasons as in Hungary, yet still remained negative at around 3% of GDP. In the Czech Republic the current account balance already improved in 2008 due to a reduction of the deficit in the balance of incomes, however, turned slightly more negative again in 2009.

The high current account deficits in parts of the CENTROPE, and hence the outflow of foreign exchange, were only sustainable because there were almost equally large inflows of foreign direct investments (FDI) to these countries. Thus from 2004 to 2008 inflows of FDI accounted for at least 3% of GDP in each of the CENTROPE countries, but in most

years inflows were much higher, reaching even over 9% in 2005 in the Czech Republic. As a tendency, FDI inflows to Austria are lower than in the other CENTROPE countries, with the exception of year 2007, when there was a FDI of around 8% of GDP, due to a restructuring of the banking sector as Bank Austria got the responsibility for the East European affiliates of Unicredito. With the crisis and even already before, FDI inflows tended to get smaller throughout the CENTROPE, being slightly above 1% of GDP in Austria, the Czech Republic and Hungary in 2009.

Figure 1.1: Consumer price inflation, change in % against preceding year



Source: wiiw, WIFO

1.2.3 Inflation

At present time inflation is not really an issue in the CENTROPE as economic downturns usually tend to cause inflation rates to fall. Thus inflation rates are around 1% in 2009 in the CENTROPE countries with the exception of Hungary, where it is around 4% per year (down from 8% in 2007). For 2010 and especially 2011 it is expected that consumer prices will tend to rise again, due to, increases in demand (with GDP growth) and it is also expected that oil and energy prices will increase. Despite this, meeting the Maastricht inflation criteria (3% inflation per year) is not considered to be too much of a problem for

Austria, the Czech Republic and Slovakia. In Hungary the decrease in inflation was partly a consequence of the slow growth performance. In the wake of an economic upturn inflation might accelerate again in part on account of the recent devaluation of the Hungarian currency (raising import prices), so that the Maastricht criteria might be out of reach.

1.2.4 Government budget deficit and gross debt

The trends over time in general government budget deficit and gross debt follow a heterogeneous pattern across the CENTROPE countries. Thus in the case of the Czech Republic and Slovakia the public deficits showed a declining trend until the crisis, and were at least from 2006 to 2008, below the Maastricht deficit criterion (which, for Slovakia was a must to introduce the Euro). In Austria, being part of the Euro area, deficits were well below the 3% of GDP Maastricht benchmark (with the exception of 2004) and in 2007 and 2008 close to being balanced. Only Hungary, given its lax fiscal policy in the years before the crisis, incurred in the period 2004 to 2007 significant budget deficits, reaching even over 9% of GDP in 2006.

The economic and financial crisis led to mostly sharp increases in the public deficit throughout the CENTROPE countries. In Hungary, where fiscal constraints were much tighter than elsewhere, the deficit increased only slightly (from 3.8% of GDP in 2008 to 4.0% in 2009), while in the other CENTROPE countries the deficits increased by 3 percentage points to 4 percentage points in the crisis.

The expectations for further developments are that the loss of tax revenues and the increased fiscal expenditures (partly through automatic stabilisers) caused by the crisis let the deficits in the countries remain at a high level, at around 4% to 7% of GDP for 2010. For 2011 Austria expects a slight reduction of the deficit, given the deficit reduction measures planned by the government. Hungary pursuing desperate stabilisation attempts, given that the country was on the verge of financial collapse, is expected to keep its deficit at around 4% of GDP, while the Czech Republic and Slovakia are expected to show a deficit of around 6% of GDP.

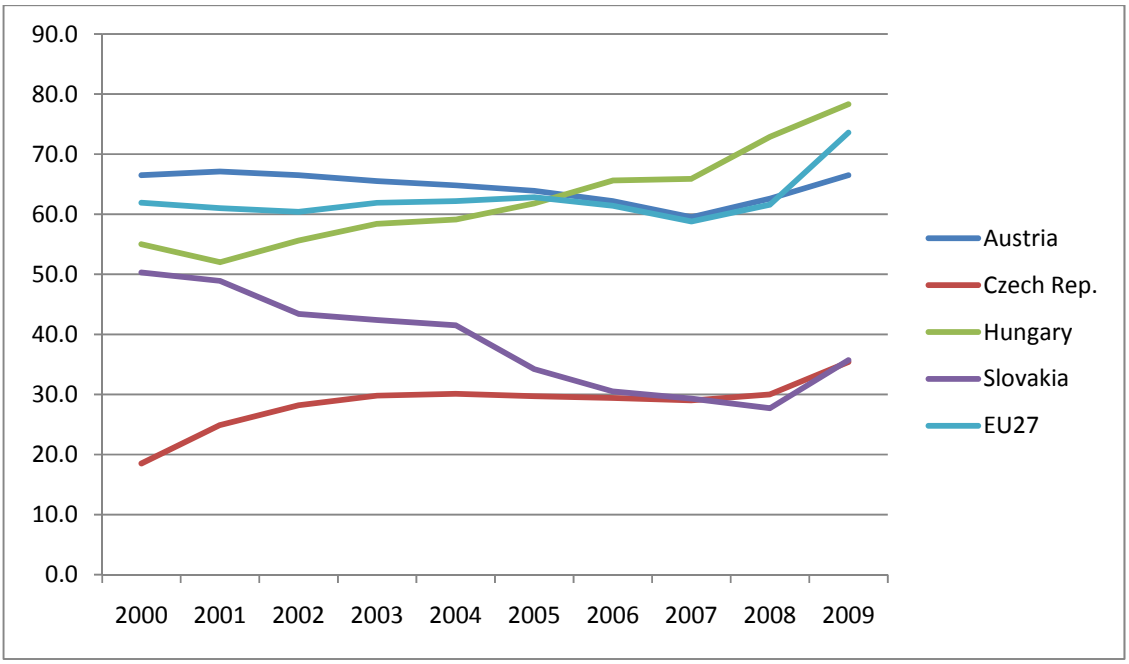
Table 1.6: General government deficit and surplus as a percentage of GDP

	2004	2005	2006	2007	2008	2009	*2010*	*2011*
							forecast	
Austria	–4.4	–1.7	–1.5	–0.4	–0.4	–3.4	*–4.6*	*–3.8*
Czech Rep.	–3.0	–3.6	–2.6	–0.7	–2.7	–5.9	*–5.6*	*–5.7*
Hungary	–6.4	–7.9	–9.3	–5.0	–3.8	–4.0	*–4.0*	*–4.0*
Slovakia	–2.4	–2.8	–3.5	–1.9	–2.3	–6.8	*–7.0*	*–6.5*
EU 27	–2.9	–2.5	–1.4	–0.8	–2.3	–6.8	.	.

Source: wiiw, WIFO, Eurostat, Note: positive values indicate surplus; negative values deficit. . = values not available due to missing data

The current and forecasted high public deficits for the Czech Republic and Slovakia have to be put against the level of government debt in both countries. Because of consolidation measures on the one side and strong economic growth on the other, both countries reduced or stabilised their debt to GDP ratio at around 30% until 2008. Therefore both countries have ample space to manoeuvre on the fiscal side, allowing them to run some more extensive fiscal deficits to stimulate the economy. By contrast, Hungary had a constantly increasing debt to GDP ratio over time before 2008, reaching 73% in 2008 and 78% in 2009. This reduces fiscal flexibility and also prevents stimulating effects to emanate from the general government budget. In Austria the pure numbers are similar to Hungary, and there are also plans to consolidate the budget, but interestingly enough the situation is perceived less dramatic than in Hungary. As a consequence, while the Czech Republic and Slovakia are expected to meet the Maastricht criteria on budget deficit and government debt once economic growth picks up again, Austria will be forced to a more restrictive fiscal policy to meet the debt criterion, and the recently published plans for the next budget clearly point in this direction. Yet, a neglected aspect is, that the debt to GDP ratio can also be reduced if growth of GDP is higher than the growth of public debt. For Austria it is unclear whether it can reach pre-crisis GDP growth levels. In Hungary meeting the Maastricht criteria is presumably not one of the prime targets of economic policy, though both debt and deficit need to be reduced. The main aim is to get the economy growing again.

Figure 1.2: General government consolidated gross debt as a percentage of GDP



Source: Eurostat

1.3 Labour market developments

The economic and financial crisis also had significant negative effects on the labour markets in the CENTROPE countries, especially in the three countries in Central and Eastern Europe. Historically, i.e. from the year 2000 onwards employment rates in Hungary and Slovakia (of the population aged 15-64) were already low by EU 27 standards, being around 6 percentage points lower than the EU 27 average in the years from 2000 to 2003. However, given the differences in their growth experience, Slovakia, until 2008, managed to improve its employment situation, as the employment rate grew by slightly more than 5 percentage points and the difference to the EU 27 average reduced to around 3.5 percentage points. Contrastingly, in Hungary the employment rate remained more or less constant from 2000 to 2008, which means that the gap to the EU 27 average increased as the EU 27 employment rate grew by 3 percentage points over the same period of time. In the Czech Republic the employment situation traditionally is better than in the other two NMS CENTROPE countries, and also better than in the EU 27 average, but not by much. Austria is the only CENTROPE country where the employment rate is

clearly and constantly above the EU average, by around 6 percentage points from 2000-2008.

Table 1.7: Employment rate in % of population aged 15-64 years

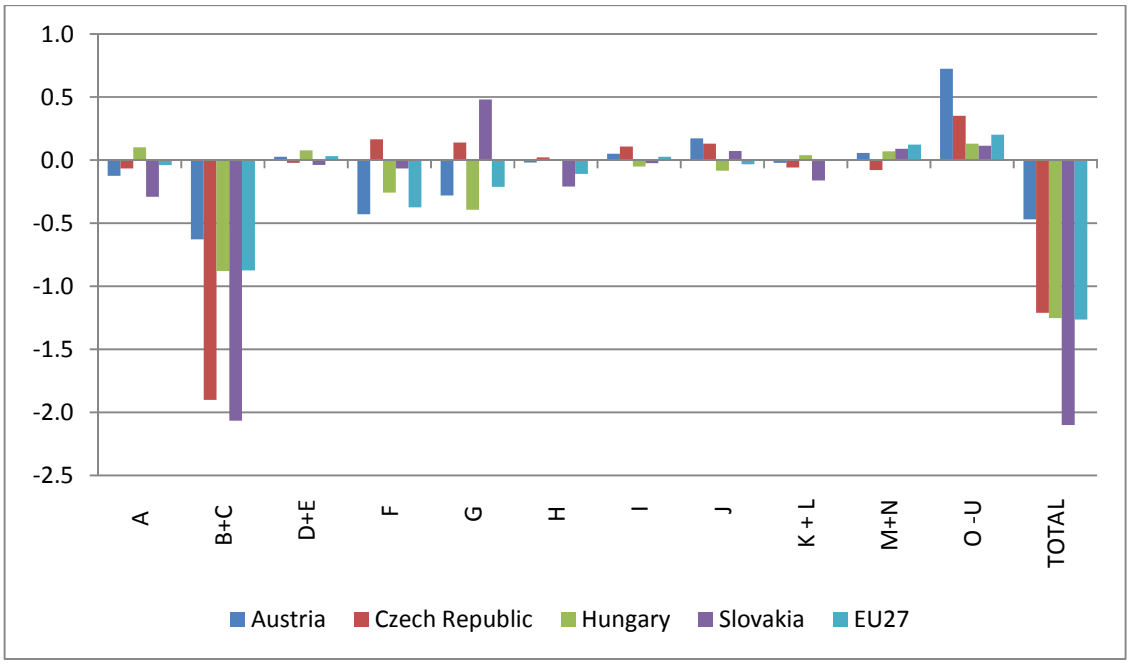
	ø 2000-2003	ø 2004-2007	2008	2009	*change 2007-2008[1)]*	*change 2008-2009[1)]*
Austria	68.0	69.2	72.1	71.6	*0.7*	*–0.5*
Czech Rep.	65.1	65.1	66.6	65.4	*0.5*	*–1.2*
Hungary	56.3	57.0	56.7	55.4	*–0.6*	*–1.3*
Slovakia	56.9	58.6	62.3	60.2	*1.6*	*–2.1*
EU 27	62.4	64.1	65.9	64.6	*0.5*	*–1.3*

Source: Eurostat, ø=average annual values 1) in percentage points.

In the wake of the crisis the employment situation worsened in every country, though in Austria by less than in other CENTROPE countries. Thus the employment rate in Austria declined "only" by 0.5 percentage points, while in the Czech Republic and Hungary it declined by around 1.3 percentage points, i.e. exactly the same amount the employment rate decreased in the EU 27. In Slovakia the reduction of the employment rate by 2 percentage points was more pronounced.

Analysing the contribution of the sectors of economic activity to the decline of the aggregate employment rate (see Figure 1.3) it is apparent that throughout the CENTROPE and in the EU it was predominantly the manufacturing sector where employment decreased, especially in the Czech Republic and Slovakia. There the manufacturing sector contributed around 2 percentage points to the decline of the overall employment rate. Additionally, employment tended to decline in the construction and the wholesale and retail trade sector, though experiences were mixed across the CENTROPE countries. Employment in construction declined in Austria, Hungary and Slovakia just as in the EU 27 but not in the Czech Republic, where it in fact increased. Similar, wholesale and retail trade contributed negatively to the employment rate changes in Austria and Hungary, but actually increased in the other two CENTROPE countries. Importantly for all countries, public services had a stabilising function during the crisis, as employment tended to grow, though in Austria and the Czech Republic by more than in Hungary and Slovakia.

Figure 1.3: Sector contribution to changes in the employment rate 2008-2009, population aged 15-64



Source: Eurostat, wiiw calculations Sectors are defined according to NACE rev.2: A - Agriculture, forestry and fishing, B - Mining and quarrying, C – Manufacturing, D - Electricity, gas, etc., E - Water supply; sewerage, etc., F – Construction, G - Wholesale and retail trade; repair, H - Transportation and storage, I - Accommodation and food service activities, J - Information and communication, K - Financial and insurance activities, L - Real estate activities, M - Scientific and technical activities, N - Administrative and support service activities, O - Public administration and defence; compulsory social security, P – Education, Q - Human health and social work activities, R - Arts, entertainment and recreation, S - Other service activities, T - Activities of households as employers etc.; U - Activities of extraterritorial organisations and bodies

The recession also had a differentiated impact on the labour market situation of the three educational segments of the labour market. Surprisingly however, the crisis not necessarily aggravated the notorious differences in employment opportunities for the three educational segments. This notwithstanding employment rates declined for all educational groups.

In Austria, just as in the EU on average, employment rates for those with completed primary education dropped by more than employment rates for those with a tertiary education. However in the three NMS CENTROPE countries the employment rate for this segment dropped by less than the employment rate for the population with completed secondary education. While this may be traced back to the decline in manufacturing

employment, as this sector mostly employs medium qualified workers, it does not change the fundamental differences in employment opportunities across educational groups of the population. Table 1.8 illustrates that the employment rates for the population with completed primary education are dramatically low in the NMS CENTROPE countries, especially in Slovakia, where only slightly above 15% of this part of the population are employed (compared to over 50% in Austria), but also in the Czech Republic and Hungary, were only around a quarter find employment.

Table 1.8: Employment rates by educational attainment, in % of population aged 15-64

	ø 2000-2003	ø 2004-2007	2008	2009	*change 2007-2008[1)]*	*change 2008-2009[1)]*
	Completed primary education					
Austria	47.5	48.3	51.0	49.1	*–0.9*	*–1.9*
Czech Republic	27.0	23.0	24.1	22.8	*–0.1*	*–1.3*
Hungary	28.8	27.6	27.2	25.7	*–0.1*	*–1.5*
Slovakia	16.3	14.1	15.9	14.3	*1.2*	*–1.6*
EU 27	47.9	47.8	48.1	46.2	*–0.5*	*–1.9*
	Completed secondary education					
Austria	73.4	74.0	77.1	76.6	*1.2*	*–0.5*
Czech Republic	72.8	71.9	73.1	71.3	*0.5*	*–1.8*
Hungary	66.7	65.1	63.3	61.6	*–1.5*	*–1.7*
Slovakia	65.5	67.3	70.1	67.1	*1.1*	*–3.0*
EU 27	68.1	69.0	70.6	69.1	*0.4*	*–1.5*
	Completed tertiary education					
Austria	85.3	84.4	86.1	86.1	*–0.4*	*0.0*
Czech Republic	86.0	84.5	83.2	82.0	*–0.8*	*–1.2*
Hungary	82.2	81.5	79.5	78.1	*–0.5*	*–1.4*
Slovakia	85.8	83.1	83.8	80.3	*0.7*	*–3.5*
EU 27	82.6	83.1	83.9	82.9	*0.1*	*–1.0*
	Total					
Austria	68.0	69.2	72.1	71.6	*0.7*	*–0.5*
Czech Republic	65.1	65.1	66.6	65.4	*0.5*	*–1.2*
Hungary	56.3	57.0	56.7	55.4	*–0.6*	*–1.3*
Slovakia	56.9	58.6	62.3	60.2	*1.6*	*–2.1*
EU 27	62.4	64.1	65.9	64.6	*0.5*	*–1.3*

Source: Eurostat, ø=average annual values 1) in percentage points

The least affected group by the crisis was the population with completed tertiary education (i.e. university degree or similar), which anyway has the best prospects on the labour market as the employment rates show. Importantly though, there was only a small variation between this educational group and the other groups in the reaction to the crisis, as the decline in employment rates was only slightly smaller than for others. In Slovakia the highly skilled even suffered more than the other educational groups, which is a surprising, but not readily explainable result.

Regarding the changes in unemployment, the recession ended a prolonged phase of declining unemployment rates in all CENTROPE countries except Hungary, where unemployment already increased before the worldwide financial crisis. There was, however, a slight differentiation in the extent to which this occurred. In Austria unemployment rates (for the population aged 15-64) increased by 1 percentage points and thus less than in the EU 27 on average, where it grew by slightly less than 2 percentage points. In the three NMS CENTROPE countries unemployment increased by more than in the EU 27, by 2.2 percentage points in Hungary, 2.4 percentage points in the Czech Republic and by 2.6percentage points in Slovakia.

Table 1.9: Unemployment rate of the population aged 15-64 years

	ø 2000-2003	ø 2004-2007	2008	2009	*change 2007-2008[1)]*	*change 2008-2009[1)]*
Austria	4.6	5.0	3.9	4.9	–0.6	1.0
Czech Rep.	7.9	7.2	4.4	6.8	–1.0	2.4
Hungary	5.9	7.0	7.9	10.1	0.5	2.2
Slovakia	18.6	14.9	9.5	12.1	–1.7	2.6
EU 27	9.0	8.5	7.1	9.0	–0.1	1.9

Source: Eurostat ø=average annual values 1) in percentage points

In contrast to the development of employment rates there was a clear differentiation in the changes in the unemployment situation for the three educational groups of the population[6]. Unemployment rates increased most for those with completed primary education, with the small exception of Slovakia. The increase was particularly strong in the Czech Republic and Hungary, where unemployment rates for this group increased by 5 percentage points

[6] This is because employment rates are calculated as the share of employed in total population, while unemployment rates only take into account active population, i.e. they are calculated as the share of unemployed in the sum of employed and unemployed.

and 4.5 percentage points respectively. In the group of active population with completed secondary education unemployment grew by above 2 percentage points in the Czech Republic and Hungary and even above 3 percentage points in Slovakia, while in Austria the increase was below 1 percentage points. The group with tertiary education was generally the least affected. Unemployment rates increased by around 0.5 percentage points to 1.2 percentage points for this group in the CENTROPE and thus either below or pari passu with the EU 27 average.

Table 1.10: Unemployment rates of the population aged 15-64 by educational attainment (in %)

	ø 2000-2003	ø 2004-2007	2008	2009	*change 2007-2008[1)]*	*change 2008-2009[1)]*
	Completed primary education					
Austria	8.1	9.8	8.1	10.1	*–0.7*	*2.0*
Czech Rep	21.8	24.6	19.4	24.4	*–1.0*	*5.0*
Hungary	11.7	15.3	18.9	23.4	*1.4*	*4.5*
Slovakia	44.1	49.8	39.6	41.7	*–5.5*	*2.1*
EU 27	11.7	11.8	11.6	14.8	*0.7*	*3.2*
	Completed secondary education					
Austria	4.2	4.2	3.3	4.2	*–0.4*	*0.9*
Czech Rep.	7.1	6.5	3.7	6.2	*–1.0*	*2.5*
Hungary	5.6	6.5	7.2	9.4	*0.6*	*2.2*
Slovakia	17.7	13.2	8.1	11.5	*–1.3*	*3.4*
EU 27	9.5	8.6	6.5	8.4	*–0.5*	*1.9*
	Completed tertiary education					
Austria	2.1	2.7	1.8	2.3	*–0.7*	*0.5*
Czech Rep	2.4	2.2	1.7	2.5	*0.0*	*0.8*
Hungary	1.5	2.7	2.8	4.0	*–0.1*	*1.2*
Slovakia	4.7	4.6	3.6	4.3	*–0.5*	*0.7*
EU 27	4.7	4.7	3.8	5.0	*–0.2*	*1.2*
	Total					
Austria	4.6	5.0	3.9	4.9	*–0.6*	*1.0*
Czech Rep	7.9	7.2	4.4	6.8	*–1.0*	*2.4*
Hungary	5.9	7.0	7.9	10.1	*0.5*	*2.2*
Slovakia	18.6	14.9	9.5	12.1	*–1.7*	*2.6*
EU 27	9.0	8.5	7.1	9.0	*–0.1*	*1.9*

Source: Eurostat ø=average annual values 1) in percentage points

1.4 Conclusions

In the years before the crisis the CENTROPE was -in terms of GDP- one of the fastest growing areas within the EU, though the individual performance of countries tended to differ a lot. While Slovakia and the Czech Republic had very high growth, Austria's performance was weaker if compared to the CENTROPE average. However, when compared to the more developed EU member countries and the EU 27 average Austria performed quite well. Hungary suffered from a restrictive fiscal policy and growth rates were lower than in Slovakia and the Czech Republic in the pre-crisis period, but nevertheless higher than in Austria. Over a longer time horizon the average growth performance in the CENTROPE countries as an aggregate tended to improve from 2004 onwards, with the exception of Hungary. Thus, growth rates in the period of 2004-2007, i.e. with the EU accession of ten new member states, were higher than in the years before, not only in the Czech Republic and Slovakia, but also in Austria – and in the EU 27 on average, though there the increase in growth was lower than in the CENTROPE. It is not entirely clear how much this can be attributed to the EU accession of the NMS CENTROPE countries, but analysis shows that the effects of enlargement are at least non-negligible and may even have been considerable[7]. Certainly the structural reforms induced by enlargement, just as free movement of goods, services and persons, and especially FDI inflows and EU funds[8] were important drivers of growth. To illustrate, FDI inflows averaged 5% of GDP from 2004 to 2008 in the three NMS CENTROPE countries, with the foreign firms not only being important sources of employment and structural change, but also being the main exporters amongst the NMS CENTROPE firms. Similar, it is estimated that transfers from the EU on a net basis account for 2.5% - 4% of GDP in the NMS countries, which is more than Western Europe countries received through the European Recovery Program after World War II[9].

By the same token, the strong effects of FDI and EU transfers raise the issue of sustainability of growth in the CENTROPE countries. Already now there are signs that some companies leave the countries, looking for countries further to the East because of

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[7] See Rapacki, R. Próchniak, M., 2009, The EU Enlargement and Economic Growth In the CEE New Member Countries, EC, DG ECFIN European Economy, Economic Papers No. 367.

[8] For estimates on the impact of EU Cohesion Policy on national growth rates see: EC, DG Region, 2007. Growing regions, growing Europe, Fourth Report on Economic and Social Cohesion, chapter 2.

[9] See Richter, S., 2006, The miracle of Brussels, a compromise on the long term budget of the European Union, wiiw Monthly Report 01/2006.

wage costs. Moreover, EU Cohesion Policy is currently heavily discussed and it is not clear to what extent it will be continued after 2013. Thus over the longer run the current growth trajectories might not be sustainable, if the CENTROPE countries continue on external sources of economic development.

All the more, integration in the EU, but also within the NMS countries and within the CENTROPE countries is an important issue. Past and current trends show that the integration process is indeed progressing, as e.g. illustrated by data on foreign trade, that shows increasing trade relations of the CENTROPE countries with other countries in the NMS, while still Germany remains the single most important trade partner for all CENTROPE countries (with a share of 20-30% in foreign trade).

The economic development of the CENTROPE countries was heavily affected by the economic and financial crisis. As a trend GDP declined by more than in other EU countries, given the relatively strong dependence of the CENTROPE on foreign trade. At the same time this dependence is also the source of a relatively strong recovery, as global trade grew strongly over the last months. The effects of this on the CENTROPE countries were, however, more of an indirect nature, as it is estimated that Germany benefitted in the first place and other countries, like the CENTROPE-countries benefitted in the second place through German spillovers. Certainly this can be considered a positive aspect of the integration of the CENTROPE into the EU, but it also raises the issue whether the CENTROPE wants to be more or less dependent on the developments –and economic policy- in one country.

Pari passu with the decline in GDP, productivity and employment declined in the CENTROPE during the crisis, though as a rule productivity declined by more than employment. Vice versa, productivity tends to increase faster in the recovery phase, while employment is lagging, and in fact is projected to decline in 2010 and to increase only slightly in 2011. The pre-crisis experience has shown that the employment situation in the NMS CENTROPE was heavily dependent on high economic growth in the countries. Only with high GDP growth rates employment levels tended to increase and unemployment levels tended to decline, while most of the growth was generated through advances in productivity levels. Thus, a fundamental question regarding the labour market situation is, whether the CENTROPE countries can return to pre-crisis growth levels or not. If this is not the case, employment prospects, especially for those with low or even medium education might be worse than before the crisis, at least in the medium run. Still the

question is what policy can do about this. Employment levels of the population with completed primary education have been notoriously low in the NMS CENTROPE, and even declined in the phases of high economic growth. Active labour market policies and upgrading the skills of this segment of the labour market might be one solution, while increasing the demand of such labour, e.g. through an increase of employment in the services sector, might be another. In any case it seems that the crisis did not change the labour market situation for the most vulnerable group of the population much. Rather the problems of this group seem to be a persistent long term structural problem.

2. The Economic Development of the CENTROPE Region

Next to the economic recession of 2008/9 a second major policy change affecting the CENTROPE in the last decade was the enlargement of the European Union by the 10 new member states in 2004. As a region located at the border of the old and new member states that is characterised by strong economic centres, it was expected that this enlargement would have important repercussions both on the location of economic activity within the CENTROPE as well as potentially on the flow of goods and services and (after the end of transitional periods in 2011) labour among the individual parts of the CENTROPE.

Due to the substantial delay with which European level data on the most important economic indicators such as GDP, employment and unemployment become available for NUTS 2 and NUTS 3 regions, an in depth analysis of the relative performance of the CENTROPE during the crisis cannot be conducted with official EUROSTAT data at the current point in time.[10] However, with data series reaching to 2007 (for GDP) and 2008 (for employment and unemployment) an assessment of the impact of enlargement is possible.

Given that the last regional development report on the CENTROPE was based on European data from 2004 – and thus could not consider the impact of enlargement, this chapter compares the economic development of this region in the years since enlargement to the time period before enlargement in order to explore whether there have been noticeable changes in the economic performance of the CENTROPE regions in the first three years since enlargement. Furthermore, we use data extrapolated by Cambridge Econometrics for the years 2008 and 2009 to provide a first assessment of the impact of the crisis as well as data on forecasts also provided by Cambridge Econometrics to obtain an assessment of the potential future development of the region.

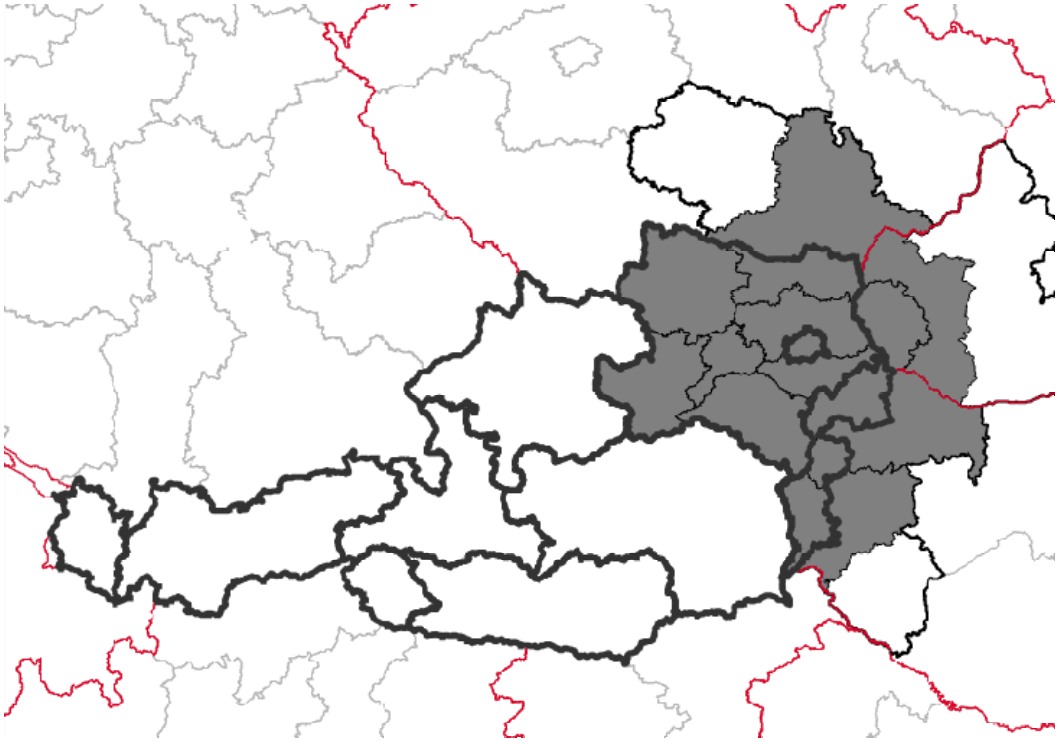
2.1 Population and Population Structure

Throughout this chapter we will use data at different levels of regional disaggregation to analyze the economic development of the CENTROPE. First in its true (and our preferred) definition, the CENTROPE on a NUTS 3 level of regional disaggregation is the territory encompassing the Austrian provinces of Vienna, Lower Austria and Burgenland, the Czech Region of South Moravia, the Slovak self-governing regions of Bratislava and

[10] With respect to this issue the reader has to be referred to the country studies collected in chapters 4 to 7 of this report.

Trnava region as well as the Hungarian counties of Györ-Moson-Sopron and Vas (see Map 2.1).

Map 2.1: The CENTROPE Region according to NUTS 3 definition



Note: CENTROPE countries=Austria, Czech Republic, Slovakia, Hungary

As can be seen from Table 2.1, the CENTROPE is a territory that covers 44.500 km^2 and has around 6.6 mio. inhabitants with the demographic differences within the region pointing to a rather varied socio-economic structure according to this definition. In particular in terms of population density a clear differentiation between the urban centres of this region such as Vienna and Bratislava and the more rural-peripheral regions (such as Burgenland) arises, while with respect to the age structure national differences dominate regional ones. Here the Slovak CENTROPE has an above average share of active aged (15-64 year old) residents at the expense of both low shares of youths (up to 15 year olds) and the older citizens (64 and older). The Austrian CENTROPE by contrast is characterized by low shares of active aged and high shares of older citizens, while the

Hungarian and Czech CENTROPE are located somewhere in between, with intermediate shares of the active aged as well as of older citizens in the population.

Table 2.1: Population and population structure of the CENTROPE 2008 (NUTS 3 level)

	Area* km^2	Population	Share females (%)	Share aged 15 or less (%)	Share aged 15-64 (%)	Share aged 65 or more (%)
South Moravia	7,196.3	1,140,534	51.3	13.9	70.9	15.2
Györ-Moson-Sopron	4,208.5	444,384	51.7	14.6	70.0	15.4
Vas	3,336.1	261,877	52.0	14.1	69.5	16.3
Burgenland	3,965.5	281,185	51.0	13.9	66.5	19.7
Lower Austria	19,177.7	1,596,538	51.0	15.6	66.3	18.2
Vienna	414.7	1,674,909	52.2	14.4	69.2	16.4
Bratislava region	2,052.6	610,850	52.6	12.9	74.6	12.5
Trnava region	4,147.2	557,151	51.3	14.4	73.5	12.1
CENTROPE	44,499.0	6,567,428	51.6	14.4	69.6	16.0
EU 27	4,403,356.7	497,670,577			67.3	17.0

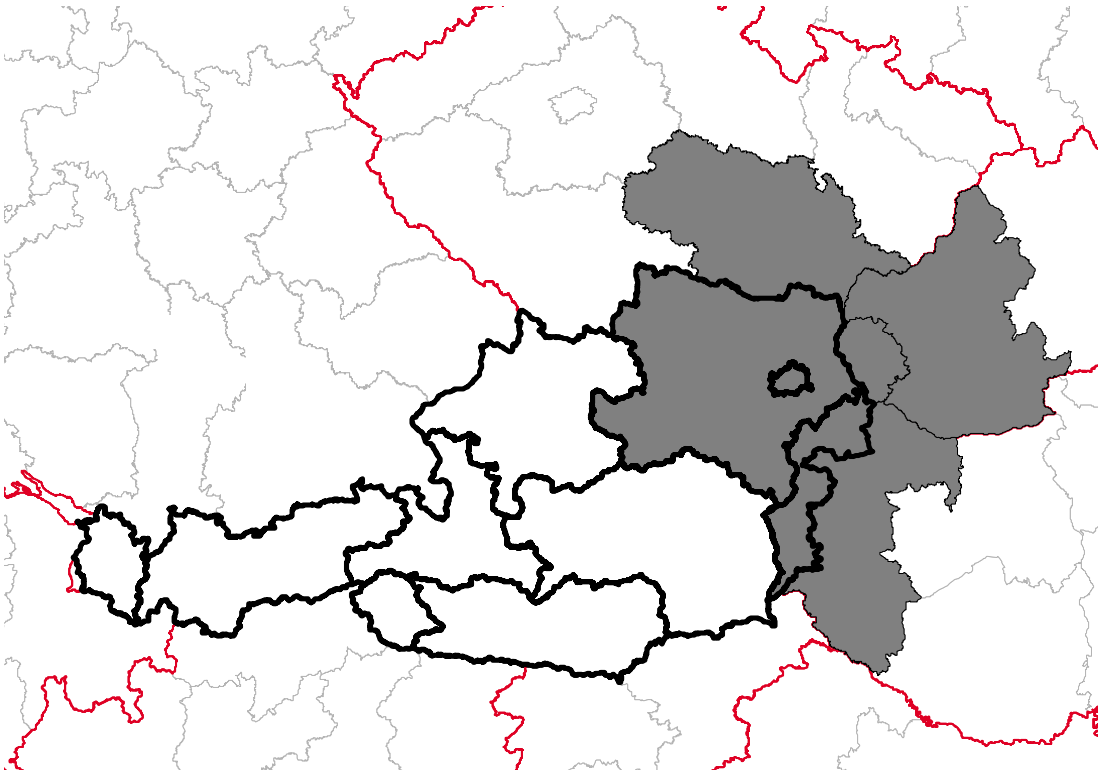
Source: Eurostat. Notes: Table reports population on January 1st, differences to overall EU population on account of exclusion of French overseas territories, * data for 2006 (last date for complete data for EU 27).

A second definition of the CENTROPE we use – for cases where NUTS 3 level data are not available - is that of the CENTROPE at a NUTS 2 level. This encompasses the regions of Vienna, Lower Austria, Burgenland, Jihovýchod (South-East), Bratislavský kraj (Bratisava), Západné Slovensko (Western Slovakia) and Nyugat-Dunántúl (West-Transdanubia) and is displayed in Map 2.2. According to this definition the CENTROPE has an area of. 66000 km^2 and a population of approximately 8.3 mio. inhabitants in 2010. As can be seen from Table 2.2, which presents data from the EUROSTAT population forecasts not available on a NUTS 3 level, the population of the CENTROPE is not expected to decline until 2020 but should amount to about 8.7 mio. in 2030. The reason for this is an expected increase in population in the Austrian CENTROPE (from 3.6 in 2010 to 4.1 million inhabitants in 2030) on account of increased immigration.[11] By contrast population is predicted to decline slightly among the new member state regions of the CENTROPE in the period 2010 to 2020 in West Transdanubia and Western Slovakia, while it is predicted to increase in Bratislava region and the Czech Southeast. From 2020

[11] It should be noted, however, that the EUROSTAT population forecasts presented here do not always accord to national forecasts, due to differences in methodology and point in time at which forecasts were made.

to 2030 population is predicted to decrease in all of the new member state regions of CENTROPE, with demographic decline being most pronounced in West Transdanubia and Western Slovakia.

Map 2.2: The CENTROPE Region according to NUTS 2 definition



Note: CENTROPE countries=Austria, Czech Republic, Slovakia, Hungary

Thus while demographic decline – at least according to the forecasts of EUROSTAT – seems to be a problem mainly for the new member states part of the CENTROPE but not for the Austrian part, aging of the population is a phenomenon that is common to all regions of CENTROPE. As shown in Table 2.3 according to the population forecast by 2030 over one fifth of the population in CENTROPE will be 65 years or older, while the share of active aged will be 64.2%.

Table 2.2: Population forecasts the CENTROPE 2020 and 2030 (NUTS 2 level, total population of the region 2010=100)

	2020	2030	2020	2030	2020	2030
South-East	101.5	100.4	101.6	100.4	101.4	100.5
West-Transdanubia	99.0	96.8	99.0	96.9	99.0	96.7
Burgenland	102.1	104.6	103.1	106.0	101.2	103.4
Lower Austria	104.8	110.0	105.2	110.3	104.5	109.7
Vienna	109.0	116.9	110.2	118.6	107.9	115.3
Bratislava region	102.8	101.7	102.7	101.3	102.9	102.1
Western Slovakia	99.5	96.8	99.3	96.3	99.6	97.2
CENTROPE	103.1	104.7	103.4	105.0	102.8	104.4

Source: Eurostat. Note: EU 27 data missing on account of missing country observations. Table reports average annual population

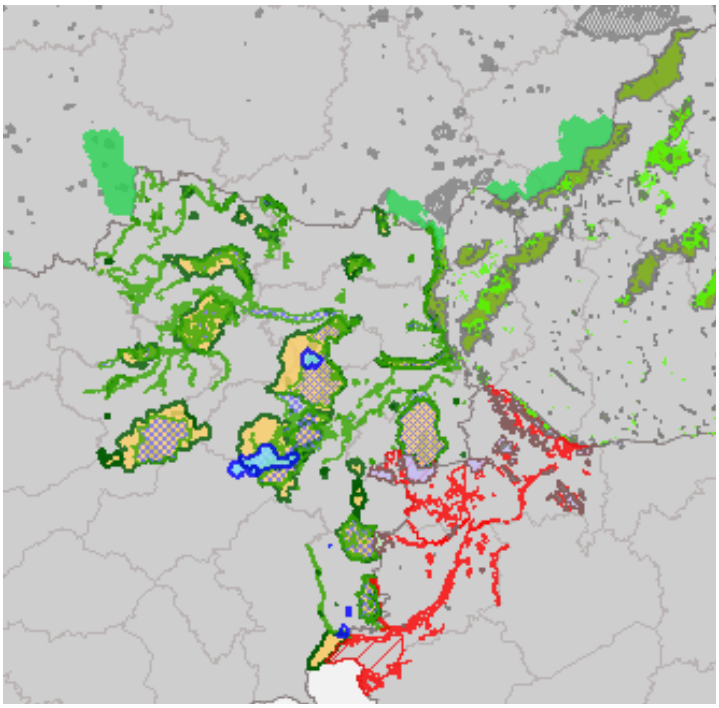
Table 2.3: Predicted Age Structure according to Population forecasts in the CENTROPE (2020 and 2030 in % of total population, NUTS 2 level))

	2020			2030		
	under 15	15-64	65 or older	under 15	15-64	65 or older
South-East	15.3	65.1	19.6	13.5	64.2	22.3
West Trandanubia	13.8	65.7	20.5	12.5	64.2	23.3
Burgenland	12.7	65.0	22.3	12.2	59.9	27.8
Lower Austria	14.7	64.8	20.4	14.2	61.0	24.8
Vienna	14.9	68.4	16.8	15.3	65.8	18.9
Bratislava region	14.0	68.4	17.6	11.8	66.7	21.5
West Slovakia	12.8	69.4	17.8	11.1	65.7	23.2
CENTROPE	14.2	67.0	18.8	13.3	64.2	22.5

Source: Eurostat. Note: EU 27 data missing on account of missing country observations. See table 1.1 for current structure. Data is based on annual average population.

In addition, the CENTROPE is also characterized by large number natural sites of high environmental and potentially also touristic value, many of them located directly at borders. This as well as the high population density, the rapid economic development and the fact that some of the most important sites are located directly between two large capital cities repeatedly give rise to conflicting interest with respect to land use patterns, which repeatedly pose a challenge to cross-border spatial planning and cross-border policy co-ordination.

Map 2.3: Areas with protected natural environment in CENTROPE



Source: CENTROPE Map, PGO; Note: Figure shows national and nature parks, Nature and landscape sanctuaries, UNESCO biosphere reserves and Nature protected areas as well as water preservation areas and landscape protected areas in CENTROPE

2.2 Economic Growth and GVA per Capita

Consideration of the recent economic development of regional GDP per capita purchasing power standards in CENTROPE suggests that the fundamental facts characterising the regional disparities in CENTROPE, already implied by some demographic characteristics, have remained largely unchanged both in the time period preceding as well as since enlargement. Due to the legacies of the communist regimes the main dividing line within the region was and still is the division between the new member states and Austria: While in the Austrian parts per capita GDP approaches or exceeds the EU average in all CENTROPE regions but Burgenland, all of the CENTROPE regions in the new member states - except for Bratislava region – still qualify for objective 1 status in terms of cohesion policy; their GDP per capita is much below the EU 27 average. In the richest region of CENTROPE (Vienna) GDP per capita was at 163% of the average, in the poorest region

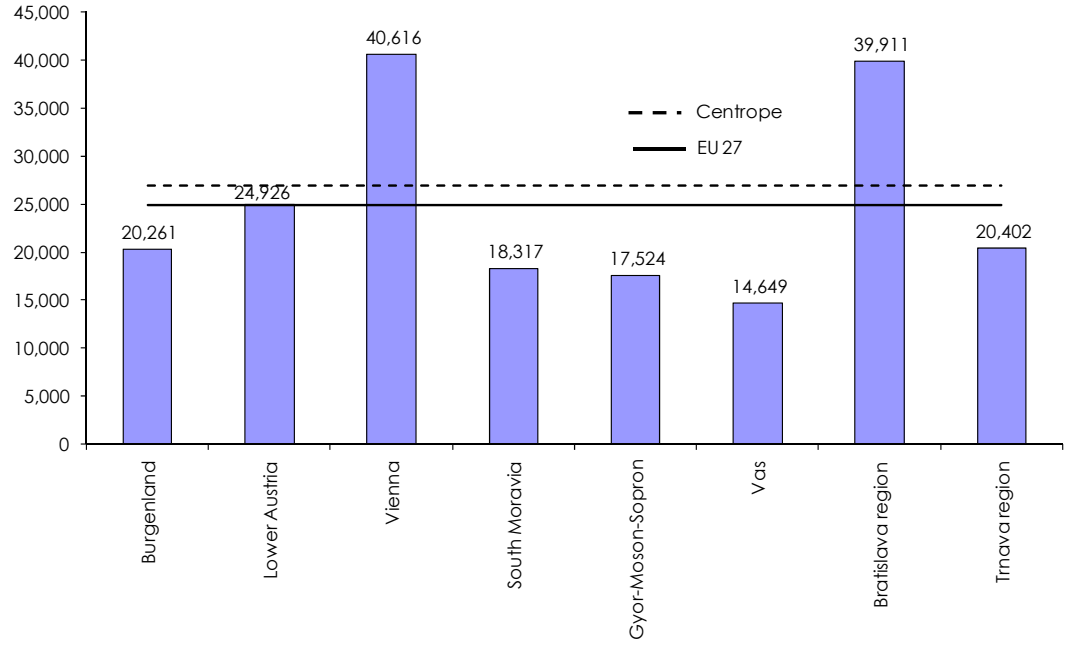
(Vas) it was at 59% of the average (see Figure 2.1). In addition throughout the complete observation period a second important differentiation characterising the CENTROPE is that of urban centres versus rural regions. For instance the capital city of Bratislava in 2007 could claim a per-capita-GDP that was higher than that of all the Austrian regions (except Vienna) and was also above the EU average by 60%. This made Bratislava region the 13th richest NUTS 2 region in terms of GDP per capita at purchasing power parity in the EU 27 in 2007 (just one rank behind Vienna which is 12th). At the same time, Burgenland, has been an Objective I region until recently and its GDP per capita is not only below that of the EU average but also below that of Trnava and Bratislava region in Slovakia.

These relatively stable main lines of differentiation within the CENTROPE should, however, not mask the substantial structural and economic change experienced by this region in the last decade. In particular three major stylized facts mark the development in the period since the year 2000:

- More rapid growth than in the EU-average resulting in a higher than average GDP per capita for the region as a whole – As an aggregate since the turn of the century GDP per capita at purchasing power standards (PPS) in CENTROPE grew faster than the EU average. This has resulted in a level of GDP per capita for the region that is higher than the EU average. While in 2004 the per capita GDP at PPS was 9% higher than that of the EU 27, in 2007 the average GDP per capita of the CENTROPE was € 2.700 (or 11%) higher than the EU average. Thus from a European perspective the CENTROPE is an above average income region.
- Increasing equality between the parts of CENTROPE in the new member states and Austria – Aside from high aggregate growth the region has also experienced substantial internal convergence. This tendency existed already before enlargement but gained in force on account of the rapid economic growth of Slovak CENTROPE regions since then. In the pre-accession period the growth rate of nominal GDP at market prices of the fastest growing NMS region of CENTROPE exceeded that of the fastest growing Austrian region by 4 to 7 percentage points. In the period since 2004 average annual growth rates in the Slovak regions exceeded those of the Austrian CENTROPE by between 9-12 percentage points. Those of South Moravia exceeded those of Austrian regions by at least 3 percentage points and only West-Transdanubian regions of CENTROPE grew slower than the fastest growing Austrian

regions on account of the increasing economic problems of Hungary, with in particular Vas showing slow growth. Thus the region has experienced substantial internal convergence in terms of GDP per capita at purchasing power parities, with the difference between the poorest (new member state) region and the richest Austrian regions (Vienna) reducing from 122% of the average in the year 2000 to 93% in the year 2007.

Figure 2.1: GDP per capita 2007 at PPS by NUTS 3 regions in the CENTROPE

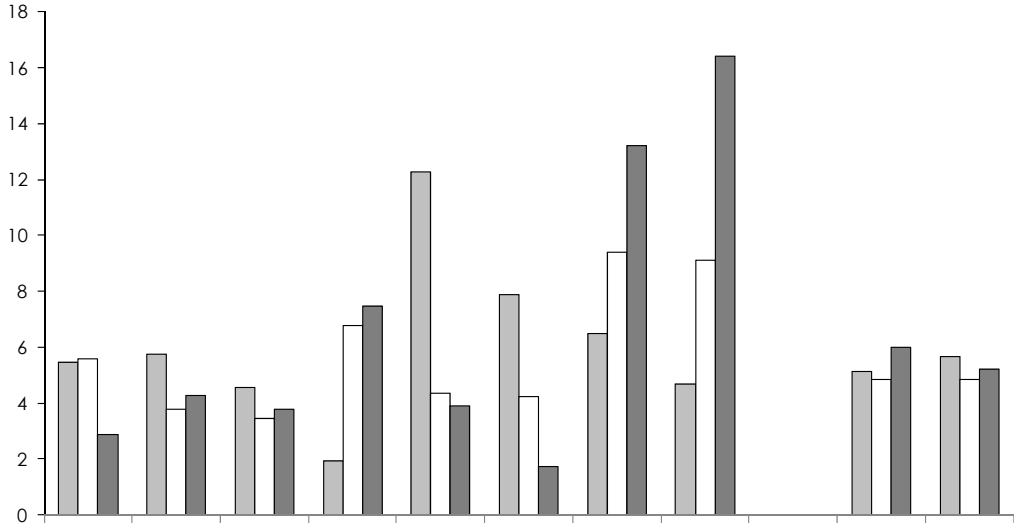


Source: Eurostat. Note: PPS = Purchasing Power Standards.

- An increasing differentiation between capital city and other regions in particular in the new member states. - At the same time as the division line between Austrian and new member state regions in CENTROPE is becoming increasingly blurred, the second division line – between large urban agglomerations, industrial regions and rural–peripheral regions – is becoming increasingly important. Again to exemplify – in the year 2000 the difference in GDP levels between Bratislava region as the prime example of an urban agglomeration in the new member states and the city of Vienna was € 14.500, while the difference between the richest and the poorest new member state region amounted to € 10.700. By 2007 this relationship had changed

fundamentally. GDP per capita in Bratislava region was only € 700 lower than in Vienna but over € 25.000 higher than in the poorest new member state region.

Figure 2.2: Nominal GDP growth in the CENTROPE by NUTS 3 regions 1995-2007 (Average annual change in %)



	Burgen-land	Lower Austria	Vienna	South Moravia	Gyor-Moson-Sopron	Vas	Bratislava region	Trnava region		Centrope	EU average
1996/2000	5.5	5.8	4.6	2.0	12.3	7.9	6.5	4.7		5.1	5.7
2000/2004	5.6	3.8	3.5	6.8	4.4	4.2	9.4	9.1		4.9	4.9
2004/2007	2.9	4.3	3.8	7.5	3.9	1.7	13.2	16.4		6.0	5.2

Source: Eurostat, WIFO-calculations, Note figure shows average annual growth of GDP at market prices

- Substantial churning in the ranking of regions within CENTROPE in terms of GDP – Finally, the high dynamics in regional development within CENTROPE are also documented by the substantial changes in individual ranks of regions' GDP per capita over time. While Vienna and Bratislava region were the richest regions in CENTROPE throughout 2000 to 2007, changes in rank among the CENTROPE regions have been a common phenomenon due to the high growth rates in particular of the Slovak regions: In 2004 Trnava region was the poorest region in CENTROPE with a GDP per capita that amounted to 52% of the EU 27 average, and Vas held the second to last place (with 63% of the EU 27). At the same time all of the Austrian regions were richer than the new member state regions (aside from Bratislava region). By 2007, however, Vas was the poorest region with a GDP per capita of 58% of the EU average while

Trnava region was the fourth richest region with a level of GDP per capita that exceeded that of the Burgenland by €141.

2.2.1 Productivity

Similar developments can be observed when considering productivity.[12] Here too the CENTROPE region has developed more rapidly than the EU 27 in both the pre- and post accession period. Once more the reason for this was a very rapid catch-up process of the Slovak CENTROPE, but also of South Moravia. The Hungarian CENTROPE and Austrian CENTROPE regions experienced productivity growth that was slower than in the EU 27 in this time period. As an aggregate the CENTROPE still was a region with below average productivity levels in the EU 27 up to 2004. In 2007 it had attained productivity levels that almost exactly in accord with the EU 27 average.

In addition, as with GDP per capita, also productivity levels the differences between the new member states part of CENTROPE and the Austrian CENTROPE are diminishing. This applies in particular to the Slovak CENTROPE. While in 2002 both the Trnava region and the Bratislava region had productivity levels that were below the level of the Burgenland as the lowest productivity level region in Austria, by 2007 productivity per person employed approached the levels of Lower Austria in Bratislava region and in Trnava region the productivity per employed was higher than in Burgenland.

The productivity differences between South Moravia as well as the Hungarian CENTROPE regions and other parts of the CENTROPE, however, remain pronounced. With an average productivity per employee of between 60% and 70% of the EU 27 average, these regions are still well below the average level. On account of the persisting large difference between these regions and the remainder of the CENTROPE, the tendencies of internal convergence in CENTROPE are not as pronounced for productivity per employed as they are for GDP per capita. Although the difference between the highest to the lowest productivity region in the CENTROPE relative to the EU reduced from 76.8 percentage

[12] In this section productivity is measured as GDP at purchasing power parity per person employed. Although we would have preferred to measure productivity per hour worked this is not possible at the NUTS 3 level, due to data lacking on hours worked. Measuring productivity in this way clearly has the disadvantage that we cannot account for the trend towards part time employment that was particularly relevant in the Austrian CENTROPE in the time period considered here.

points of the EU average in 2002 to 71.0 percentage points in 2007, this is primarily due to below average productivity growth in Vienna in this period.[13]

Table 2.4: Productivity* development in the CENTROPE 2002 – 2007 by NUTS 3 region

	2007	2004	2002		2007-04	2004-02
	Absolute				Average annual growth	
South Moravia	36,936	31,581	28,330		5.4	5.6
Győr-Moson-Sopron	39,471	37,347	34,072		1.9	4.7
Vas	33,567	30,283	28,748		3.5	2.6
Burgenland	48,860	46,780	43,237		1.5	4.0
Lower Austria	57,939	53,132	48,830		2.9	4.3
Vienna	73,144	68,072	64,563		2.4	2.7
Bratislava region	57,811	43,881	40,072		9.6	4.6
Trnava region	49,287	33,793	29,640		13.4	6.8
CENTROPE	55,709	49,204	45,680		4.2	3.8
EU average	55,691	49,763	47,171		3.8	2.7
	EU =100				Change in percentage points	
South Moravia	66.3	63.5	60.1		2.9	3.4
Győr-Moson-Sopron	70.9	75.1	72.2		–4.2	2.8
Vas	60.3	60.9	60.9		–0.6	–0.1
Burgenland	87.7	94.0	91.7		–6.3	2.3
Lower Austria	104.0	106.8	103.5		–2.7	3.3
Vienna	131.3	136.8	136.9		–5.5	–0.1
Bratislava region	103.8	88.2	85.0		15.6	3.2
Trnava region	88.5	67.9	62.8		20.6	5.1
CENTROPE	100.0	98.9	96.8		1.2	2.0

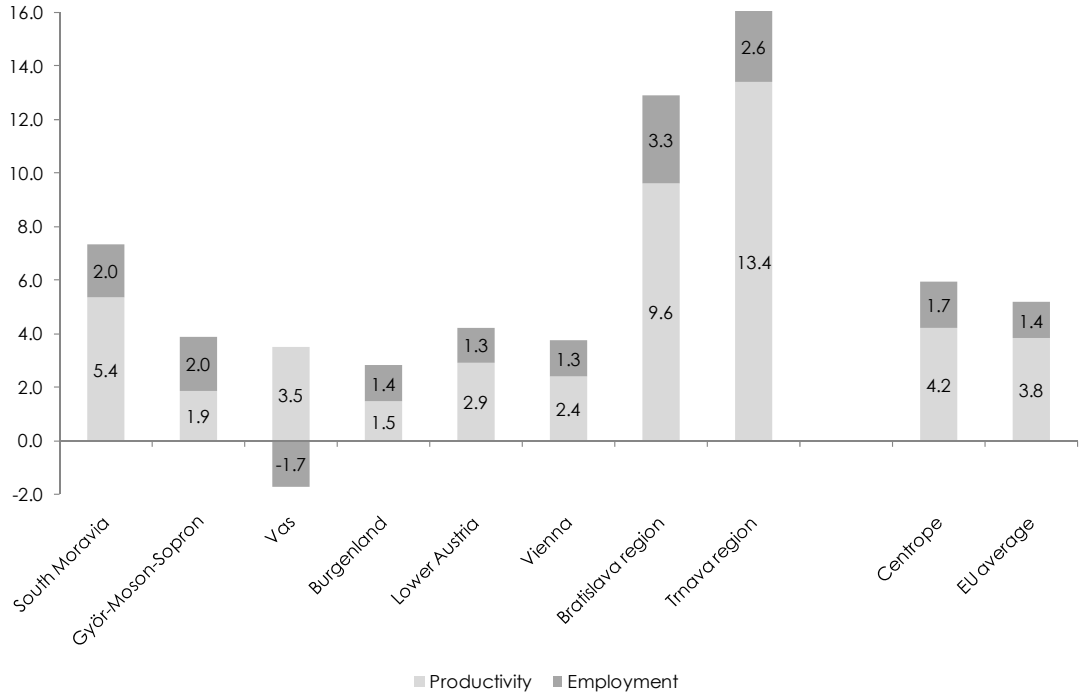
Source: Eurostat, WIFO-calculations, *GDP at market prices per person employed. Note: 2002 is the first year where data is complete for all NUTS 3 regions in the EU.

Similarly – in contrast to GDP per capita - there is also less clear cut evidence of increasing disparities in productivity between capital city regions and other regions with

[13] This may, however, be due to the increasing share of part time employment in the Austrian economy in this period (see below) which complicates productivity measurement.

respect to productivity per worker. Productivity grew by about 1.4 percentage points slower in Vienna than in the EU average and thus less than in all other CENTROPE regions but the Burgenland in the period 2004 to 2007 and productivity differentials between the Bratislava and Trnava regions are substantially lower than GDP per capita differentials.

Figure 2.3: The contribution of productivity and employment growth to GDP growth (2007 to 2004) by NUTS 3 regions of the CENTROPE (in percentage points)



Source: Eurostat, WIFO-calculations, Productivity=GDP at market prices per person employed (see also notes for table 2.4)

Productivity growth was also a more important contributor to aggregate GDP growth than employment growth in all of the CENTROPE regions except Györ-Moson-Sopron (see Figure 2.3), although employment as an aggregate also grew by more (1.7% annually) than in the EU 27 average (1.4%).[14] Once more this applies in particular to the Slovak CENTROPE where despite an average annual GDP growth rate of 13.2 in Bratislava

[14] As pointed out in the last chapter, total growth can be approximated by the sum of productivity and employment growth. Figure 3 thus decomposes aggregate GDP growth into these two components in the same way as done in the last chapter for countries.

region and 16.4% in Trnava region, employment increased by only 3.3 and 2.6 percent each year, respectively.

Table 2.5: Compensation per Employee (in € per year) by NUTS 2 regions in the CENTROPE

	Levels				Average Annual Growth Rates	
	2006	2004	2000		2006-04	2004-00
Absolute						
South East	11,336	8,751	5,690		+13.8	+11.4
West Transdanubia	9,934	10,245	6,006		– 1.5	+14.3
Burgenland	31,910	30,537	28,587		+ 2.2	+ 1.7
Lower Austria	34,034	32,524	30,590		+ 2.3	+ 1.5
Vienna	42,636	40,019	37,728		+ 3.2	+ 1.5
Bratislava region	12,398	9,635	6,756		+13.4	+ 9.3
Western Slovakia	7,956	6,276	4,465		+12.6	+ 8.9
CENTROPE	22,131	20,275	17,724		+ 4.5	+ 3.4
Purchasing power corrected						
South East	18,664	16,593	12,328		+ 6.1	+ 7.7
West Transdanubia	16,743	17,236	12,645		– 1.4	+ 8.1
Burgenland	30,361	29,441	27,726		+ 1.6	+ 1.5
Lower Austria	32,400	31,268	29,575		+ 1.8	+ 1.4
Vienna	40,581	38,586	36,388		+ 2.6	+ 1.5
Bratislava region	22,420	18,799	15,714		+ 9.2	+ 4.6
Western Slovakia	14,360	12,238	10,303		+ 8.3	+ 4.4

S: Eurostat Note: Top panel of table reports figures at market prices, bottom panel reports compensation per employee adjusted by the ratio of GDP at market prices to GDP at purchasing power standards.

2.2.2 Compensation of Employees

While there is some evidence of convergence in terms of GDP per capita and productivity in the CENTROPE, evidence on the convergence of wage levels is somewhat more mixed. Focusing on the indicator of (nominal) compensation per employee[15] (see Table 2.5) suggests that there are still substantial wage differentials in the region. Average annual compensation per employee is still substantially higher (between € 32.000 in Burgenland and € 43.700 in Vienna) in the Austrian CENTROPE than in the new member state region

[15] This indicator is only available on the NUTS2 level of regional disaggregation and here only up to the year 2006.

where it ranged between € 8.000 in Western Slovakia and € 12.400 in Bratislava region in 2006.

These estimates of wages are calculated at current exchange rates and thus do not account for the substantial purchasing power differences between the new member states and Austria. Adjusting compensation per employee by the differences in purchasing power parity as in the bottom panel of table 2.5, however, suggests that purchasing power differences can explain only part of the wage differentials. Even after this correction the average employee in the regions with the highest purchasing power adjusted compensation per employee of the new member state regions (Bratislava region) earns only about two thirds of the amount earned by an employee in the Austrian CENTROPE with the lowest purchasing power adjusted compensation per employee (Burgenland).

Thus with respect to wage levels a clear differentiation between new member state regions of CENTROPE and Austrian regions still persists. There are, however, at least some signs of convergence. In almost all new member state regions of the CENTROPE, purchasing power adjusted compensation per employee grew substantially more rapidly than in the Austrian CENTROPE in both periods (i.e. 2000 to 2004 and 2004 to 2006) and the ratio between the region with highest compensation per employee (Vienna) and the region with the lowest (West Slovakia) was 2.8 in 2006, while it had been 3.5 in 2000. The only exception to this rule is West Transdanubia where purchasing power adjusted compensation per employee has fallen in the period 2004 to 2006.

2.2.3 Forecasts

Until 2007 the CENTROPE as a whole can thus be characterized as a region with high growth rates of GVA, employment and productivity whereby all indicators showed tendencies of convergence and little sign of any negative impact of enlargement on regional development on any part of the region.[16] However, at the end of 2008 and throughout 2009, the world wide economic crisis also hit CENTROPE. As mentioned in the introduction to this chapter, the regional impact of this crisis cannot be assessed on the basis of official EUROSTAT data at the current point in time. To present at least some appraisal of this event on the CENTROPE, we therefore use forecasts of GDP and

[16] The only part of the region that showed worse development in 2004 to 2007 relative to the periods before were the Hungarian regions. This, however, has to be attributed to the increasing macro-economic problems of the Hungarian economy in this time period rather than to the process of integration.

employment in these regions for the period 2008-2014 provided by Cambridge Econometrics.

Table 2.6: Forecast employment and GVA growth 2008 – 2014 (in %, NUTS 2 level)

	2008	2009	2010	ø 2011-14
GVA Growth[1)]				
EUROPEAN UNION	+0.7	– 4.4	+1.1	+2.3
CENTROPE	+2.8	– 3.5	+1.8	+2.4
South Moravia	+2.8	– 4.1	+0.7	+3.4
Gyor-Moson-Sopron	+3.4	– 9.3	+1.2	+3.5
Vas	+0.3	–10.0	–1.4	+0.8
Burgenland	+2.7	– 3.5	+1.2	+1.5
Lower Austria	+2.9	– 3.8	+2.0	+2.1
Wien	+1.7	– 2.5	+1.7	+2.2
Bratislava region	+8.6	– 4.0	+3.6	+4.0
Trnava region	+7.3	– 8.2	+2.9	+4.3
Employment Growth				
EUROPEAN UNION	+0.9	–1.9	–1.1	+1.2
CENTROPE	+1.2	–1.3	–0.6	+1.0
South Moravia	+1.0	–1.2	–1.5	+0.7
Gyor-Moson-Sopron	–2.1	–3.7	–0.6	+1.2
Vas	–2.9	–6.7	–1.8	+1.1
Burgenland	+2.2	–0.9	–0.6	+0.5
Lower Austria	+1.8	–0.9	–0.5	+0.7
Wien	+1.1	–0.5	–0.3	+0.9
Bratislava region	+3.0	–0.3	0.2	+1.9
Trnava region	+1.7	–4.8	–0.2	+1.7

S: Cambridge Econometrics 1) forecast growth rate of GDP at market prices, ø=average annual values

According to these data the impact of the crisis on the CENTROPE as an aggregate was slightly less pronounced than in the rest of Europe. GDP and employment continued to grow more rapidly in CENTROPE than in the EU 27 in 2008 and both GDP and employment are expected to have declined by less than the EU average in 2009.

Furthermore, expected growth rates of GDP are higher for 2010 and also – albeit to a lesser degree - the period after this. Employment in 2010 is expected to decline by slightly less in the CENTROPE than in the EU 27 and will then grow at a faster rate.

This said, however, there are also substantial differences in the development of individual regions. In this respect the forecasts suggest that in particular the Hungarian parts of the CENTROPE have been particularly hard hit by the economic crisis in 2009, with GDP losses approaching double digit levels and employment reductions of between -6.7 to -3.7 percent. Aside from this the forecasts for the Trnava region suggest that GDP and employment also declined by more than the EU average: But here long term growth prospects are above the EU average with the forecast GDP-growth in this region exceeding the EU level both for 2010 as well as for the period until 2014 and employment declining slightly less than in the EU 27 in 2010 and then once more growing faster than the EU average.[17]

The Austrian CENTROPE regions as well as Bratislava region, according to these forecasts, were substantially less affected by the crisis than the EU average. Here GDP is forecasted to have declined by between –2.5% in Vienna and –4.0% in Bratislava region in 2009, while employment losses were lower than 1% in all of these regions. The long and medium term growth forecasts, however, differ somewhat between the Bratislava region and Vienna. The Austrian regions are expected to grow about average or below average for 2010 and the period after. Bratislava region is expected to have clearly above average GDP and employment growth rates after 2010.

South Moravia, finally, is a case in-between. Here according to the forecasts, GDP declined slightly more than average and employment slightly less in 2009 but recovery is also expected to be somewhat slower than in the EU 27. In 2010 GDP is expected to grow slower than in the EU and employment to decline somewhat more. Above average growth of GDP is expected only for the period after 2010, while employment growth is expected to remain below average as well after 2010 on account of continuing productivity growth.

In sum – at least judging from existing forecasts and despite some variation among countries and regions – the crisis of 2009 is not expected to have long lasting effects on the growth performance of CENTROPE as an aggregate. As prior to the recession a

[17] Note that the forecasts for the Hungarian region may be overly pessimistic since they do not take into account recent investment plans of the automobile industry in this region.

higher than average growth of GDP and employment is expected and also the tendencies of internal convergence are by and large expected to continue until 2014, a continued reduction of differences between the new member state and Austrian regions can be expected also in the future.

2.3 Labour Market Development

2.3.1 Unemployment Rates

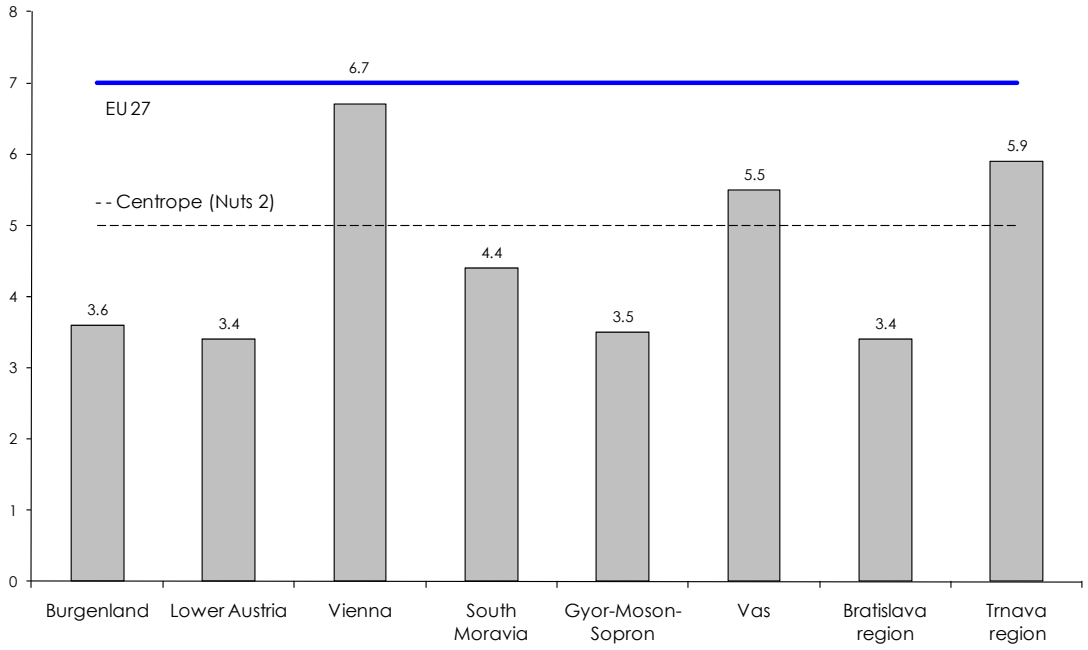
The increasingly vanishing national differences among the CENTROPE countries and the improving economic situation relative to the EU average are also documented by the development of the most important indicators of the labour market situation such as the unemployment and employment rates. In a European context, CENTROPE is a region with low unemployment rates and slightly above average employment rates. In 2008 all of the NUTS 2 regions of CENTROPE had unemployment rates below the EU 27 average. Vienna, Vas and Trnava region had unemployment rates between 5% and 7%, with Vienna showing an unemployment rate of 6.7% and Trnava region – which still had double digit unemployment rates in 2004, – of 5.5%. All other CENTROPE regions had unemployment rates substantially below the EU average, ranging between 3% and 4% (see Figure 2.4).

Therefore relative unemployment rates follow to an even lesser degree than GDP per capita the traditional lines of differentiation between Austria and the new member states. In particular there is no clear indication that the CENTROPE regions of the new member states of the European Union unambiguously have higher or lower unemployment rates than the Austrian CENTROPE regions. Both the region with the lowest unemployment rate (Lower Austria, which together with the Bratislava region, had an unemployment rate of 3.4% in 2008) and the region with the highest unemployment rate in CENTROPE (Vienna, 6.7%) are located in Austria. In addition there is also no clear indication of a general urban – rural unemployment rate differential in CENTROPE. Vienna is the region with the highest unemployment rate in CENTROPE, while Bratislava region is one of the regions with the lowest.

When considering the dynamics in unemployment rates in the CENTROPE (see Figure 2.5), tendencies of convergence can be found as well. The region was characterized by internal convergence and an improvement of the already good relative position in the EU since enlargement with respect to unemployment. This is primarily due to the extremely positive labour market development of the Slovak CENTROPE, in particular in Western

Slovakia, which in turn is a consequence of the rapid catch-up process of this region. The unemployment rate of Western Slovakia[18] decreased by 12.2 percentage points from an all time high of 18.6% in 2001, to 6.4% in 2008. Similar positive developments are found for Bratislava region.

Figure 2.4: Unemployment rate 2008 (In %, NUTS 3 level)



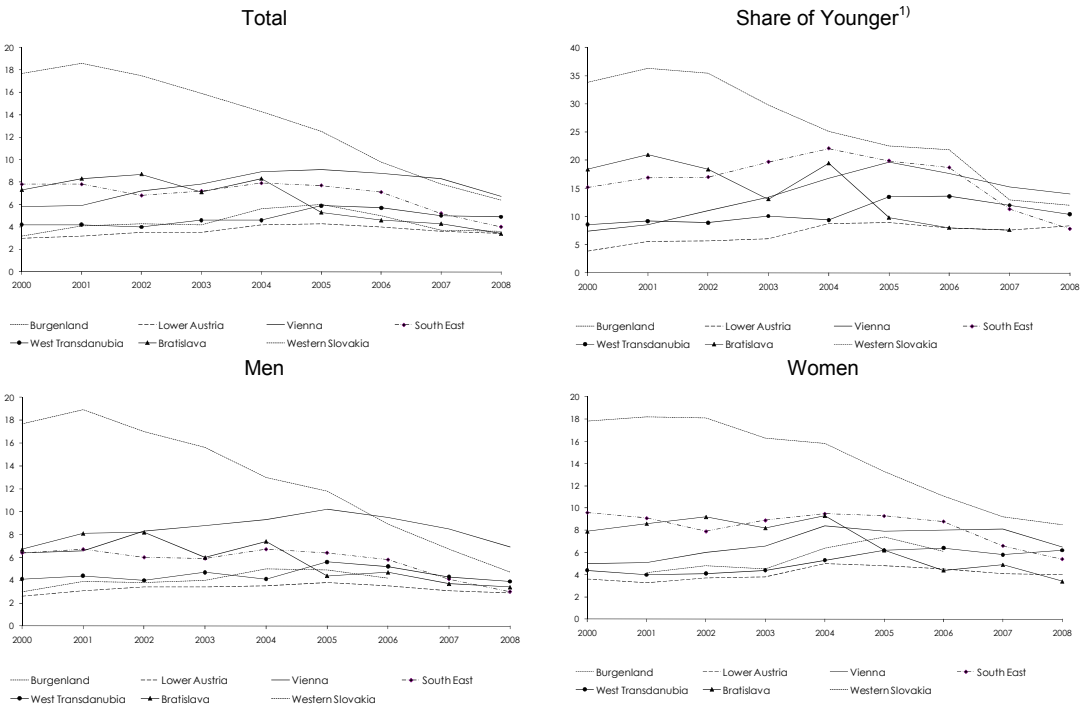
Source: Eurostat, Note average values for CENTROPE calculated using NUTS 2 level data, on account of missing data on employment at NUTS 3 level. Table reports unemployment rate according to ILO/ELFS definition.

But not only the Slovak regions of CENTROPE experienced substantial declines in unemployment while the decline in the Czech and Austrian CENTROPE was somewhat more modest. In the Czech south-east, unemployment declined by 2.7 percentage points in the time period from 2004 to 2008. In the Austrian CENTROPE, by contrast, on account of the dynamic development of labour supply (in particular migration from Germany and

[18] Note that comparable data on the development of regional unemployment rates in the time period since the year 2000 for the EU are available on a NUTS2 level only. This in all likelihood leads to a serious overestimation of the decline in unemployment in Trnava, since this region has performed substantially better than all other NUTS2 regions of Western Slovakia in all available indicators since 2000.

female labour supply – see also chapter 3), the unemployment rate in Vienna, which on account of intensive industrial structural change traditionally has one of the highest unemployment rates among the Austrian regions, declined by 2.2 percentage points in the years after accession (i.e. from 2004 to 2008) and Lower Austria – starting from a substantially lower level of unemployment – experienced a reduction of 0.8 percentage points. In Burgenland the unemployment rate declined by 2.0 percentage points.

Figure 2.5: Unemployment rates and their development in CENTROPE (In %, NUTS 2 level)



Source: Eurostat 1) share of those aged 15-24 in total unemployment. Table reports data according to ILO/ELFS definition.

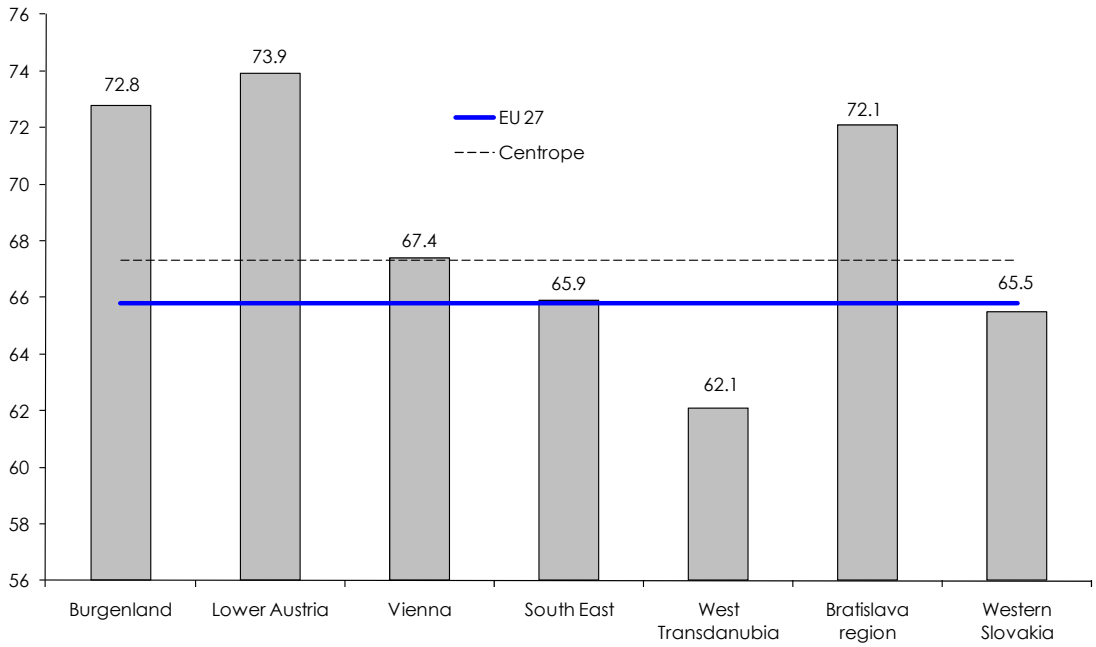
The only NUTS 2 region of the CENTROPE which experienced an increase in unemployment rates since EU accession was West-Transdanubia, which at the beginning of the 2000's still was the region with the lowest unemployment rate in the CENTROPE. Here the unemployment rate increased to 5.9% in the years 2004 to 2005 and did not decline as clearly as in the other CENTROPE regions in the subsequent economic boom. In 2008 thus the unemployment rate in West-Transdanubia was by 0.3 percentage points higher than in the year of accession. The reason for this is to be found in the weaker overall economic development of Hungary in the post accession period as well as

substantial internal restructuring in particular in the southern parts of this region (i.e. in Zala and Vas – see chapter 5).

2.3.2 Employment Rates

Employment rates are also higher in the CENTROPE average than in the EU average and only one NUTS 2 region (West Transdanubia 62.1%) had employment rates that were lower than the EU average in 2008. In addition – as with unemployment rates - with employment rates, differences between regions of the new member states and Austria as well as between urban centres and other regions are far less pronounced than for GDP per capita. Both the region with the highest employment rate (Bratislava 72.1%) as well as the region with the lowest employment rate (West Transdanubia 62.1%) are located in the new member states of the EU 27 and the employment rate of Vienna is just above the CENTROPE average (and the fourth highest among the CENTROPE regions, 67.4%) but clearly above average in Bratislava region (72.1%).

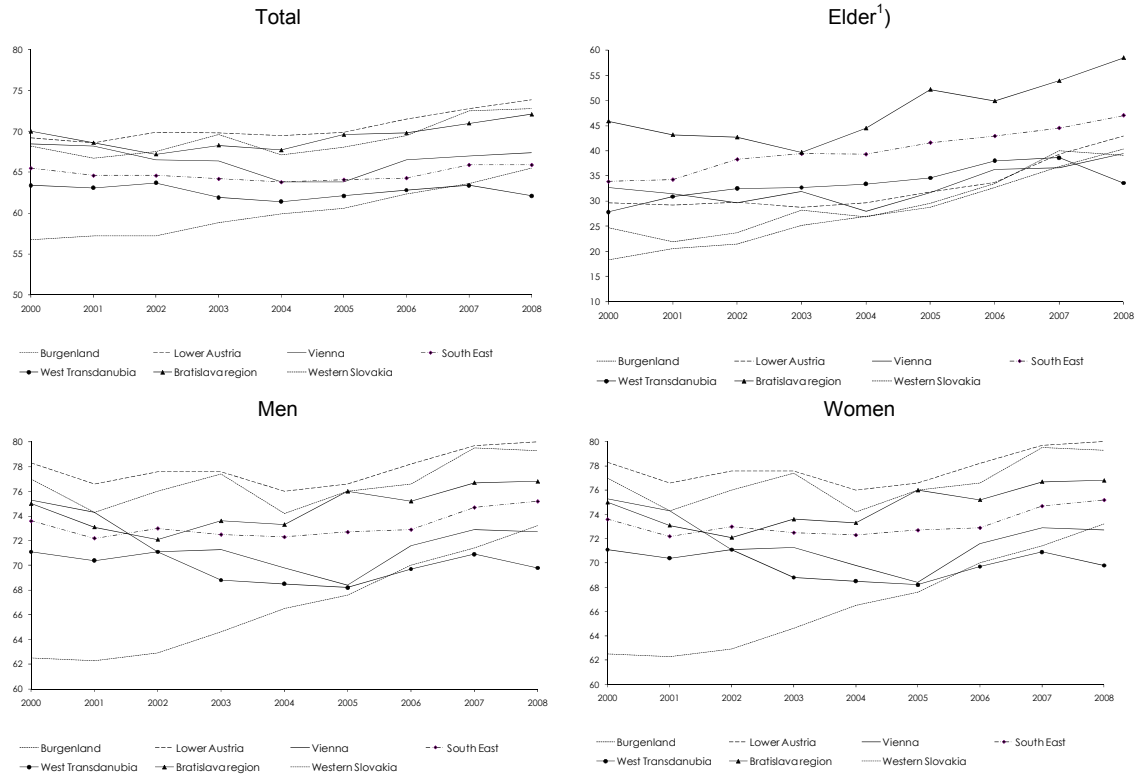
Figure 2.6: Employment Rate 2008 (In % of active aged 15-64 years old population, NUTS 2 level)



Source: Eurostat. Note: Figure report employed as a share of active aged (15-64 year old) population. Table reports data according to ILO/ELFS definition.

Figure 2.7: Employment rates and their development in CENTROPE (In % of active aged 15-64 years old population, NUTS 2 level)

In %

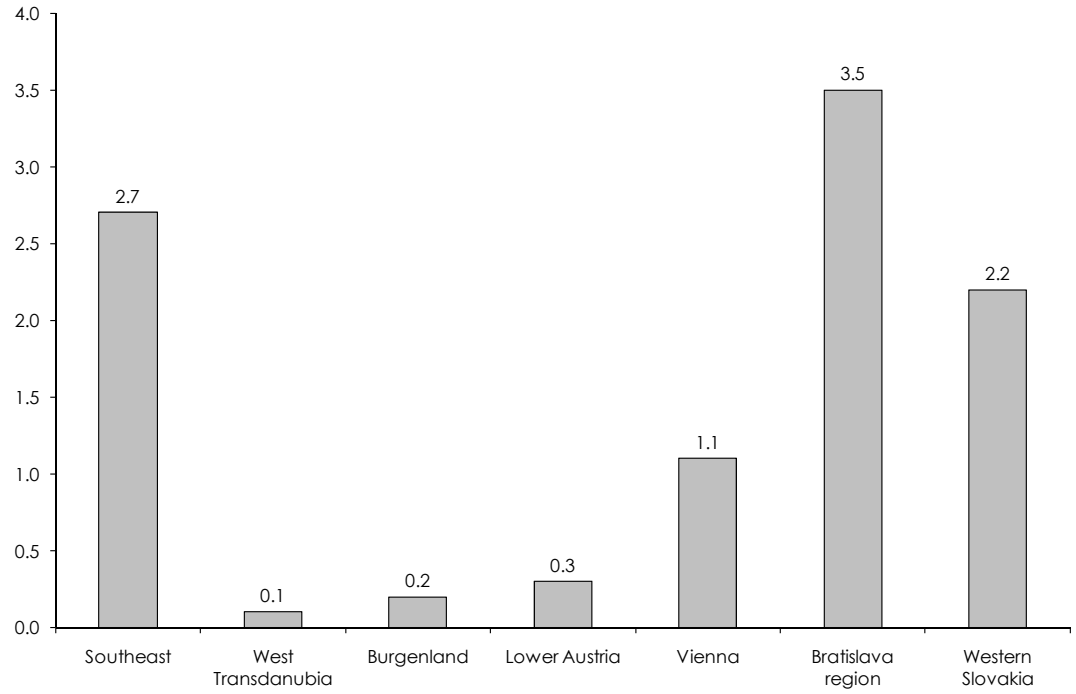


Source: Eurostat, Note: Figures report employed as a share of active aged (15-64 year old) population. – [1]) Share of 55-64 year old employed in population aged 55-64. Table reports data according to ILO/ELFS definition.

However, in contrast to unemployment rates employment rates, showed a tendency of divergence in the period since 2004. Once more the underlying reason for this is the excellent development of the labour market in the Slovak CENTROPE and the poorer development in the Hungarian CENTROPE. Due to these diverging trends the employment rate in Bratislava region, which was already the highest in the CENTROPE in 2004, increased, while that in Western Transdanubia, which had the second lowest rate already in 2004, stagnated. This increase in employment rates in Bratislava region is primarily due to a 14 percentage point increase in the employment rate of the older citizens (55 to 64 year olds) and an increase in female employment rates. In West-Transdanubia the employment rate of the older citizens (+0.2 percentage points) and

females (+0.2 percentage points) stagnated while that of males grew by +1.3 percentage points.

Figure 2.8: Average annual growth rate of hours worked 2004 – 2007 (in %, NUTS 2 level)



Source: Eurostat. Note based on hours worked in main job

The largest increases in employment rates since 2004 can, however, be found in Burgenland (+5.7 percentage points) and in Western Slovakia[19] (+ 5.6 percentage points). In Western Slovakia this increase was primarily due to an increase in the employment rate of older citizens (13.6 percentage points), while the employment rate of females (+4.5 percentage points) increased by slightly less than that of males (+6.7 percentage points). In Burgenland also the employment rate of older citizens increased substantially (+12.3 percentage points) but, in contrast to Western Slovakia, women (+6.4 percentage points) increased their employment rate by more than men (+5.1 percentage points). This pattern of strongly increasing employment rates for older citizens and stronger increases in the

[19] Note that here again comparable data on the development in the time period since the year 2000 for the EU are available on a NUTS2 level only. This is likely leads to an underestimation of the employment rate in Trnava, since this region performed substantially better than all other NUTS2 regions of Western Slovakia in all available indicators since 2000.

employment rates for females than males also applies to the remaining Austrian CENTROPE region (Lower Austria and Vienna). Employment rate increases in the post accession period were however somewhat more modest in the Czech CENTROPE. The reason for this is the somewhat lower dynamics with respect to the employment rate of the elder and of females.

2.3.3 Structure of employment and unemployment

Aside from this, there are also differences in the structure of employment and unemployment among the CENTROPE regions. In particular, the share of part time employment and other atypical forms of employment is substantially higher in the Austrian CENTROPE than in the new member state regions. This has an impact on both employment as well as unemployment rate statistics, since a larger share of part time employed – all else equal – implies lower average working hours per employed. Thus for a given volume of working hours more people will be employed (and fewer unemployed) as the share of part time employment increases. Indeed when looking at the development of the hours worked in the NUTS 2 regions of the CENTROPE, labour input almost stagnated in the period 2004 to 2007 in Lower Austria and Burgenland (growing only at 0.2% and 0.3% respectively) with only Vienna experiencing substantial increases, while growth rates of the Czech and Slovak region exceeded the 2% mark throughout (see Figure 2.8).

Table 2.7: Share of part time employment in total employment in the CENTROPE regions (2008, in %, NUTS 2 level)

	Total	Male	Female
EU 27	18.2	7.9	31.0
Burgenland	21.1	5.4	40.3
Lower Austria	22.9	7.1	41.7
Vienna	23.1	12.3	35.2
South-East	5.7	2.6	9.9
West Transdanubia	3.2	1.7	5.1
Bratislava region	3.1	1.9	4.4
Western Slovakia	2.5	1.2	4.1
CENTROPE	11.6	4.8	19.9

Source: EUROSTAT. Note: Part time employment refers to the main job and is based on a spontaneous response by the respondent (except Netherlands and in Sweden)

In addition the structure of unemployment and employment rates in CENTROPE also varies substantially across the individual regions, with differences often reflecting (national) historic or institutional differences between countries. For instance given the low overall unemployment rates, the share of long term unemployed is high in many of the new member states' regions of CENTROPE and somewhat lower in the Austrian CENTROPE. Despite the two year growth phase that preceded the year 2008, the share of long term unemployed in all of the new member states regions of CENTROPE (with the exception of West Transdanunbia) still exceeded 40% of overall unemployment, while the share of long term unemployed in total employment in the Austrian CENTROPE was at or below 30% in all NUTS 2 regions (see Table 2.8).

Table 2.8: Share of long term unemployment in total unemployment in the CENTROPE regions (in %, 2005-2008, NUTS 2 level)

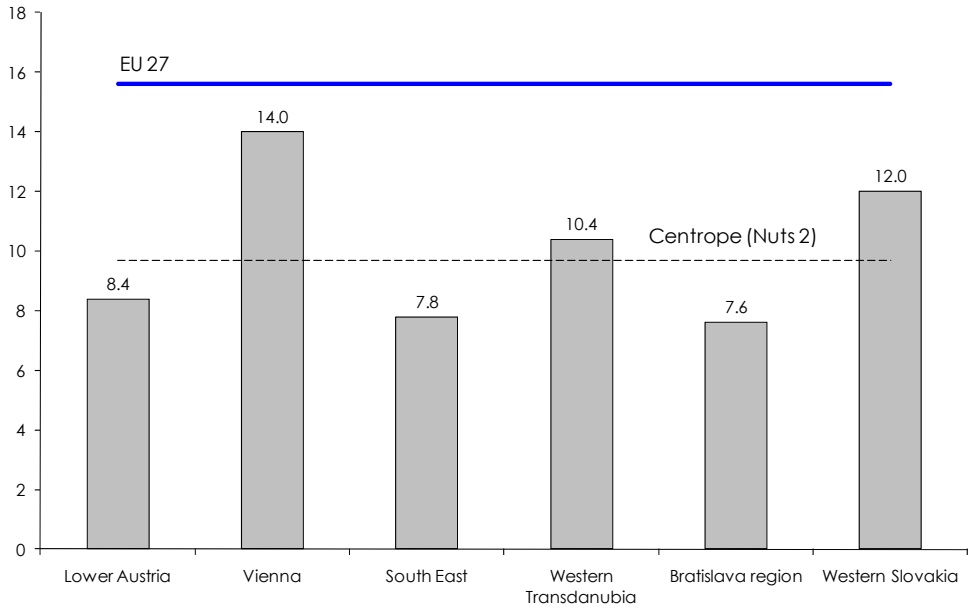
	2008	2007	2006	2005
EU 27	36.7	43.1	45.5	46.0
Burgenland	30.8	26.0	27.6	28.8
Lower Austria	29.9	29.5	27.0	27.5
Vienna	30.3	34.4	34.0	29.7
South East	47.7	52.6	52.0	50.3
West Transdanubia	39.0	44.3	47.0	40.1
Bratislava region	44.8	53.6	55.1	39.1
Western Slovakia	65.7	69.8	72.8	69.6
CENTROPE	44.5	48.7	50.6	48.4

Source: EUROSTAT. Note Table reports share of persons employed for more than one year in total unemployment

Furthermore, all new member state regions of the CENTROPE had shares of long term unemployment that exceeded the EU 27 average in 2008 while for the Austrian CENTROPE the opposite applies. For the new member states, this indicates a mismatch problem of the qualifications of the unemployed with the requirements of prospective employers, as would be expected in economies with the speed of restructuring of the new member state regions of CENTROPE and implies that one of the potential long term consequences of the increase in unemployment rates due to the crisis in 2009 may be an increase in long term unemployment. This in turn may lead to a de-qualification of the work-force and increase persistence of the overall unemployment rates. Policy activities of active labour market policy aiming to prevent (long term) unemployment and de-

qualification are thus likely to be of a very high importance in the CENTROPE in the next years.[20]

Figure 2.9: Unemployment rate of the Younger 2008 (Aged 15 to 24, in %, NUTS 2 level)

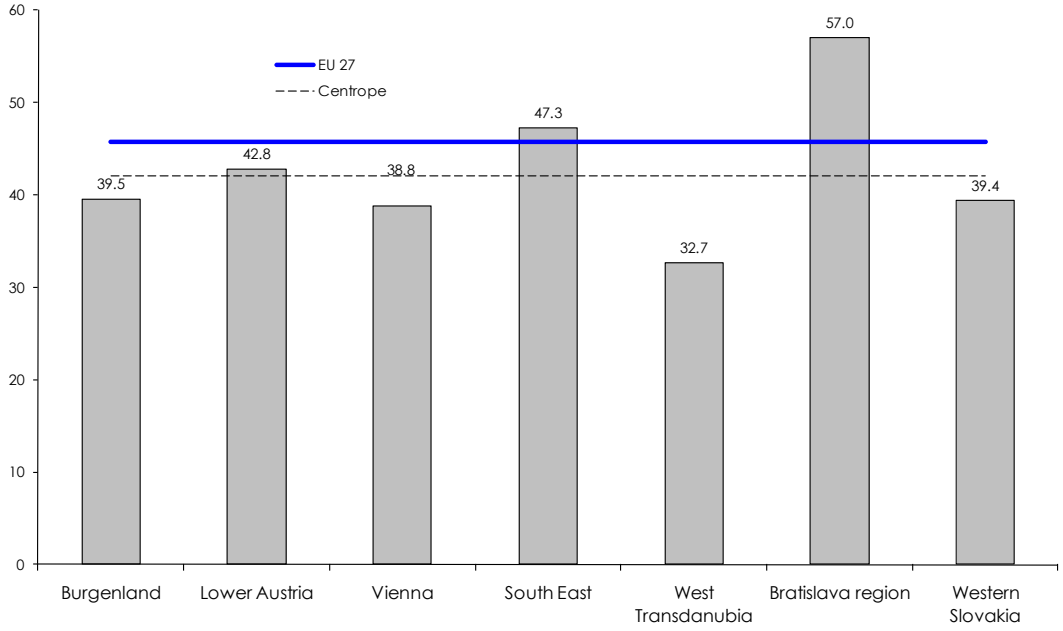


Note: Due to the small sample size for the Burgenland the youth unemployment rate for this region is not reported in Labour Force Survey data, Table reports data according to ILO/ELFS definition. Source: Eurostat.

Also despite substantial progress in recent years (see above), employment rates of the older citizens (i.e. those aged 55 to 64) are low relative to the EU 27 level in all CENTROPE regions (see Figure 2.10) except Bratislava (57%) and the Czech South East (47.3%) and were particularly low in West Transdanubia (32.7%) as well as in the Austrian CENTROPE where early retirement was particularly popular until recent changes in the pension system. Youth unemployment rates by contrast were below the EU average in all CENTROPE regions and exceed the 10% mark only in Vienna and Western Slovakia in 2008.

[20] Furthermore it should be noted that development of the service sector (which is still underdeveloped in some parts of CENTROPE) could provide workplaces for less skilled workers.

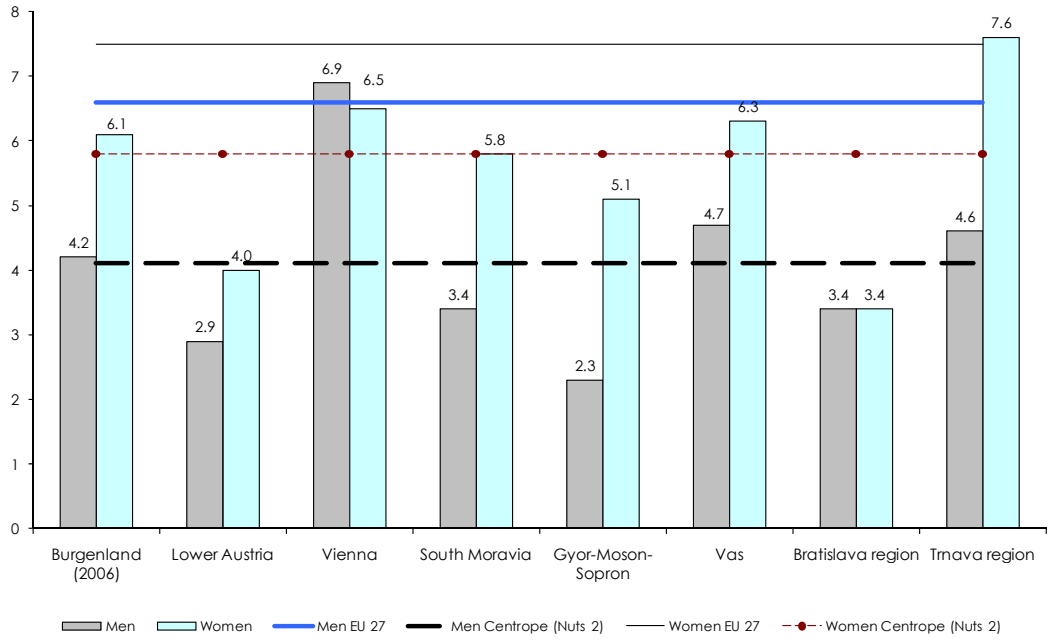
Figure 2.10: Employment Rate of Older Citizens 2008 (Employed aged 55 to 64 in population of this age, in %, NUTS 2 level))



Source: Eurostat. Table reports data according to ILO/ELFS definition.

Finally, in a number of the new member state regions of CENTROPE traditionally low gender gaps in employment rates have rapidly increased in the last years. For example in Western Transdanubia the unemployment rate of females increased by 0.9 percentage points while that of males reduced by 0.2 percentage points. Women were thus more strongly affected by the worsening labour market situation in Western Transdanubia than men. Similar tendencies of growing gender differences can be found in Western Slovakia and the Czech Southeast. This suggests that in particular the employment increase in Trnava region was primarily due to an increase in male – mostly industrial – employment. Vienna, by contrast, on account of a high share of service employment, is still the only region in the CENTROPE where unemployment rates among males are higher than among females and Bratislava region is the only other CENTROPE region where the unemployment rates of females are about equal to those of males.

Figure 2.11: Unemployment rate by gender 2008 (In %, NUTS 3 level)



Source: Eurostat. Table reports data according to ILO/ELFS definition.

2.3.4 Commuting

Finally, the limited evidence available on commuting suggests that the CENTROPE is a region where both internal (within country) and cross-border commuting rates (as a percentage of the employed at place of residence) are rather high in comparison to other EU 27 regions. In total 9.6% of the employed in the CENTROPE work in another NUTS 2 region (in the same country) and a further 1.8% of the employed at place of residence commute across country borders. By comparison, among all NUTS 2 regions of the EU 27 these percentages are 6.4% and 0.7% respectively. Furthermore the evidence also suggests that the extent of cross-border commuting has increased (by 0.5 percentage points of the employed) since enlargement in the CENTROPE, while internal commuting has reduced by the same amount.

These high rates of commuting in the CENTROPE are, however, strongly shaped by the region's geography as well as historic and institutional ties. For instance the high share of internal commuting is due primarily to Vienna's role as a major basin of attraction for

commuters in Austria, which causes Lower Austria and Burgenland (where a substantial part of commuting is also to Graz) to have very high out-commuting rates of about one quarter to one third of the employed at the place of residence. By contrast internal commuting rates in the new member state regions of CENTROPE are somewhat lower and exceed the 5% mark only in Western Slovakia on account of substantial commuting to Bratislava region.

Table 2.9: Commuting in the CENTROPE regions (in % of total employed at place of residence, NUTS 2 level)

	Working in another country	Working in another region	Working in another country	Working in another region
	2009		2004	
Burgenland	0.6	32.1	0.2	35.0
Lower Austria	0.3	26.8	0.5	27.4
Vienna	0.9	6.8	0.3	8.5
Czech South-East	0.5	2.6	0.5	2.7
West Transdanubia	3.3	2.5	1.8	2.0
Bratislava region	1.2	1.5	1.0	1.1
Western Slovakia	5.0	5.7	3.8	6.6
CENTROPE	1.8	9.6	1.3	10.1
EU 27	0.7	6.4	0.5	5.5

Source: EUROSTAT

Similarly cross-border commuting rates tend to be rather high in the Slovak and Hungarian CENTROPE. In the Slovak CENTROPE, this is primarily due to high out-commuting to the Czech Republic – with which Slovakia formed a country until recently - from Western Slovakia, and in Hungary due to the existence of minorities on both sides of the Slovak-Hungarian border. In addition, special institutional arrangements between Austria and Hungary (the so called Grenzgängerabkommen) enhance cross-border commuting to Austria.[21]

[21] In general, however, it should be noted that the extent of cross-border commuting to Austria from other CENTROPE countries is rather low relative to its extent among the new member state regions on account of the remaining restrictions on cross-border labour mobility in Austria (see also: Römisch R. et, (2011) Focus Report on Spatial Integration.).

Table 2.10: Sectoral Structure of Employment in CENTROPE * (NUTS 3 level)

	Share of Agriculture		Share of Industry		Share of Services	
	2007	2004	2007	2004	2007	2004
EU 27	5.6	6.2	27.5	27.9	66.4	65.4
South Moravia	5.4	6.8	43.0	40.5	51.7	52.7
Czech CENTROPE	*5.4*	*6.8*	*43.0*	*40.5*	51.7	*52.7*
Győr-Moson-Sopron	4.7	4.8	43.3	43.2	52.0	52.0
Vas	4.3	5.2	39.6	41.1	56.0	53.8
Hungarian CENTROPE	*4.5*	*5.0*	*41.5*	*42.2*	53.9	*52.9*
Burgenland	6.7	5.5	27.8	28.5	65.6	66.0
Lower Austria	8.3	7.3	27.3	25.8	64.4	66.8
Vienna	0.7	0.8	19.1	20.3	80.2	78.9
Austrian CENTROPE	*4.7*	*4.2*	*23.6*	*23.5*	71.8	*72.3*
Bratislava	1.3	1.4	23.4	23.5	75.2	74.5
Trnava region	5.0	5.8	43.1	44.2	51.9	49.7
Slovak CENTROPE	*4.0*	*4.6*	*37.7*	*38.5*	58.2	*56.5*
CENTROPE	4.6	4.9	34.1	34.1	61.3	60.8

Source: EUROSTAT, WIFO-calculations. – *excluding extra-territorial organizations and bodies. Figures differ from 100% on account of omitted unknown category and rounding errors.

2.4 Structural Change and Sectoral Development

In summary, the post accession period in the CENTROPE until the beginning of the financial crisis in 2009 was marked by the rapid growth of virtually all parts of the region and there are few signs of a negative impact of enlargement on any of these regions. Furthermore the process of convergence within the region in this period is increasingly blurring the differences in income levels between the new member states regions and Austrian regions of CENTROPE and cross-border and internal commuting, while still by-passing Austria, has increased in the region.

One area in which differences among the regions of CENTROPE persist is that of economic structure. Focusing on the sectoral employment and gross value added (GVA) shares in agriculture, industry and services in the NUTS 3 regions of CENTROPE (see Tables 2.10 and 2.11), the structure of CENTROPE as a whole does not differ dramatically from the EU 27 average. The share of agriculture and industry in GVA are both slightly higher in CENTROPE than in the EU 27 average and the share of services is (by 1.3

percentage points) lower, with the share of services having stagnated between 2004 and 2007 on account of the good development of industry in this period. These small differences, however, mask the substantial structural heterogeneity within CENTROPE, which once again reflects the dividing lines between the new member states and Austria on the one hand, and the urban regions and other regions on the other.

Table 2.11: Sectoral Structure of GVA in CENTROPE (2007 NUTS 3 Level) (Share in % of total regional GVA)

	Agri-culture	Industry	Con-struction	Personal services [3]	Financial Services[4]	Non-Market services[1]	Structural Difference[2]
2000							
Burgenland	5.5	20.4	10.5	20.6	16.4	26.6	3.9
Lower Austria	4.1	27.3	8.8	23.4	16.1	20.4	3.6
Vienna	0.2	13	5.2	28.1	29.3	24.2	3.7
South Moravia	4.7	30.2	6.8	23.6	17.5	17.1	4.1
Gyor-Moson-Sopron	5.3	47.5	4.4	15.1	12.5	15.2	10.0
Vas	5.2	45.3	4.4	14.6	13.3	17.4	9.2
Bratislava region	1.3	21.7	4.9	30.0	22.2	19.9	1.8
Trnava region	5.9	38.4	10.1	20.5	13.4	11.7	8.3
CENTROPE	*2.2*	*20.6*	*6.6*	*25.6*	*23.0*	*22.0*	
2007							
Burgenland	5.1	18.6	10.6	21.4	20.0	24.4	3.6
Lower Austria	3.2	26.0	8.8	23.4	19.0	19.6	3.1
Vienna	0.2	12.4	4.5	25.3	33.4	24.3	3.9
South Moravia	2.9	27.7	8.0	25.7	17.8	17.9	3.7
Gyor-Moson-Sopron	3.9	44.9	4.6	14.4	15.9	16.4	8.8
Vas	7.5	33.5	5.2	15.3	16.7	21.8	6.4
Bratislava region	0.9	17.6	5.0	31.3	26.1	19.0	2.5
Trnava region	3.5	48.5	6.6	17.5	12.0	11.9	10.0
CENTROPE	*1.8*	*20.6*	*6.3*	*24.4*	*25.6*	*21.3*	

Source: EUROSTAT, WIFO calculations. – *excluding extra-territorial organizations and bodies. 1) Public Administration, Education, Health Services, Other Public and Private Services, Private Households 2) average percentage point deviation from CENTROPE average share of sectors 3) Trade, Hotels & Restaurants, Transport & Communication, 4) including real estate

In general, with the exception of the Bratislava region, the share of industry in GVA and employment is higher in the CENTROPE regions of the new member states than in the

Austrian part of CENTROPE. The share of industry in employment and GVA attains a level that is comparable to that of the less heavily industrialized among the new member state regions of CENTROPE (such as Vas) only in Lower Austria, which is considered an industrial region in the Austrian context. In addition, in most of the more heavily industrialized regions within CENTROPE (such as Trnava region, South Moravia, Györ-Moson-Sopron and Vas) the share of industry in GVA exceeds the 40% level.

The exception to this rule is the Bratislava region, which (as its “twin city” Vienna) has a high share of services in both GVA and employment (and a low shares in both agriculture and industry). Still, tertiarisation is less advanced in Bratislava region in comparison to Vienna, with the difference in the share of service employment accounting for over 5 percentage points. In addition, some of the CENTROPE regions (Burgenland and Vas) have a slightly higher share of agriculture in GVA and employment.

Furthermore, when considering the dynamics of the economic structure of GVA at a more detailed sector structure, the CENTROPE as an aggregate experienced rather limited structural change since the turn of the century. The only shifts in sector shares between 2000 and 2007 that exceeded a 1 percentage point change were a 1.2 percentage point reduction in the share of trade, hotels and restaurants, transport and communication in the total GVA of the CENTROPE and a 2.6 percentage point increase in the GVA share of financial services and real estate. The share of manufacturing in total GVA, by contrast, has not changed at all, while the shares of agriculture, construction and non market services declined only marginally. This low extent of structural change at the aggregate level, however, masks the substantial heterogeneity among regions in CENTROPE both in terms of structure as well as in terms of structural change, which may be indicative of the specialization patterns arising in the region.

For instance, the average absolute percentage point difference in the share of GVA of sectors in a region to the CENTROPE average, which we calculate as an indicator of structural dissimilarity between the individual CENTROPE regions and the CENTROPE as an aggregate (in the last column of table 2.11), suggests that Györ-Moson-Sopron and Trnava region are the regions that are most dissimilar from the CENTROPE average in terms of economic structure. In both these regions, the share of manufacturing in total GVA was substantially higher than in the CENTROPE average (44.9% and 48.5%, respectively), while the share of services (in particular of financial services and real estate) was low. These regions are thus the most heavily industrialized in the CENTROPE.

Structural change in these regions has, however, differed substantially. In Györ-Moson-Sopron the share of industry in total GVA has declined by more than 2 percentage points since the turn of the century and the share in agriculture by more than one percentage point. At the same time the share of both financial services and non-market services has increased substantially. In Trnava, by contrast, on account of the substantial FDI that went into this region in the last decade, manufacturing increased its share in GVA by over 10 percentage points, causing the share of all other sectors of the economy to decline.

Another example are the regions of Burgenland and Vas, both of which still have a relatively large share of agriculture (5.1% and 7.5%) as well as a high share of non-market services (24.4% and 21.8%) in GVA. This characterizes these regions as the most rural regions in the CENTROPE. Again structural change in these regions has developed quite differently. In Vas the share of agriculture and market services in total increased substantially in the last decade, as did the share of financial services at the expense of a more than 10 percentage point reduction of the manufacturing sector, which started at a very high value in 2000. In Burgenland, by contrast, the share of agriculture stagnated and the share of non-market services reduced at the expense of an increase in the share of financial markets and real estate in total GVA. Furthermore, the process of de-industrialisation (with a reduction of the GVA share of 1.8 percentage points only) has been much more modest in this region than in Vas.

Similarly, the two capital cities of the region are obviously characterized by low shares of manufacturing and agriculture and a high share of services in total GVA. Within services, however, a much larger part of GVA is accounted for by trade, hotels, restaurants as well as transport and communications in Bratislava region than in Vienna, and Vienna has a higher share in the financial services and real estate as well as in non-market services. Furthermore, in Bratislava region – aside from a decreasing share of industry and an increasing share in financial services and real estate - the share of trade, hotels, restaurants as well as transport and communications in total GVA increased by 1.3 percentage points, while in Vienna the share of financial services and real estate increased by over 4.1 percentage points. This suggests that a specialization is emerging between the two cities by which Bratislava is increasingly specializing in logistics and Vienna more in financial services.

Finally, the regions of both South Moravia as well as Lower Austria, while also clearly differing from the overall structure of the CENTROPE, have no such clear specialisation

patterns as do the other regions, except for both regions having a high share of GVA in the construction sector. Structural change between these regions has, however, also differed substantially. In Southern Moravia agriculture and manufacturing lost GVA shares while construction and trade, hotels, restaurants as well as transport and communications increased their share substantially. In Lower Austria de-industrialisation was accompanied by an increasing share of financial services and real estate.

Table 2.12: Average annual predicted sectoral growth of GVA in CENTROPE (2007-14, NUTS 3 Level, in %)

	Agriculture		Manu-facturing		Construction		Personal Services[2)]		Financial Services [3)]		Non-Market Services[1)]	
	2007-10	2010-14	2007-10	2010-14	2007-10	2010-14	2007-10	2010-14	2007-10	2010-14	2007-10	2010-14
South Moravia	–0.4	1.1	–1.9	3.4	1.0	3.5	0.3	4.6	–0.6	3.8	–0.4	1.1
Gyor-Moson-Sopron	–2.1	1.4	–1.9	5.9	0.6	4.7	–5.3	0.6	–1.7	0.8	–2.1	1.4
Vas	–2.3	1.7	–7.3	0.2	–0.9	2.5	–4.9	1.2	–3.9	–0.9	–2.3	1.7
Burgenland	1.2	–0.2	–0.4	2.9	–1.1	1.6	–0.4	2.0	0.5	2.0	1.2	–0.2
Lower Austria	2.5	1.5	–0.4	2.9	–1.2	1.7	–0.4	2.0	0.9	2.1	2.5	1.5
Vienna	2.8	2.4	–1.2	2.6	–1.8	1.5	–0.9	2.1	0.4	2.1	2.8	2.4
Bratislava region	1.5	3.0	0.7	5.1	2.7	5.4	1.5	3.8	6.8	3.9	1.5	3.0
Trnava region	0.2	2.7	–0.6	5.5	–1.7	1.6	0.6	2.9	6.7	4.4	0.2	2.7
CENTROPE	2.3	2.0	–0.9	3.3	–1.0	2.0	–0.6	2.4	0.9	2.3	2.3	2.0
EU	1.2	1.1	–3.8	2.8	–2.7	2.0	–1.2	2.2	0.2	2.3	1.2	1.1

Source: Cambridge Econometrics, WIFO calculations. – *excluding extra-territorial organizations and bodies. 1) Public Administration, Education, Health Services, Other Public and Private Services, Private Households 2) Trade, Hotels & Restaurants, Transport & Communication, 4) including real estate

In summary, this suggests that within CENTROPE there has been substantial structural change on the regional level, which seems to imply that regional specialization has progressed substantially. Furthermore, sectoral growth forecasts suggest that – after a clear slump in the period 2007-2010, which primarily affected manufacturing, construction and personal services – structural change will continue after the recession. Here, however, what distinguishes the CENTROPE from the EU 27 are the high growth rate forecasts for manufacturing, which are primarily a result of high predicted growth of this sector in Gyor-Sopron-Moson and in the Slovak CENTROPE.

2.4.1 Human Capital

Similarly, the structure of the labour force and infrastructure endowments differ significantly across CENTROPE regions. Aside from national differences in education systems these differences are closely associated with urbanisation: In general CENTROPE is characterised by a highly qualified workforce that has its strongholds in the secondary and upper secondary education levels. In particular in the regions of the Czech Republic and Slovakia (with the exception of Bratislava region) almost 70% of the workforce has a completed secondary education. The share of population with a tertiary education is, however, below the European average in all regions but Vienna and Bratislava region, where over a quarter of the workforce in Bratislava region and 20% in Vienna has completed tertiary education. High shares of the workforce with only a completed primary education (of around or over a third) can only be found in Burgenland.

Table 2.13: Structure of the Workforce in CENTROPE 2008 (Share in % of the total regional workforce, NUTS 2 level)

	low skill		medium skill		high skill	
	2009	2004	2009	2004	2009	2004
South East	16.9	20.9	69.4	68.2	13.7	10.9
West Transdanubia	25.8	31.9	53.1	49.6	12.6	10.8
Burgenland	33.3	36.1	55.0	54.1	11.7	9.9
Lower Austria	27.2	29.0	58.9	57.1	13.9	13.9
Vienna	23.6	24.5	55.0	55.3	21.5	20.2
Bratislava region	14.1	17.8	58.7	60.4	27.2	21.8
West Slovakia	21.5	27.3	68.3	65.1	10.2	7.6
CENTROPE	22.4	26.0	61.4	59.9	15.2	13.2
EU 27	37.1	40.6	42.9	42.2	20.0	17.2

Source: Eurostat, WIFO-Calculations. – Shares of population aged 15 or more. Legend: High skill – ISCED groups 0-2, Medium Skill – ISCED Groups 3-4, High Skill – ISCED Groups 5 or more.

CENTROPE's relative comparative advantages in general are thus rooted in a strong orientation on medium skilled human capital segments which is also reflected in its strong industrial base, in particular in ancillary industries (such as automotive components). These comparative advantages, however, also are rapidly changing in particular in the new member state parts of CENTROPE. While in the CENTROPE as an aggregate the

gap in the share of high skilled relative to the EU has increased from 4.0 percentage points to 4.8 percentage points in the period from 2004 to 2009 and the differences in the share of low skilled have remained about constant, this is solely due to relatively slow structural change in the Austrian CENTROPE.

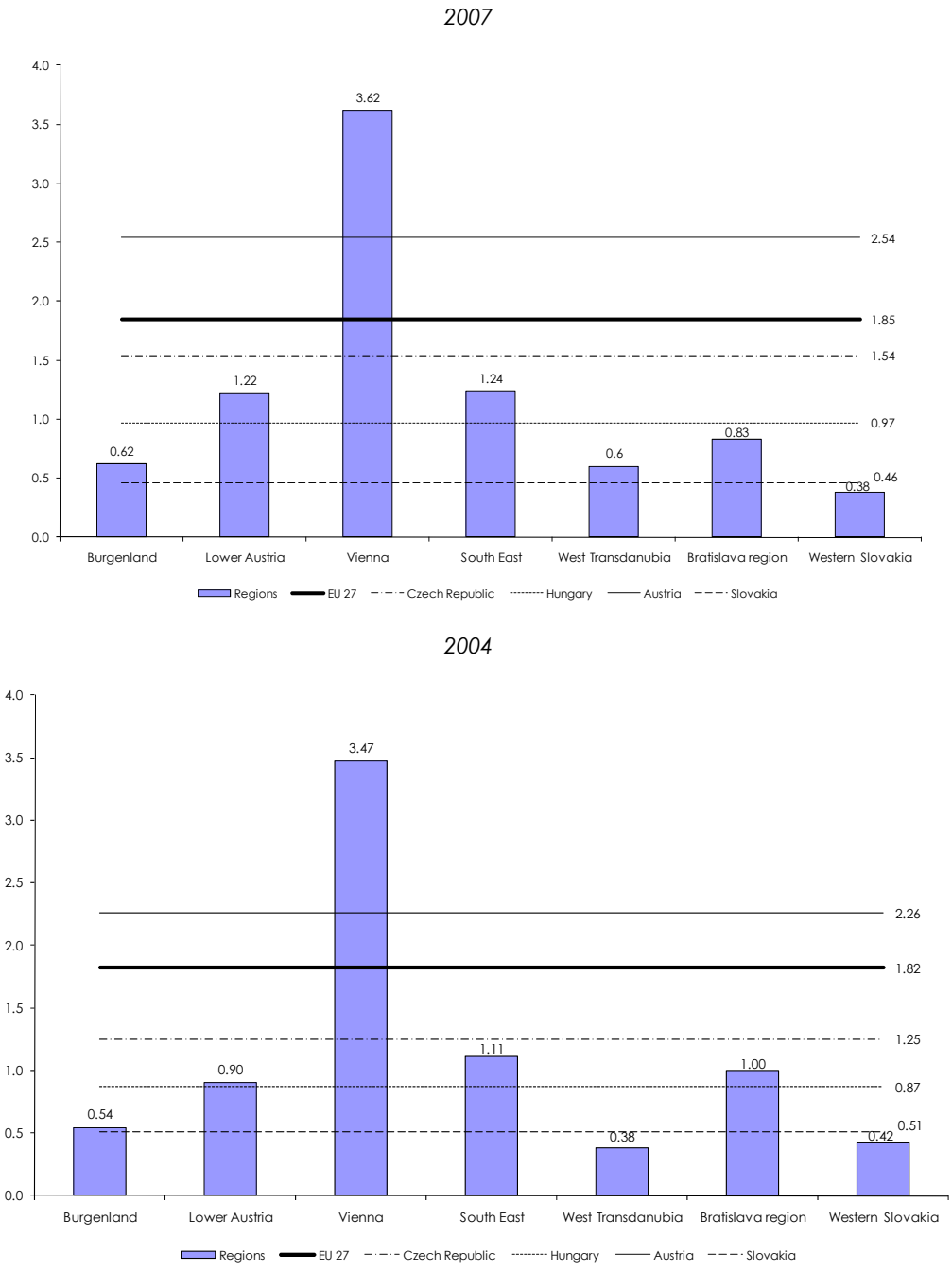
In the Austrian CENTROPE the share of tertiary educated above 15 year olds has stagnated in Lower Austria in the last five years and increased by 1.3 and 1.8 percentage points in Burgenland and Vienna, respectively. By contrast among the regions of the new member states, this increase has amounted to between +2.8 percentage points (which also is the European average) in West Transdanubia and +5.4 percentage points in Bratislava region. Similarly in the Austrian CENTROPE the share of low skilled was reduced by between -0,9% in Vienna and -2.8% in Burgenland, while in the regions of the new member states of the CENTROPE reductions amounted to between -3.7% in Bratislava region and -6.1% in West Transdanubia.

2.5 R&D and Education

The limited data on regional R&D expenditure, patenting and employment in high technology sectors available from EUROSTAT suggest that CENTROPE is in general not a typical high tech location in the EU. Among the NUTS 2 regions of the EU 27 only Vienna could claim an R&D expenditure (in percent of GDP) that is higher than the EU 27 average in the year 2007. All other NUTS 2 regions of CENTROPE have an R&D expenditure (in percent of GDP) that is clearly below the EU average. Here in particular the Burgenland, West Transdanubia and Western Slovakia stand out as regions where R&D expenditure is below 0.8% of GDP; the share of R&D expenditure in Bratislava region (1%) seems low given that Bratislava is the country's capital acting as a centre for the national innovation system.

Furthermore, while in all other regions of CENTROPE the share of R&D expenditure has increased (although nowhere by more than the 0.3 percentage points of GDP in Lower Austria), in the Slovak CENTROPE regions R&D expenditure could not keep up with the substantial GDP growth and reduced by almost 0.2% of GDP in Bratislava region and by less than 0.1% of GDP in Western Slovakia.

Figure 2.12: R&D Expenditure in % of GDP (NUTS 2 level)



Source: EUROSTAT.

These low shares of R&D expenditure in the region cannot be attributed solely to the organization of national innovation and research systems around national capitals, where South Moravia and West Transdanubia have a disadvantage by being far from the national centre, since also all of the CENTROPE countries – aside from Austria – have a below average R&D expenditure (in % of the GDP) on a national level (see Figure 2.12).

Thus, while CENTROPE does not perform well in a European context when R&D expenditure is considered, it performs slightly better when patent statistics and employment in the high technology sector are considered (see Table 2.14). Reflecting the industrial specialisation of CENTROPE, the amount of patenting and high tech employment is relatively high and indicative of the innovation potential of the region. This applies in particular to Vienna, Lower Austria and Burgenland, where the number of registered patents is substantially higher than in the new member state parts of the CENTROPE and Vienna, the Bratislava region and Western Transdanubia, where the share of employment in the High Tech sector is substantially higher than in the other CENTROPE regions according to Eurostat data.

Table 2.14: Patents per million Inhabitants and share of high tech employment (in % of total regional employment) in CENTROPE (NUTS 2 level)

	Patents per million Inhabitants			Employment share in High-Tech Branches		
	2007	2004	2000	2008	2004	2000
Burgenland	77.4	78.8	71.4	3.2[1])	4.3	3.8
Lower Austria	80.0	136.7	115.2	4.4	3.4	4.7
Vienna	116.4	190.1	118.6	5.7	6.2	8.2
South East	11.4	8.5	8.0	4.8	4.5	4.5
West Transdanubia	5.1	1.8	3.7	6.0	6.0	6.0
Bratislava region	11.8	12.8	6.9	6.9	6.4	6.3
Western Slovakia	3.3	2.8	1.4	4.6	3.3	3.1

Source EUROSTAT. Data on the European Union and CENTROPE is not available due to missing data problems and missing absolute values.

Table 2.15: R&D Personnel in the CENTROPE (2007)

	All sectors[1)]	Business enterprises[2)]	Government sector[2)]	Higher education[2)]	Private non-profit sector[2)]
		Share in all Sectors (in %)			
	All R&D Personnel				
South-East	1.6	36.9	15.8	47.2	0.1
West-Transdanubia	0.6	31.2	9.7	59.2	-
Burgenland	0.5	76.7	-	-	
Lower Austria	0.8	87.1	5.9	6.4	0.6
Vienna	4.7	39.8	10.0	49.6	0.6
Bratislava region	3.3	8.0	31.3	60.7	-
West Slovakia	0.6	36.5	12.5	50.9	0.1
CENTROPE	1.8	38.2	13.8	47.4	0.4
EU	1.6	42.3	12.0	44.7	1.1
	Researchers				
South-East	1.0	27.6	17.5	54.8	0.2
West-Transdanubia	0.4	24.4	7.8	67.8	
Burgenland	0.2	68.5	-	-	-
Lower Austria	0.4	85.0	4.1	10.1	0.8
Vienna	3.1	34.6	8.7	56.0	0.7
Bratislava region	2.7	6.5	27.2	66.3	
West Slovakia	0.4	23.9	8.0	68.1	0.1
CENTROPE	1.2	30.3	13.0	56.1	0.4
EU	1.0	35.4	10.5	53.0	1.1

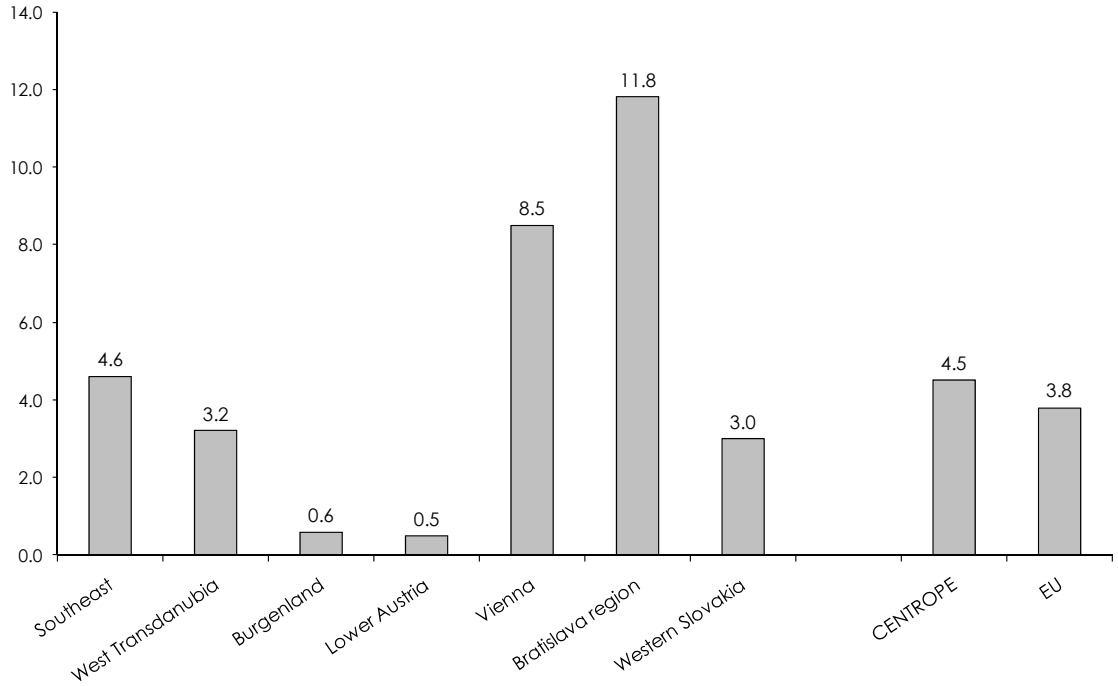
Source EUROSTAT. - Data not available due to few observations. 1) In % of total regional employment 2) in % of total R&D employment

Data on patenting alone is a weak indicator for innovative potential on account of the differing patenting strategies of MNEs in many countries, but data on R&D-personnel working in the region point in a similar direction.[22] In aggregate the CENTROPE has a

[22] In particular given the important role of multinational enterprises in many CENTROPE regions it cannot be precluded that patents actually made in CENTROPE are registered at the location of a firm's main seat, which would distort actual innovative capacity downward.

share of employees in R&D as well as of researchers in total employment that is slightly (by 0.2 percentage points) higher than in the EU average (see table 2.15). This is, however, primarily due to the urban agglomerations in the region (Vienna, Bratislava region and – on account of Brno – also the Czech South-East) where the share of R&D personnel exceeds that in the EU throughout. In these regions, the government and higher education sector holds a large share of R&D personnel, so that employment of R&D personnel in the business sector in general is below the EU average.

Figure 2.13: Students in tertiary education in % of the total population of CENTROPE (2007, NUTS 2 level)



Source Eurostat.

The university sector by contrast plays a more important role in R&D employment in the CENTROPE than in the EU average, on account of the 24 universities and the numerous other tertiary education institutions located in the region. This also leads to a relatively large number of students involved in tertiary education residing in CENTROPE. In total some 390.000 thousand students were studying in the NUTS 2 regions of CENTROPE in 2007 (as opposed to 340.000 in 2005), so that the share of students in tertiary education

institutions amounted to 4.5% of the total population residing in the region (relative to 3.8% in the European average). Once more – for obvious reasons - these shares are particularly high in the urban agglomerations of the region (Vienna, Bratislava region and the Czech South East; see also the country chapter on the Czech CENTROPE in this study), but also achieve shares that approach the European average in West Transdanubia and West Slovakia.

2.6 Conclusions

In summary, the economic development of the CENTROPE since the year 2004 was characterized by above European average growth rates of GDP at market prices as well as GDP per capita at purchasing power standard, productivity and employment and rapidly declining unemployment rates. Furthermore, the region was also characterized by substantial internal convergence. While the CENTROPE countries were harder hit by the crisis than the EU 27, preliminary evidence available from forecasts of regional GVA and employment growth for 2008 and 2009 suggests that the CENTROPE region was not. Aggregate GDP is expected to have declined by less than in the EU average in the CENTROPE regions, and is also expected to resume growth relatively quickly. This suggests that the impact of the crisis on aggregate growth of the CENTROPE is of limited duration and that recovery has been more rapid than expected. As a consequence, the processes of both above average growth and that internal convergence applicable to the period since 2004 are likely to continue in the future.

While this stylized fact is good news for the inhabitants of the regions – since it implies increasing levels of income – it also has important repercussions for the development of comparative advantages of the region in the international division of labour. To some degree it can still be argued that low wage costs and a predominantly medium skilled labour force are important elements of the comparative advantage of the CENTROPE, at least in the parts that lie in the new member states: These differences in income levels between the Austrian and the new member states' parts of the CENTROPE currently combine to the unique economic advantage of both low cost high growth locations with some of the most highly developed regions of the EU at very short distances from each other, (which, as is often argued in the literature, facilitates cross-border division of labour even for SME's). As convergence progresses these statements are likely to be increasingly less true. Thus issues which shape much of the policy debate in other border

regions (such as generating critical masses in education, research and innovation to foster joint development) are likely to become much more important for this region as well.

In addition the process of convergence is also likely to change the spatial configuration of the region; as convergence continues, locations are likely to experience changes in their locational advantages for individual sectors as well as residents. On a local scale this may give rise to changing settlement (across national borders) and location patterns that should be analysed in future research.

On the more macro-regional level that we have focused on in this chapter, this may also lead to changes in sectoral specialization of regions. Additionally low wage costs are also likely to become a less important source of comparative advantage in the future and other competitive factors such as the educational level of the region and its research and development base are likely to become more important. In this respect CENTROPE currently faces some disadvantages; in particular, the evidence available suggests that individual regions within CENTROPE have substantial innovation potential but that – despite substantial improvements with respect to certain factors shaping these more “modern” competitive advantages -, the region is still lagging behind both in terms of education structure and R&D expenditure.

3. Regional Development in the Austrian CENTROPE

3.1 Introduction

The Austrian region of CENTROPE is composed of three provinces (Bundesländer). These are the capital city of Vienna, Lower Austria and Burgenland, which together form the NUTS 1 region of Eastern Austria. This region is marked by substantial internal heterogeneity:

- Vienna – has around 1.8 million inhabitants and is the country's capital. It is a typical urban region with a high share of services in GDP (around 81.6%), high population density and important national administrative functions. Vienna's GDP per capita in 2007 amounted to € 40.616 (163% of the EU average), which makes Vienna the 12th richest region among the NUTS 2 regions in Europe. Among the Austrian regions Vienna is unique due to its low share of manufacturing in GVA and employment. This is also due to the substantial structural change which was driven by rapid deindustrialization and has led to low employment growth and high unemployment in the last decade. As a result Vienna is also the Austrian province with the second highest unemployment rate (2009: 8.5% according to national methodology).
- Lower Austria – which surrounds Vienna and hosts 1.6 million inhabitants, is the largest Austrian province in terms of area. The large area covered by the province also makes it relatively heterogeneous, with the areas located on the outskirts of the city of Vienna being typical suburban regions. These regions have profited from increased relocation of services and manufacturing to the outskirts of Vienna in the last decade. By contrast, some of the northern regions (such as the Waldviertel) as well as the south-western regions have a more rural-peripheral character. In these regions the remote location paired with a high share of agriculture and emigration have led to below average development. In general, however, Lower Austria is marked by a high share of manufacturing in GVA and is considered one of the Austrian industrial provinces. The province in total is marked by third highest share of manufacturing in GDP in Austria (27.3%), where in particular metal working, machinery as well as oil processing belong to the important branches. The unemployment rates of this region are traditionally in the middle ranges of the Austrian provinces; in 2009 they were at 7.4%.
- Burgenland - was the only Objective 1 region and still is the poorest of the Austrian provinces (with a GDP per capita of 81% of the EU average according to EUROSTAT). It is also the smallest Austrian province with a population of 280.000. This province (in particular in the south) is characterized by rural-peripheral regions. Due to a

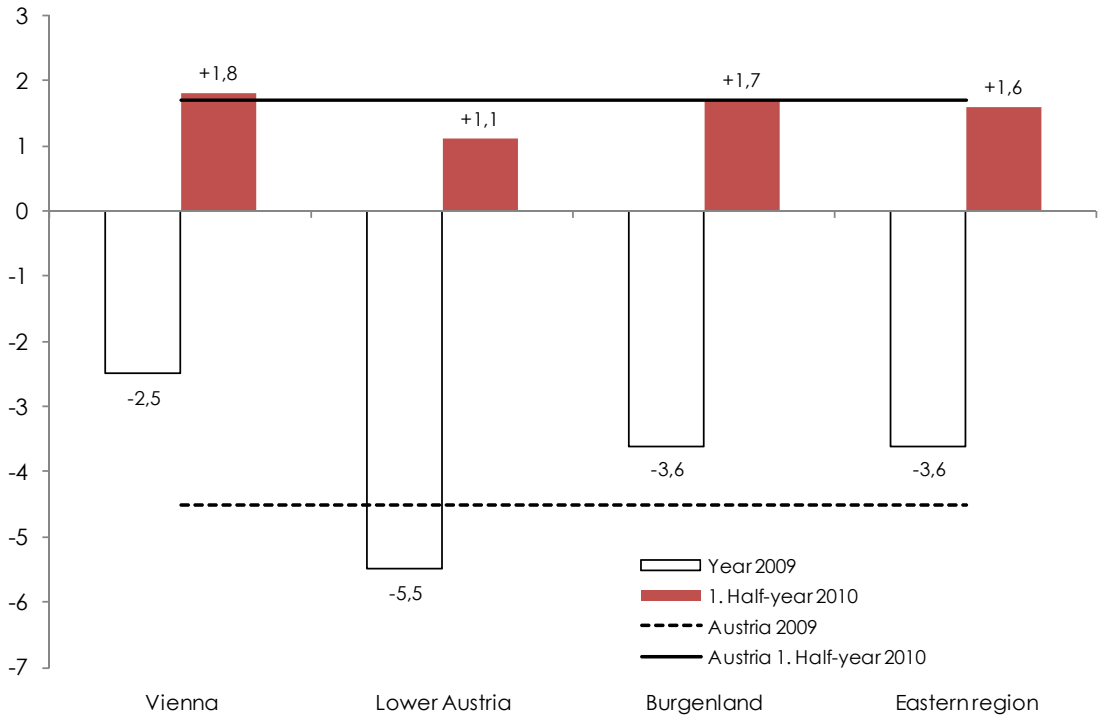
combination of EU funds and improved accessibility due to the fall of the iron curtain, Burgenland has also been marked by the high GDP and employment growth. In particular EU funds have led to the emergence of new industries in the region (most notably the attraction of major manufacturing plants as well as the development of a number of spas in the south). This in turn has reinforced the tendencies of convergence and has led to a substantial catching up of the region. However, since the turn of the century the Burgenland's growth performance has been only slightly above the Austrian average.

These structural differences among the provinces also strongly influenced the most recent economic development of the region. During the primarily export driven economic boom extending from 2006 to the end of 2008, increased export demand as well as higher investments spurred manufacturing sector growth, which expanded nationwide real gross value added by +7.2% in 2007. In particular the western provinces (Bundesländer) of Austria, which do not belong to the CENTROPE and are characterized by strong export links (in particular to Germany), showed strong growth. By contrast the provinces of Vienna and Burgenland, which belong to the CENTROPE and are more dependent on internal demand, exhibited much slower growth. Lower Austria, by contrast, was an exception due to its higher share of industry outperforming the Austrian average in this period.

In the first quarter of 2009, however, the Austrian economy and in particular the export oriented manufacturing sector, came to a sudden stop as a consequence of the global financial crisis and Austria entered into its deepest recession since the end of the Second World War. In the first two quarters of 2009 nationwide real GDP declined, by -4.9% (in the first quarter of 2009) and by -5.1% (in the second quarter). The reason for this decline was a pronounced reduction in exports of almost 20% which in turn primarily impacted on the export oriented Austrian manufacturing sector.

In the second half of 2009, however, the Austrian economy recovered more rapidly than originally anticipated and seasonally adjusted quarterly GDP Growth rates turned positive in the third quarter of 2009. Yet growth rates remained low by pre-recession standards both in the second half of 2009 as well as in the first half of 2010. In total real GDP declined by -3.9% in the year 2009 and an increase of 2.0% is expected for 2010 according to the forecasts of the Austrian Institute of Economic Research.

Figure 3.1: Real GVA Growth in the Austrian CENTROPE- Excluding Agriculture (Real -relative to prices previous year), change to previous year in %



Source: WIFO; preliminary estimate. October 2010.

3.2 Economic development in the Austrian CENTROPE 2009 and first half of 2010

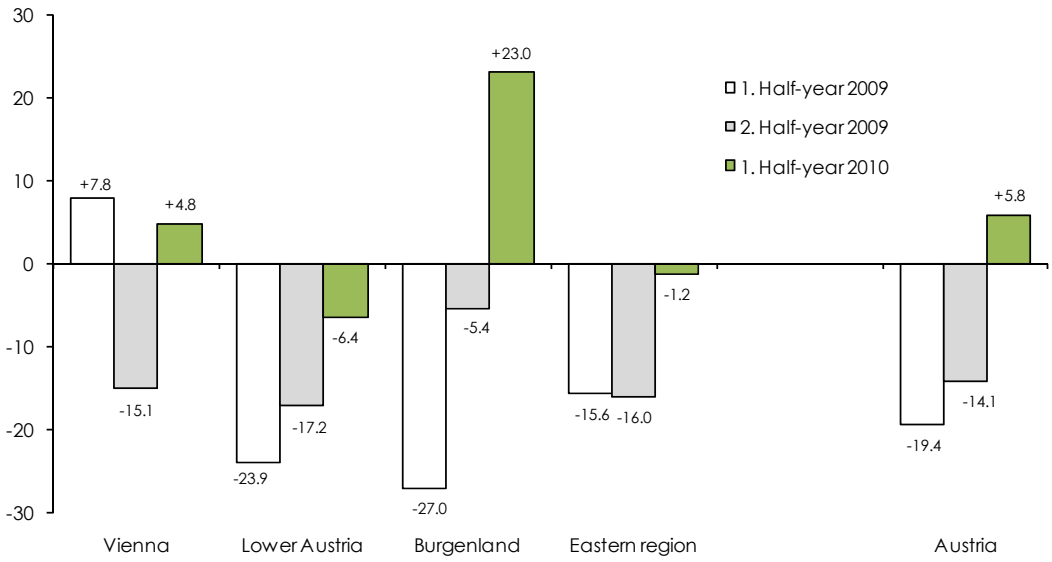
3.2.1 GVA growth

On a regional level the sharp drop in exports in 2009 also led to a complete reversal of the ranking of regional growth rates relative to the boom years of 2006 to 2008. While in these years the strongly industrialized region of Lower Austria showed the most rapid expansion of GVA among the Austrian CENTROPE provinces on account of its booming manufacturing sector and Vienna and Burgenland, whose production structure is more strongly focused on native demand, lagged behind the Austrian average, the decline in real gross value added in 2009 (according to estimates of the Austrian Institute of

Economic Research) was more pronounced in Lower Austria (-5.5%) than the Austrian average (see Figure 3.1). By contrast, the previously lagging regions of Burgenland performed better than the Austrian average and the capital city of Vienna was affected least strongly by regional GVA decline among all Austrian provinces - with a reduction in GVA of –2.5%.

This pattern only changed marginally over the first two quarters of 2010. Here Vienna – (according to preliminary estimates) experienced an increase in GVA of 1.8% and thus just above the Austrian average (of 1.7%), while Burgenland grew by 1.7% and Lower Austria by 1.0%. Thus overall the Austrian CENTROPE grew just slightly below the Austrian average (by 1.6%).

Figure 3.2: Production value in manufacturing*, change to previous year in %



Source: Statistics Austria, WIFO; preliminary estimate. November 2010. * Value of own production sold.

3.2.2 Manufacturing

As with the growth rate differential before 2009, the marked differences in GDP decline since then also are primarily explained by the structural differences among the individual regions of the Austrian CENTROPE, since it was the manufacturing sector that was most strongly affected by the crisis in 2009. In total, industrial production in the Austrian CENTROPE declined by -15.9% in 2009 (relative to -16.7% in the Austrian total); in

particular, the metalworking industry as well as machinery and furniture industries have experienced declines in production of more than 15.0%. Only the rather small pharmaceutical industry as well as the production of other miscellaneous goods has been showing positive growth.

Table 3.1: Development of manufacturing

	Production sold [1])	Technical Production [2])	Production index 2005 = 100	Production sold [1])	Technical Production [2])	Production index 2005 = 100
	Year 2009			1. Half-year 2010		
	Percentage changes to previous year					
Vienna	– 4.5	– 4.6	– 5.3	+ 4.8	– 3.8	– 11.1
Lower Austria	– 20.6	– 21.7	– 12.1	– 6.4	– 5.3	+ 0.9
Burgenland	– 16.8	– 22.5	– 7.7	+ 23.0	+ 20.0	+ 7.9
Eastern region	– 15.9	– 16.8	.	– 1.2	– 3.6	.
Austria	– 16.7	– 17.5	– 12.5	+ 5.8	+ 6.0	+ 4.7

Source: Statistik Austria, WIFO-calculations. Preliminary data as of October 2010. – [1]) Value of products sold excluding VAT. – [2]) Value of production including internal deliveries and subcontracts. .=missing due to lack of regional weights.

Aside from this there were also important regional differences in the development of manufacturing in 2009 (see figure 3.2). While the Viennese manufacturing sector – due to a particularly good development of the miscellaneous goods sector – still grew by 7.8% in the first semester of 2009 and thus entered recession with some delay, manufacturing declined by over -27% in Burgenland in the first half of 2009 and then stabilised somewhat (with a decline of -5.4%) in the second half of 2009. Lower Austria – as the most important manufacturing region in the Austrian CENTROPE with a high share of exports to central and eastern European countries - experienced a severe decline in both the first and second half of 2009.

In Vienna the relatively favourable development of manufacturing was due to continued growth of a number of less important branches (such as beverages, pharmaceutics, other vehicles and furniture), even as manufacturing of electronic equipment plummeted. In Burgenland by contrast the food industry, which is an important employer in the region, reduced production by -9.2%, while the other important sectors such as metalworking and rubber and plastic products experienced output declines below the Austrian average. In

Lower Austria almost all of the important manufacturing sectors of the economy (with the notable exception of manufacturing of metal goods and vehicles) experienced more severe reductions of production than in the Austrian average. In particular the machinery sector (-25.9%) electric appliances (-21.7%) and metal production (-31.3%) had output declines in excess of 20%.

Table 3.2: Development of employment, wages and productivity in manufacturing

	Productivity[1])	Wages[2])	Employees[3])	Productivity[1])	Wages[2])	Employees[3])
	Percentage changes from previous year					
	2009			*1. Half-year 2010*		
Vienna	+ 0.1	+ 4.4	– 4.7	+ 0.9	+ 2.7	– 4.7
Lower Austria	– 17.7	+ 1.2	– 4.9	+ 0.7	+ 0.8	– 6.0
Burgenland	– 17.5	+ 2.0	– 6.1	+ 21.3	+ 2.6	– 1.1
Eastern region	– 12.5	+ 2.6	– 4.9	+ 1.7	+ 1.7	– 5.2
Austria	– 13.4	+ 1.9	– 4.7	+ 10.7	+ 0.6	– 4.2

Source: Hauptverband der österreichischen Sozialversicherungsträger, Statistik Austria, WIFO-calculations. – [1]) Technical production (see table 3.1) per employee. – [2]) Gross earnings per employee, according to Konjunkturerhebung, Statistik Austria. – [3]) source: Konjunkturerhebung Statistik Austria.

These diverging trends in industrial production also continued into the first half year of 2010. Here Burgenland grew by over 23.0%, due to a) the substantial reduction in the first half of 2009, and the associated low starting values as well as b) exceptionally high growth rates of the electronic and optical machinery industry, printing industry as well as in electric equipments industry, which, however in part result from a number of enterprises being reclassified with respect to industry affiliation. The Viennese manufacturing sector – due to increased production in miscellaneous products as well as a number of other smaller branches – increased production by 4.8% (as compared to an increase of 5.8% for Austria as a whole). Manufacturing in Lower Austria by contrast remained in decline primarily due to a very unfavourable development of the chemical and rubber industries.

In contrast to the long term developments of the Austrian manufacturing sector, which is characterised by substantial productivity growth, falling production and labour hoarding - at least in the initial phases of the downturn - also led to a substantial reduction in productivity of this sector in the Austrian CENTROPE. In particular in Burgenland and Lower Austria output per worker fell by over -15%, while Vienna (with +0,1%) - due to good

output development - experienced an increase. This trend was reversed in the first half of 2010, and at least in Burgenland and Vienna productivity levels were already above those of the year 2008 in the first half of 2010. In Lower Austria, however, productivity growth is still lagging behind the national average and also has not achieved the pre-recession level yet.

Table 3.3: Development of production in manufacturing by branch and region

	Vienna	Lower Austria	Burgen-land	Austria	Vienna	Lower Austria	Burgen-land	Austria
	Year 2009				1. Half-year 2010			
	Percentage changes from previous year							
Foods	– 13.8	– 6.6	– 9.2	– 5.6	– 15.3	– 2.0	+ 0.7	– 1.3
Beverages	+ 1.6	– 2.7	+ 6.3	– 2.9	– 11.9	+ 1.1	+ 2.9	+ 3.7
Tobacco	.	.	.	– 12.0	.	.	.	– 13.6
Textile Production	– 30.1	– 12.6	+ 9.9	– 16.4	+ 9.8	+ 8.7	+ 17.0	+ 9.9
Clothing Production	– 51.3	.	.	– 7.0	– 48.0	.	.	+ 7.3
Leather and Shoe production	.	– 5.9	.	– 19.6	.	.	.	+ 9.4
Wood Products	+ 4.5	– 11.6	– 8.8	– 12.5	+ 25.4	+ 17.3	+ 16.6	+ 13.4
Paper Products	– 5.6	– 12.0	.	– 14.4	+ 2.2	+ 15.4	.	+ 10.1
Printing and publishing	– 14.1	– 6.1	– 12.4	– 9.0	+ 9.2	– 0.2	+ 16.5	+ 3.2
Processing of Mineral Oils	.	.	.	– 30.1	.	.	.	+ 18.5
Chemical Products	– 13.3	– 19.0	.	– 16.7	– 6.1	– 41.9	.	– 7.3
Pharmaceutic Products	+ 11.0	.	.	+ 7.2	– 1.7	.	.	+ 15.3
Rubber and Plastic products	– 17.5	– 9.7	– 21.9	– 12.6	+ 10.8	– 19.9	+ 14.3	– 0.1
Glass, stone and mineral earth products	– 26.9	– 9.3	– 29.5	– 11.9	– 11.4	+ 2.5	+ 1.6	+ 4.5
Metal production and processing	+ 11.8	– 31.3	.	– 31.8	+ 70.7	+ 15.9	.	+ 19.6
Manufacturing of metal products	– 5.8	– 18.6	– 21.1	– 19.1	– 6.7	– 3.6	+ 4.5	+ 3.6
Manufacturing of electronic and optic products	– 21.0	– 1.4	.	– 18.4	– 39.8	+ 9.8	+ 622.2	+ 5.9
Manufacturing of electric appliances	– 3.9	– 21.7	+ 2.6	– 7.0	– 23.0	+ 8.8	+ 54.9	– 4.3
Machinery	– 25.4	– 25.9	– 1.4	– 23.4	+ 10.9	+ 1.1	– 1.4	+ 2.0
Manufacturing of vehicles and components	– 22.0	– 17.4	.	– 29.5	– 5.8	+ 11.6	.	+ 26.9
Other vehicles	+ 16.7	– 13.6	.	+ 0.2	– 49.2	.	.	– 21.9
Furniture production	+ 8.0	– 31.7	– 16.5	– 13.6	+ 39.1	– 9.7	+ 1.2	– 3.7
Manufacturing of other goods	+ 39.2	– 26.0	– 12.3	+ 9.5	– 13.2	+ 1.0	+ 9.4	– 7.8
Repair and Installation of Machinery and Equipment	– 8.4	– 0.7	.	– 3.9	+ 47.5	– 18.4	– 4.9	+ 20.0
Manufacturing total	– 4.5	– 20.6	– 16.8	– 16.7	+ 4.8	– 6.4	+ 23.0	+ 5.8

Source: Statistik Austria, WIFO-calculations. . = missing data on account of few observations.

3.2.3 Construction & Energy

Next to manufacturing the construction sector was also hard hit by the recession. After increasing output substantially in 2008, production values in construction declined by -1.5%. The substantial regional differences in the growth rate of construction in 2009 were,

however, driven by differences in public construction activities. In particular in Vienna in 2009 public expenditure in the construction sector – in part as reaction to the economic crisis and in part due to the launch of a number of already previously planned large scale construction projects – increased by over 15%. This also led to further increase of production of +0.2%. In Burgenland public expenditure in construction also increased with private demand remaining relatively stable as well so that overall construction production increased by 5.9%. In Lower Austria, by contrast, public demand as well as overall production in the construction sector declined in 2009.

Table 3.4: Production in Construction

	Construction	Construction excluding ancillary activities[2])				Energy & Water supplies[1])
	Total [1])	Total	Above Ground	Below Ground	Public Procurement	
	Percentage changes from previous year					
1. Half-year 2010						
Vienna	– 7.1	– 4.8	+ 0.3	– 12.1	– 4.6	+ 4.8
Lower Austria	– 2.6	– 3.3	+ 1.2	– 9.2	– 1.4	– 0.4
Burgenland	– 5.5	– 16.6	– 13.9	– 23.8	– 31.4	– 1.2
Eastern region	– 5.3	– 4.8	– 0.3	– 11.2	– 4.5	+ 3.9
Austria	– 2.2	– 3.7	– 0.9	– 7.2	– 5.4	+ 4.8
2009						
Vienna	+ 0.2	– 16.3	+ 4.4	– 36.3	+ 18.8	+ 6.8
Lower Austria	– 1.0	– 6.8	– 6.0	– 8.4	– 6.2	+ 8.9
Burgenland	+ 7.4	+ 2.7	+ 8.9	– 8.3	+ 5.1	+ 10.1
Eastern region	+ 0.1	– 11.6	+ 0.3	– 24.9	+ 12.8	+ 7.2
Austria	– 1.5	– 7.5	– 3.2	– 13.5	– 4.9	+ 5.2

Source: Statistik Austria, WIFO-calculations. Data October 2010. – [1]) according to ÖNACE. – [2]) According to GNACE.

In the first half of 2010, however, the high level of public sector construction expenditure of the last year could not be continued in Vienna and the Burgenland. This reduction was not compensated by increased demand from the private sector so that production was reduced by -7.1% in Vienna and -5.5% in Burgenland. Among the regions of the Austrian CENTROPE public construction expenditure was reduced least in Lower Austria. This also

led to the lowest reduction in overall construction production in this region among the Austrian CENTROPE regions.

The energy production sector, which is, however, relatively small in terms of share in total GVA and employment, was the only sector to contribute positively to GVA growth (nationwide +5.2%) in 2009. Here regional trends are primarily shaped by weather conditions and water levels in the rivers on which hydroelectric power plants are located. Usually production rises disproportionately in regions with high shares of hydro-electric plants when water levels are favourable and in regions with a high share of thermal energy production when water levels are unfavourable. In 2009 these conditions favoured production in Burgenland (where this sector is, however, very small) and Lower Austria, while in the first half year of 2010 these two provinces suffered from a decline in production.

3.2.4 Tourism

The impact of the crisis on Tourism is also visible. The number of nation-wide overnight stays was reduced by 1.9% and tourism revenues were reduced by even more (-3,6%) on account of the substantial price reductions that were granted in a number of locations to fill vacancies. In addition, the crisis also changed the structure of tourist demand, as tourists in general substitute cheaper for more expensive holidays in a recession. This in turn implies that, during a recession, holidays are more often spent in closer and cheaper locations and that long holidays are substituted for shorter ones. According to this pattern, the reduction in overnight stays in Austria primarily arose from declining demand from distant (non-European) countries while the number of overnight stays of native guests actually increased by 2% both in the summer as well as the winter season in 2009.

In addition on account of the increased frugality of tourists and reduced business travel, urban tourism was hard hit by the crisis. From a regional perspective this implies that Vienna – where tourism had been booming in the years 2006 to 2008 – experienced the most severe reductions in overnight stays, in particular in the summer season (-3.6%).

This also impacted tourism in Lower Austria where in particular the suburban districts (Wien-Umgebung, Mödling) experienced reductions in overnight stays, while a number of destinations in the Wein- and Waldviertel, which are mostly destinations for domestic tourists, profited from increased demand by domestic visitors. In aggregate, however, the number of overnight stays reduced by -1.3% in Lower Austria. Burgenland, which is a

region with a high share of short-term domestic tourists, who often come from the large cities of Vienna or Graz for weekend stays, belonged to the regions that unambiguously profited from the increased demand for domestic holidays.

Table 3.5: Overnight stays in the winter and summer season, year 2009/10

	Winter Season			Summer Season		
	2009	2010	% change	2008	2009	% change
Eisenstadt(Stadt)	18,113	18,427	+ 1.7	39,755	43,222	+ 8.7
Eisenstadt(Rust)	19,513	19,723	+ 1.1	104,172	103,126	– 1.0
Eisenstadt-Umgebung	11,798	13,831	+ 17.2	197,704	201,978	+ 2.2
Güssing	130,750	131,757	+ 0.8	157,578	152,682	– 3.1
Jennersdorf	82,560	80,265	– 2.8	103,448	107,999	+ 4.4
Mattersburg	52,998	60,793	+ 14.7	65,021	68,849	+ 5.9
Neusiedl am See	145,138	169,941	+ 17.1	787,213	823,004	+ 4.5
Oberpullendorf	133,277	125,446	– 5.9	179,157	160,916	– 10.2
Oberwart	283,041	272,446	– 3.7	327,553	330,988	+ 1.0
BURGENLAND	877,188	892,629	+ 1.8	1,961,601	1,992,764	+ 1.6
Krems an der Donau	58,484	61,300	+ 4.8	144,550	147,307	+ 1.9
Sankt Pölten(Stadt)	60,089	59,326	– 1.3	71,882	74,392	+ 3.5
Waidhofen an der Ybbs	36,655	36,665	+ 0.0	48,476	48,402	– 0.2
Wiener Neustadt	40,098	37,395	– 6.7	56,734	48,134	– 15.2
Amstetten	90,606	81,163	– 10.4	154,303	134,011	– 13.2
Baden	299,254	317,039	+ 5.9	415,486	396,917	– 4.5
Bruck an der Leitha	47,556	43,856	– 7.8	72,176	70,716	– 2.0
Gänserndorf	86,495	82,844	– 4.2	118,451	116,192	– 1.9
Gmünd	172,536	166,401	– 3.6	291,946	275,591	– 5.6
Hollabrunn	18,701	16,925	– 9.5	61,275	57,248	– 6.6
Horn	35,266	29,707	– 15.8	79,997	94,116	+ 17.6
Korneuburg	43,585	38,157	– 12.5	65,515	61,131	– 6.7
Krems(Land)	65,440	66,837	+ 2.1	329,586	330,474	+ 0.3
Lilienfeld	72,456	77,259	+ 6.6	111,861	116,572	+ 4.2
Melk	55,167	49,094	– 11.0	215,332	210,068	– 2.4
Mistelbach	67,855	62,993	– 7.2	96,183	95,800	– 0.4
Mödling	169,439	170,394	+ 0.6	276,428	234,691	– 15.1
Neunkirchen	256,907	263,843	+ 2.7	335,274	333,896	– 0.4
Sankt Pölten(Land)	58,846	61,223	+ 4.0	123,990	104,404	– 15.8
Scheibbs	181,117	161,570	– 10.8	133,049	127,620	– 4.1
Tulln	51,180	40,241	– 21.4	115,254	112066	– 2.8
Waidhofen an der Thaya	14,220	13,096	– 7.9	33,618	49,248	+ 46.5
Wiener Neustadt(Land)	161,518	163,004	+ 0.9	177,892	186,665	+ 4.9
Wien-Umgebung	207,415	216,711	+ 4.5	341,747	331,910	– 2.9
Zwettl	126,027	138,210	+ 9.7	177,267	223,210	+ 25.9
LOWER AUSTRIA	2,476,912	2,455,253	– 0.9	4,048,272	3,980,781	– 1.7
VIENNA	4,135,658	4,472,501	+ 8.1	5,893,454	5,698,444	– 3.3
EASTERN REGION	7,489,758	7,820,383	+ 4.4	11,903,327	11,671,989	– 1.9
AUSTRIA	62,900,800	62,695,500	– 0.3	62,370,021	61,674,336	– 1.1

Source: Statistik Austria, WIFO-calculations. November 2009 to April 2010.

Table 3.6: Tourism by calendar year - Overnight stays

	Total		Natives	Foreigner			Hotels			Private Quarters
	In			Total	German	Others	5/ 4 Star	3 Star	2-/ 1-Star	
	1.000	Percentage changes from previous year								
1. Half-year 2010										
Vienna	4,824	+12.9	+15.9	+12.1	+18.9	+9.5	+13.4	+14.9	+12.4	+20.3
Lower Austria	2,926	+ 0.6	+ 2.7	– 4.4	–5.4	–3.7	+2.9	–5.0	–3.3	–3.2
Burgenland	1,189	+ 1.9	+ 3.2	– 3.6	–6.6	+3.8	+12.5	+0.4	–14.2	–10.8
Eastern region	8,940	+ 7.1	+ 5.9	+ 8.1	+9.8	+7.2	+10.6	+6.9	+1.6	–4.8
Austria	63,904	+ 0.2	+ 2.2	– 0.5	–1.4	+0.5	+4.5	–1.9	–4.6	–6.9
Year 2009										
Vienna	9,843	–3.8	–1.6	+ 4.4	–1.6	–5.3	–6.2	+0.7	–0.6	+5.5
Lower Austria	6,442	–1.3	+3.8	–11.0	–8.7	–12.9	–4.1	–5.8	–8.9	–0.3
Burgenland	2,866	+2.1	+2.9	– 0.6	+2.1	–7.1	+5.6	–4.2	–1.9	+0.7
Eastern region	19,150	–2.1	+2.3	– 5.5	–3.1	–6.6	–4.3	–2.0	–3.9	+0.1
Austria	124,307	–1.9	+1.7	– 3.2	–2.6	–4.0	–1.5	–3.6	–5.6	–6.5

Source: Statistik Austria, WIFO-calculations.

Thus while in particular the structure of tourism growth in 2009 was shaped by the countervailing impact of recession on different segments of the tourism market, increased consumer confidence and first signs of a recovery in the first half of 2010, paired with the level effect stemming from the previous year, led to a certain reversal of trends. In particular data from the first half year of 2010 suggest that city tourism has increased substantially. Vienna – starting from the low last year level - registered an increase in the number of tourist nights of 8.1% in the winter season 2009/2010, with increases of both domestic and international visitors being about balanced. Also some of the suburban regions of Lower Austria (in particular Wien-Umgebung and Baden) around Vienna experienced substantial increases, while for most other districts of Lower Austria (except for the region of Lillienfeld,– which hosts one of the ski resorts in Lower Austria, – Krems and the capital Sankt Pölten as well as Wr. Neustadt) tourist nights declined, so that there was an overall reduction of -0.9% of tourist nights in the winter season in this region. Here in the first half of 2010 in particular international tourists reduced their demand. In Burgenland, by contrast, the positive development of the previous year continued (due to substantial increases in tourist nights in particular in Mattersburg and Neusiedl) and the overnight stays increased by 1.8%, on account of both an increase in the number of domestic as well as international tourists.

3.2.5 Trade and other market services

In the face of reducing economy wide GVA, employment and increasing unemployment as well as reducing turnover in tourism, retail trade developed relatively favourably in Austria in 2009. One reason for this were the fiscal policy measures taken in the beginning of 2009 (tax reforms and a family support package). These prevented a more substantial reduction of disposable income and in further consequence reduction of demand for consumption goods. According to estimates of KMU-Forschung Austria, real retail rate turnover reduced by only 0.3% in Austria in 2009. However, the provinces of the Austrian CENTROPE suffered higher declines than the Austrian average (Vienna -2.2%, Lower Austria -0.7%, Burgenland -0.6%). This can be explained in part by the reduction in cross-border shopping from other countries of the CENTROPE, which accounts for a sizeable share of the retail demand of the larger retailers and shopping malls in eastern Austria. In Vienna this decline was further enhanced by a long term trend of retailers to move to the suburbs outside the city.

Table 3.7: Retail Trade turnover

	Nominal		Real	
	Year 2009	1. Half-year 2010	Year 2009	1. Half-year 2010
	Percentage changes from previous year			
Vienna	– 0.6	+ 1.0	– 2.2	– 0.2
Lower Austria	+ 0.9	+ 1.0	– 0.7	– 0.2
Burgenland	+ 1.0	+ 2.2	– 0.6	+ 1.0
Eastern region	+ 0.3	+ 1.2	– 1.3	± 0.0
Austria	+ 1.3	+ 2.1	– 0.3	+ 0.9

Source: KMU-Forschung Austria.

In the first two quarters of 2010, after the ending of the one off increase in disposable income due to tax reforms, real retail trade stagnated, with a reduction amounting to -0,1% in the first quarter and a only slight minus in the second quarter. Vienna experienced a reduction of -0.2%, as did Lower Austria. The only province with a positive development in retail trade was in the first half of 2010 was Burgenland with an increase of 1.0%.

Table 3.8: Employment in other market services

	Other market services (total)[1)]	Knowledge intensive Services [2)]	Other market services (total)[1)]	Knowledge intensive Services [2)]
	Year 2009		1. Half-year 2010	
	Percentage changes from previous year			
Vienna	+ 0.1	– 0.1	+ 0.8	+ 0.3
Lower Austria	– 2.9	+ 1.0	+ 0.1	+ 0.7
Burgenland	– 2.6	+ 2.8	– 1.2	+ 1.4
Eastern region	– 0.9	+ 0.2	+ 0.5	+ 0.4
Austria	– 2.0	+ 1.0	+ 0.3	+ 0.4

Source: Hauptverband der österreichischen Sozialversicherungsträger, WIFO-calculations – [1]) ÖNACE 2008: H, J-N, R-T, excluding S94. – [2]) ÖNACE 2008: J62, J63 and M.

For most of the other market and non-market oriented services, only regional employment data are available at this point in time. From these data (see table 3.8) it can be seen that – in contrast to the usual development in the business cycle, where this sector slightly lags aggregate development - employment in "other market services (i.e. the NACE sectors H,J to N, R to T, excluding S29) was largely concordant with aggregate decline. Employment in other market services started declining in the first quarter of 2009 in all of the provinces of the Austrian CENTROPE except for Vienna (which, however, was a laggard in terms of aggregate development) where employment started to decline in the third quarter 2009. Average annual employment decreased in all regions except for Vienna. In part this unusually rapid reaction of the market service sector to the business cycle can be explained by the substantial share of contract workers that lost their workplace in manufacturing very early in the business cycle, but were officially registered as employed in the business service sector. Employment in knowledge intensive services (in NACE Sectors J62, J63 and M) by contrast – as usual in the business cycle - started to decline only with some delay and in 2009 only Vienna experienced a decline in employment in these service industries.

In the first half of 2010, however, employment in other market services as well as in knowledge intensive services – following the general upward tendencies in the business cycle and long term trends of employment growth in this sector – started to grow again with only the Burgenland still in minus with other market services.

Table 3.9: Development of dependent employment

	Total[1])	Men	Women	Foreigners	Natives
	Absolute	Percentage changes from previous year			
1. Half-year 2010					
Vienna	758,950	+ 0.2	+ 0.0	– 0.4	+ 1.4	– 0.5
Lower Austria	535,415	± 0.0	– 0.8	+ 0.4	+ 1.0	– 0.4
Burgenland	87,321	+ 1.2	+ 0.1	+ 1.8	+ 3.6	+ 0.5
Eastern region	1,381,686	+ 0.2	– 0.3	+ 0.1	+ 1.4	– 0.4
Austria	3,251,035	+ 0.3	– 0.3	+ 0.4	+ 1.8	– 0.3
Year 2009					
Vienna	758,509	– 0.8	– 1.5	– 0.2	+ 1.8	– 1.5
Lower Austria	539,143	– 1.3	– 2.6	± 0.0	– 1.9	– 1.3
Burgenland	87,536	– 0.1	– 1.2	+ 1.0	+ 3.8	– 0.8
Eastern region	139,050	– 1.0	– 1.9	– 0.1	+ 0.8	– 1.4
Austria	3,259,310	– 1.4	– 2.5	– 0.1	– 1.3	– 1.4

Source: Hauptverband der österreichischen Sozialversicherungsträger, WIFO-calculations. – [1]) excluding persons in armed forces and on child leave.

3.3 Labour market development in the Austrian CENTROPE

3.3.1 Employment

The crisis of 2009 also left deep marks on the employment situation on the Austrian labour market. While employment increased by 2.1% in 2007 and by 2.4% in 2008, the decline in average annual employment in 2009 according to national sources was -1.4%. Thus at the end of 2009 the number of employment relationships was by 45.000 lower than at the beginning of the year. In particular males were strongly affected by the reduction of jobs in manufacturing. Their employment reduced by -2.5%. Women, on the other hand, profited slightly from the somewhat less rapid reduction in the services sector so that their employment was only by -0.1% lower at the end of the year than at the beginning. Foreign nationals (-1.3%), who had profited disproportionately from employment growth in 2007 and 2008 on account of the then emerging bottlenecks in supply of labour, were affected on an about equal level as Austrian citizen (-1.4%)

Table 3.10: Development of dependent employment by sectors

	Agriculture	Manufacturing	Construction	Market Services			Non-market services
				Total	Trade	others	
	Percentage changes from previous year						
1. Half-year 2010							
Vienna	+ 12.7	– 4.1	– 2.7	+ 0.2	– 2.0	+ 0.8	+ 1.5
Lower Austria	+ 4.8	– 4.8	– 0.2	+ 0.1	± 0.0	+ 4.8	+ 2.9
Burgenland	+ 0.9	– 1.6	– 2.2	+ 0.9	+ 0.6	+ 5.3	+ 3.8
Eastern region	+ 7.0	– 4.3	– 1.6	+ 0.2	– 1.0	+ 1.9	+ 2.2
Austria	+ 4.6	– 3.5	– 1.0	+ 0.3	– 0.3	+ 2.4	+ 2.8
Year 2009							
Vienna	+ 42.3	– 3.8	– 4.0	– 0.8	– 2.1	– 1.6	– 0.6
Lower Austria	+ 0.8	– 6.3	– 1.4	– 2.0	– 1.1	– 4.2	+ 3.2
Burgenland	– 1.7	– 5.2	– 0.1	– 0.4	+ 0.4	– 2.4	+ 2.9
Eastern region	+ 12.3	– 5.3	– 2.5	– 1.2	– 1.5	– 2.3	+ 1.1
Austria	+ 5.6	– 6.0	– 2.1	– 1.7	– 1.3	– 3.6	+ 2.2

Source: Hauptverband der österreichischen Sozialversicherungsträger, WIFO-calculations.

On a regional level the pattern of employment decline followed the sectoral structure of the regions considered. In general regions with a high share of export-intensive manufacturing sector employment (such as many Lower Austrian regions) experienced the most severe decline in employment, while regions with a stronger service orientation (such as Eisenstadt and above all Vienna) took a more favourable development. This implies that relative to the Austrian average the Austrian CENTROPE was less strongly affected, with Lower Austria (as the only industrial province in the Austrian CENTROPE) showing higher employment losses (of -1.3%) than either Vienna (-0.8%) or Burgenland (-0.1%). Thus while employment growth was characterised in a clear West-East differential this reversed in the recession, with the eastern provinces of Austria being most privileged.

Table 3.11: Labour Supply factors on the Labour market

	Labour Supply[1)]			Persons in active labour market policy measures[2)]
	Total (active)[1)]	Total	Foreigners	
	Percentage changes from previous year			
1. Half-year 2010				
Vienna	+ 0.3	± 0.0	+ 1.7	+ 30.2
Lower Austria	+ 0.2	– 0.1	+ 1.3	+ 33.5
Burgenland	+ 0.7	+ 0.4	+ 3.0	+ 11.3
Eastern region	+ 0.3	± 0.0	+ 1.6	+ 30.0
Austria	+ 0.2	± 0.0	+ 1.7	+ 30.8
Year 2009				
Vienna	± 0.0	– 0.1	+ 3.1	+ 25.6
Lower Austria	+ 0.2	+ 0.1	+ 0.6	+ 19.0
Burgenland	+ 1.1	+ 1.0	+ 4.8	+ 9.2
Eastern region	+ 0.2	+ 0.1	+ 2.5	+ 22.6
Austria	+ 0.1	± 0.0	+ 1.1	+ 26.8

Source: Arbeitsmarktservice Österreich, Hauptverband der österreichischen Sozialversicherungsträger, WIFO-Calculations. – [1)] excluding military service, parental leave and labour market policy measures. – [2)] Persons in PES-active labour market policy programmes. 1) employees + registered unemployed

Despite the re-emerging export activity and the associated recovery in manufacturing activities, these regional patterns changed little in the first half of 2010, on account of the usual delayed reaction of employment to business cycle fluctuations. Employment in Vienna grew by 0.2% and also other cities and more service oriented regions profited from employment increases (or at least relatively low employment decreases), while industrial regions as a rule still experienced substantial employment decline. As a consequence employment stagnated in the first half of 2010 in Lower Austria but increased by 1.2% relative to the previous year in Burgenland.

Table 3.12: Registered unemployed according to national methodology

	Unemployed						Unemployment rate	
	Total	Males	Females	Youths[1])	Elder[2])	Long-term unemployed[3])	Level	Change
	Percentage changes from previous year						In %	p.p.
1. Half-year 2010								
Vienna	+2.0	+0.4	+ 4.6	– 0.9	+ 2.7	– 23.8	8.7	+ 0.1
Lower Austria	+1.9	+1.4	+ 2.7	+ 0.1	+ 5.6	+ 25.0	7.7	+ 0.2
Burgenland	–4.5	–3.5	– 6.0	– 8.9	+ 0.5	+ 15.9	8.8	– 0.4
Eastern region	+1.5	+0.5	+ 3.2	– 1.1	+ 3.6	+ 12.7	8.3	+ 0.1
Austria	–0.6	–1.7	+ 1.2	– 4.7	+ 4.4	+ 20.5	7.3	– 0.1
Year 2009								
Vienna	+ 9.9	+ 12.2	+ 6.5	+ 15.7	+ 2.0	– 33.7	8.5	+ 0.7
Lower Austria	+24.5	+ 32.6	+ 14.5	+ 26.5	+ 15.2	+ 44.8	7.3	+ 1.4
Burgenland	+15.0	+ 18.5	+ 10.7	+ 19.1	+ 6.2	+ 65.1	8.5	+ 1.1
Eastern region	+14.9	+ 18.9	+ 9.5	+ 19.9	+ 6.9	+ 17.4	8.1	+ 1.1
Austria	+22.6	+ 29.3	+ 14.2	+ 25.9	+ 13.6	+ 17.7	7.2	+ 1.4

Source: PES Austria, Hauptverband der österreichischen Sozialversicherungsträger, WIFO-calculations. – [1]) 15 to 24 years old. – [2]) 55 years or older. – [3]) 1 year or longer.

3.3.2 Unemployment

While labour demand as measured by employment declined in the recession, labour supply - which had been highly dynamic in the boom years (with increases of 1.4%, 2007 and 1.9%, 2008 mainly on account of foreign workers and females) – stagnated in aggregate in 2009 and the first half of 2010, developing rather heterogeneously and without a clearly visible pattern across regions, with stagnation registered in Vienna, a slight decline in Lower Austria and a slight increase in the Burgenland in 2009, and more or less stagnation in both Vienna and Lower Austria but an increase of 1% in Burgenland in the first half of 2010.

This combination of stagnating labour supply and reducing employment led to a substantial increase in unemployment in 2009. In particular in the industrial regions but also in the medium sized cities of the Austrian CENTROPE, unemployment increased by

over one third, while both in tourist as well as other urban regions (other than Vienna) the increase was between 15% and 30%. Only Vienna performed somewhat better with an increase of 9.9%. In consequence, on a provincial level, the industrial region of Lower Austria experienced the largest unemployment increase (by almost a quarter) with Burgenland (+15.9%) and Vienna (+9.9%) following. At the same time – especially from the second half of 2009 on – long term unemployment started increasing as well, with in particular the Burgenland experiencing an increase of almost two thirds. The only exception to this was Vienna where long term unemployment actually reduced by a third in 2009 and by 23.8% in the first half of 2010. This was, however, primarily owed to a substantial increase in active labour market policy which expanded by a quarter in 2009 and over 30% in the first half in 2010. This directly reduces unemployment since participation in active labour market programs exceeding the duration of 28 days interrupts an unemployment spell in Austria.

Table 3.13: Development of unemployment by district (NUTS 4) level region type

	Registered unemployed					
	Total	Men	Women	Total	Men	Women
	Percentage changes from previous year					
	Year 2009			1. Half-year 2010		
Human Capital-intensive	+ 19.5	+ 24.2	+ 12.9	+ 1.6	+ 0.1	+ 4.1
Vienna	+ 9.9	+ 12.2	+ 6.5	+ 2.0	+ 0.4	+ 4.6
Cities	+ 29.0	+ 37.0	+ 18.3	– 0.8	– 2.7	+ 2.3
Suburban regions	+ 22.0	+ 27.7	+ 15.0	+ 5.0	+ 4.9	+ 5.1
Medium-sized towns	+ 34.3	+ 44.5	+ 22.5	+ 2.1	+ 0.5	+ 4.4
Real Capital-intensive	+ 31.6	+ 43.7	+ 19.1	– 2.7	– 4.6	± 0.0
Intensive industrial regions	+ 38.8	+ 53.9	+ 23.1	– 1.1	– 2.8	+ 1.2
Intensive tourist regions	+ 20.4	+ 27.6	+ 13.1	– 5.5	– 7.7	– 2.2
Rural	+ 24.9	+ 34.2	+ 13.5	– 5.0	– 4.5	– 5.9
Extensive industrial regions	+ 34.2	+ 46.2	+ 19.9	– 6.0	– 6.1	– 5.7
Touristic peripheries	+ 19.5	+ 27.2	+ 10.4	– 3.6	– 2.6	– 5.3
Industrial peripheries	+ 16.9	+ 24.3	+ 7.7	– 4.4	– 3.2	– 6.6

Source: PES Austria, WIFO-calculations. Year 2009 = Averages over the year.

3.4 Conclusion and Outlook

Thus in sum the development of the Austrian CENTROPE regions both in the years of economic upswing until 2008 as well as in the recession 2009 was primarily driven by sectoral differences, with the more export dependent industrial regions showing a noticeably better development in the upswing – but also a noticeably worse development in the recession – than the regions which depend more strongly on internal demand. This in turn also implied that the Austrian CENTROPE in which both the city of Vienna as well as the more rural Burgenland traditionally have a low share of export intensive industrial production – lagged the Austrian development in the upswing, but also performed better than the Austrian average in the downturn.

In particular the preliminary results for the year 2009 suggest that Vienna's GDP declined least strongly of all Austrian regions (by -2.5%) and that unemployment also increases by the lowest percentage (+9,9%). By contrast the industrial region of Lower Austria was much more strongly affected, with GDP declining by -5.5% and unemployment by almost a quarter (24.5%) in 2009. Burgenland, finally, due to its low share of export oriented manufacturing in total GVA was also slightly less strongly affected by the crisis that the Austrian average. Its GDP declined by 3.6% and unemployment increased by 14.9%.

The results for the first two quarters of 2010, however, suggest a recovery of the Austrian economy. In the first half of 2010 GVA in Vienna according to preliminary estimates increased by 1.6% and unemployment increased by 2.0% relative to the previous year. In Burgenland GVA grew by 1.5% and unemployment even reduced (by 4.5%), while Lower Austria on account of an export structure that is less strongly focused on Germany than that of other industrial provinces of Austria grew by only 1.0%, while unemployment increased by 1.9%. This thus suggests that recovery was much more rapid than originally expected in Austria and that the impact of the crisis on aggregate long run growth performance of the Austrian CENTROPE, seems to be limited.

Despite this, however, it is also foreseeable that in the near future the Austrian economy will not return to the high growth rates that were registered in the boom years preceding the economic crisis. What can be expected is a protracted period of rather sluggish economic development, with individual indicators repeatedly decreasing in individual regions for individual time periods. In particular it is expected that the government's budget program announced for next year is likely to reduce disposable income and thus internal demand. This is also reflected in current economic forecasts. For the year 2010 the

Austrian Institute of Economic Research expects a nationwide growth rate of GDP of 2.0% and for 2011 on account of the fiscal programs due to be implemented in Austria as well as in many other countries a slightly slower growth of 1.9% is expected. The unemployment rate according to the ILO definition by contrast is expected to decline to 4.4% in 2010 (6.9% according to national definition) and to 4.3% in 2011. Furthermore in 2010 export growth (real exports +12%, real imports +8.6%) is once more expected to be the main driver of growth.

The combination of high export growth as well as government budget cuts suggest that, in the coming years, in particular for Vienna with its function as a capital city, a substantial part of the employment as well as internal demand is accounted for by the non-market service sector, and Burgenland, which in its economic structure is highly dependent on internal demand, will face rather modest growth rates of GDP. In these provinces at the current point in time it is highly questionable whether growth rates in these regions will suffice to reduce the historically high unemployment rates.

For Lower Austria, by contrast, the outlook is slightly brighter. This province has not profited as strongly as other industrial provinces in Austria from the recovery due to a different export structure, which is slightly less strongly focused on Germany and more strongly on the neighbouring new EU member states. But as these countries emerge from crisis, one can expect above average growth to resume once more. However, due to the close linkages of the labour market of lower Austria to the Viennese labour market (through commuting) it is questionable whether growth will suffice to reduce unemployment.

From a long term perspective the increase in unemployment rates due to the crisis seem to be more of a problem than the reduced economic growth in the Austrian CENTROPE. This is all the more so true because unemployment rates in the past have proven to be rather persistent in Austria and reductions have been shown to happen only in times of very rapid growth. Effective active labour market policies aiming to prevent (long term) unemployment and de-qualification are thus likely to be of high importance in the Austrian CENTROPE countries in the next years.

4. Regional Development in the Czech CENTROPE

4.1 Introduction

The Czech part of the CENTROPE consists of South Moravia (Jihomoravský kraj). Current administrative regions in the Czech Republic came to existence within the framework of public administration reform in 2001 and they represent territorial units at the NUTS 3 level. For the purpose of drawing on subsidies from EU funds, which were bound only to NUTS 1 and NUTS 2 regions, however, so-called NUTS 2 level regions were created at the same time. South Moravia and Vysočina were included to form the Southeast Cohesion Region. Therefore in this chapter the Czech CENTROPE on a NUTS 3 level is considered to be South Moravia. On a NUTS 2 level by contrast it is defined as the Southeast Cohesion Region irrespective of the fact that the Czech part of the CENTROPE (i.e. South Moravia) is only the eastern part of this region. This chapter of the study, which deals with the characteristic of the Czech part of the CENTROPE, therefore presents characteristics at the NUTS 3 level, (i.e. for South Moravia) wherever possible, and occasionally also at the NUTS 4 level (districts). In some instances, we however, also have to refer to NUTS 2 level data for reasons of data availability

South Moravia occupies an area of 7.196 km^2 and its permanent population as of 30th of June 2010 was 1,152,819 residents, which makes it the fourth largest region by area and the fourth most densely populated region in the Czech Republic. Population density amounts to 160 inhabitants/km^2, which is higher than in the national average (133 inhabitants/km^2). As to its administrative division, South Moravia comprises seven districts (Blansko, Brno-City, Brno-surroundings, Břeclav, Hodonín, Vyškov and Znojmo) corresponding to the NUTS 4 level and 673 municipalities.

The share of South Moravia in the total national GDP is 10.1% while GDP per capita in the region according to purchasing power parity amounts to 75.8% of the EU average. The registered unemployment rate as of 30 September 2010 was 9.5%.

South Moravia represents a heterogeneous region formed by two main areas: the Brno agglomeration and the southern rural border area. The two areas significantly differ both in the character of settlement and in a range of socio-economic indicators.

The centre of the Brno agglomeration as well as the capital of South Moravia is Brno, the second largest town in the Czech Republic. Official statistics of the Czech Statistical Office

speak of 371 399 inhabitants (or 405 151 according to the Ministry of Internal Affairs, Jan 1st 2010); nevertheless, expert estimates of permanent residents in the town exceed half a million. This is because Brno is an important university town with the number of university students in 2008 amounting to around 80 thousand and because a high percentage of graduates from other localities remain living in the town without changing their permanent address.

Brno has held a strong industrial tradition from the times of the Austro-Hungarian Monarchy. Traditional industrial sectors, such as engineering and textile or armament industries (Zetor, KPS, Mosilana, Zbrojovka), however, underwent substantial and painful restructuring after 1989 when their importance diminished. The economic potential of the city (and thus of the entire administrative region) rests in its concentration of tertiary (among other things, it is a significant trade fair centre in Central Europe) or quaternary sectors. Brno was chosen as the seat of the most important judiciary institutions in the Czech Republic (the Constitutional Court, the Supreme Court, the Supreme Administrative Court, the Supreme Public Prosecutor's Office and the Public Defender of Rights) and of the Office for the Protection of Competition. Brno is of supra-regional significance in terms of higher education. Five public universities, the state University of Defence and six private universities have their seats in the city.[23] This forms a potential for the development of science, research and the "knowledge economy". The Campus of Masaryk University (EUR 204 million), business incubators and centres of excellence in science are located in Brno as well. The Czech Technology Park was established in the environs of the Brno University of Technology and includes firms such as IBM or Motorola. The Černovická terasa industrial zone near the Brno-Tuřany airport has long been ranked among the most attractive investment locations in Central Europe. Since 2007, the International Clinical Research Center (up to EUR 200 mil.) has been under construction in cooperation with the prestigious American Mayo Clinic. Another project, CEITEC (Central European Institute of Technology – EUR 208 mil.) born from the cooperation of six universities and research centres, is under way. The city's attractiveness for foreign investors is for example attested by the awards won at the traditional Fair of Real Estates and Investment Opportunities

[23] These are Masaryk University, Mendel University, University of Veterinary and Pharmaceutical Sciences, University of Technology, Janáček Academy of Music and Performing Arts (as public universities), the University of Defence (as a state university) and the following private universities: B.I.B.S - Brno International Business School, Sting Academy, Rašín College , Newton College , Karel English College, Hotel and Commerce Academy,

(MIPIM) in Cannes in France, where Brno ranked first as the “City of the Future 2010/2011” in the region of Eastern Europe and third after Antwerp and Leeds in the category of cities with less than half a million inhabitants.

The wider Brno conurbation, constituted chiefly by the Brno-surroundings district and the southern part of the Blansko district, has preserved its traditionally industrial nature to a larger extent than Brno. Apart from the customary centres of engineering industry (Blansko), the industrial base became more diversified after the arrival of a series of prominent foreign investors (Tyco Electronics Kuřim, Celestica Ráječko). The north of the Blansko district (Olešnice and Velké Opatovice regions) differs from the South Moravia Region by its character because these peripheral areas have many features (geography, economic structure etc.) in common with the rural districts Ždár nad Sázavou and Svitavy that border on South Moravia.

The districts of Břeclav, Hodonín, Vyškov and Znojmo belong to the southern more rural border area. These districts are predominantly of a rural nature without an urban centre of supra-regional significance – the populations of all district towns range between 22,000 (Vyškov) and 35,000 (Znojmo). Similarly, save for the Hodonín district, the population density is below the national average (Břeclav 109, Vyškov 99, Znojmo 71 inhabitants/km^2). The unemployment rate, with the exception of the Vyškov district (8.2% as of 31st August 2010, Ministry of Labour and Social Affairs), exceeds the national average. Hodonín and Znojmo are concurrently among the districts distinguished by the highest unemployment rates in the long run. With an unemployment rate of currently 13.9%, Hodonín ranks fifth in the Czech Republic. Also, the districts of the southern rural border area are distinguished by numerous similarities with regards to other socio-economic characteristics. The largely rural character and relatively unburdened environment offers a potential for more intense tourism development (agrotourism, cyclotourism, balneology, wine tourism and also cultural tourism). South Moravia is also the principal wine centre of the Czech Republic (92% of all vineyards on the territory of the Czech Republic) with the absolute majority of vineyards concentrated in the southern rural border area. The Lednice-Valtice Area has UNESCO status. The Podyjí National Park (Thayatal) is situated in the Czech-Austrian borderland.

Another advantage is provided by good traffic accessibility to the region, which is, however, offset by a continuously poor quality tourist infrastructure limiting extended sojourns. Attention must also be paid to the existing disparities at a microregional level.

Particularly peripheral microregions (e.g. Vranov nad Dyjí, Velká nad Veličkou) tend to be poor economic performers or, as the case may be, are characterised by markedly above-average unemployment rates (e.g. in the micro region of Vranov nad Dyjí had an unemployment rate of 25% in January 2010), which is in part due to the high seasonality of employment and unemployment in the southern rural border area. While between 2005 and 2008 the situation in the threatened microregions improved slightly, the gravity of some disparities became more visible with the onset of economic crisis.

Table 4.1: Development of GDP per capita in the regions of the Czech Republic (real GDP Czech Republic = 100)

Region	1995	1997	1999	2001	2003	2005	2006	2007	2008
Czech Republic	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Czech Republic (excluding Prague)	90.6	89.7	87.5	86.3	85.9	85.9	85.6	84.9	84.6
Regions – NUTS 3									
Prague	170.6	178.3	195.4	206.8	209.9	208.9	210.2	215.0	215.5
Central Bohemia	86.3	87.3	93.4	92.9	94.3	92.1	94.5	93.9	91.9
South Bohemia	93.7	94.2	93.1	90.3	89.3	90.1	89.7	85.9	86.9
Plzen	96.6	96.6	93.1	94.2	93.4	94.4	94.5	91.9	89.7
Karlovy Vary	93.5	87.2	83.3	79.6	80.1	75.3	71.8	71.3	71.8
Usti	94.8	89.2	84.8	79.4	82.4	81.2	81.3	79.3	80.5
Liberec	90.7	90.9	89.2	87.7	80.9	83.8	81.3	77.1	74.0
Hradec Králové	93.3	95.7	93.3	92.4	89.7	87.6	84.9	85.0	83.1
Pardubice	89.8	87.9	85.5	84.1	85.0	82.4	83.9	83.6	83.5
Vysočina	85.5	82.5	83.4	88.3	85.9	84.8	84.2	84.3	83.6
South Moravia	95.8	94.4	92.7	92.6	92.8	91.0	91.6	91.9	92.3
Olomouc	83.3	83.6	79.5	77.8	76.7	75.8	74.1	74.0	76.2
Zlin	89.6	89.4	84.3	82.9	81.9	80.7	81.5	81.8	80.9
Moravian Silesia	87.6	86.8	80.3	78.1	77.5	84.7	83.3	84.1	84.2

Source: Czech Statistical Office (CZSO)

The advantage enjoyed by South Moravia in terms of cooperation with partner regions in the CENTROPE is a good knowledge of the languages spoken in the neighbouring countries. As a result of the 70-year long existence of a common state, fluent understanding between Czechs and Slovaks is commonplace. The Region, also with regards to its historical development, is distinguished by a long tradition of German

language learning that was not completely severed even during the socialist era when German preserved the status of the most widespread Western language. Although after 1989 German continues to yield to English, its position as a language in South Moravia remains above average. According to the Czechinvest agency, nearly 60% of the Region's inhabitants state at least a passive knowledge of the language, which places the Region only second to the Karlovy Vary Region. The national average is 48%.

Table 4.2: Development of Regional GDP at purchasing power standards)

Region	1995	1997	1999	2001	2003	2005	2006	2007	2008
Czech Republic	111,229	121,855	127,374	142,056	155,220	174,571	188,265	206,412	209,532
Czech Republic excl, Prague	88,956	96,502	98,572	108,592	118,108	132,668	142,643	154,984	156,476
Regions – NUTS 3									
Prague	22,273	25,353	28,802	33,463	37,112	41,903	45,622	51,428	53,056
Central Bohemia	10,294	11,409	12,846	14,511	16,241	18,062	20,211	22,290	22,464
South Bohemia	6,324	6,983	7,225	7,846	8,493	9,630	10,348	10,840	11,082
Plzen	5,786	6,329	6,365	7,202	7,805	8,860	9,578	10,243	10,206
Karlovy Vary	3,070	3,142	3,146	3,360	3,705	3,914	4,008	4,358	4,451
Usti	8,429	8,711	8,687	9,043	10,277	11,402	12,269	13,091	13,484
Liberec	4,187	4,614	4,742	5,219	5,259	6,125	6,407	6,661	6,482
Hradec Králové	5,566	6,264	6,381	7,068	7,477	8,190	8,544	9,356	9,242
Pardubice	4,938	5,298	5,392	5,939	6,547	7,106	7,800	8,504	8,614
Vysočina	4,750	5,028	5,318	6,284	6,676	7,373	7,896	8,638	8,642
South Moravia	11,850	12,803	13,141	14,591	15,944	17,542	18,995	20,866	21,215
Olomouc	5,842	6,414	6,368	6,960	7,480	8,261	8,691	9,471	9,831
Zlin	5,803	6,342	6,246	6,848	7,378	8,127	8,812	9,646	9,608
Moravian Silesia	12,119	13,165	12,716	13,723	14,827	18,076	19,083	21,020	21,155

Source: CZSO

4.2 Economic development in South Moravia

When comparing regional accounts (GDP, national income) in the Czech Republic, the specific position of Prague must be first noted since it has the status of both a NUTS 2 and NUTS 3 level region. The regional GDP per capita of Prague, which is the 5th wealthiest NUTS 2 region of the EU, amounted to 172.5% of the EU average and 215.5% of the Czech average. As a result of this dominant position of the capital city in the Czech

economy, all other administrative regions have below national average GDP per capita. Comparing South Moravia to the national average can thus be rather misleading. For instance with respect to GDP per capita, South Moravia achieves only 92.3% of the Czech average.

Table 4.3: Gross fixed capital formation (per capita, in CZK)

Region	1995	1996	1997	1998	1999	2003	2004	2005	2006	2007
Czech Republic	44,704	52,383	52,617	54,630	54,680	67,388	71,237	72,492	77,563	86,242
Czech Republic excl. Prague	41,490	48,707	46,886	48,742	46,893	57,789	57,805	59,337	61,092	64,756
Regions - NUTS 3										
Prague	68,868	80,118	95,986	99,378	114,180	142,069	175,424	173,812	203,964	250,133
Central Bohemia	40,081	51,957	47,148	59,985	55,928	64,806	71,187	76,786	74,899	71,083
South Bohemia	75,666	62,908	53,486	58,798	60,773	68,906	63,599	74,449	60,474	59,695
Plzen	49,445	69,540	60,764	67,786	47,529	58,067	67,770	57,773	97,941	84,478
Karlovy Vary	41,964	56,399	40,410	39,362	37,030	62,809	56,629	57,770	50,079	50,210
Usti	42,879	48,277	50,571	50,160	41,817	63,031	50,959	48,500	53,789	73,357
Liberec	35,375	33,349	36,778	39,360	43,586	62,386	63,600	56,747	49,754	53,352
Hradec Králové	36,290	48,238	43,613	41,936	41,421	51,121	55,001	46,504	44,734	48,111
Pardubice	37,240	40,195	42,918	43,158	36,423	50,381	54,559	45,003	42,095	53,839
Vysočina	31,112	40,647	41,684	43,330	37,929	49,850	53,610	59,906	50,869	64,920
South Moravia	41,926	50,943	50,454	52,572	54,879	74,837	62,475	80,400	76,090	84,111
Olomouc	30,023	41,783	34,073	43,419	41,025	46,449	54,021	46,731	46,749	50,190
Zlin	32,725	37,273	41,179	38,338	42,076	49,965	51,594	45,158	51,931	53,245
Moravian Silesia	41,240	47,227	51,036	41,816	46,932	42,902	46,093	50,094	60,772	61,351

Source: CZSO

When South Moravia is compared to other administrative regions, however, a strikingly different picture emerges. As can be seen from table 4.1 the relative position of South Moravia among the Czech NUTS 3 regions in terms of GDP has improved recently. In 1999 the region ranked sixth in terms of GDP per capita in 1999, fourth in 2005 and second only to Prague in 2008. Thus comparing regional GDP per capita in the Czech Republic to the national average may be misleading, since even a relatively well to do region such as South Moravia is below the national average on account of the outlier of Prague. A comparison to the median regional GDP per capita without Prague may by more informative. Here South Moravia exceeds this median by roughly 9%. This small lead of the wealthiest region aside from Prague exemplifies another attribute of the distribution of regional GDP per capita (and many other economic indicators) in the Czech Republic. At the level of NUTS 2 as well as NUTS 3 the variations between regions are small, when Prague as a capital is excluded.

As far as total GDP is concerned South Moravia took the third place after Prague and Central Bohemia (Středočeský kraj) Region with a slight lead over the Moravian-Silesian Region. These four large administrative regions of the Czech Republic (Prague, Central Bohemia, Moravian Silesia and South Moravia) take a share of 56% in total GDP of the Czech Republic; the portion taken by South Moravia amounts to 10.1%. Similar observations also apply to the case of gross value added (GVA) of the regions. The same four administrative regions appear in the lead (GDP/GVA in mil. of CZK): Prague (934,095/841,009), Central Bohemia, (395,492/356,080), South Moravia, (373,500/336,280) and Moravskoslezský kraj (Moravian Silesia) (372,458/335,341).

Table 4.4: Development of regional GDP at constant prices, (previous year = 100)

Region	2003	2004	2005	2006	2007	2008
Czech Republic in total	103.6	104.5	106.3	106.8	106.1	102.5
Czech Republic without Prague	103.5	104.7	106.2	106.8	105.0	102.5
Regions - NUTS 3						
Capital of Prague	103.8	103.8	106.7	106.7	109.7	102.4
Central Bohemia	103.1	106.4	105.9	113.0	108.0	104.8
South Bohemia	102.9	105.3	107.5	106.0	100.7	103.2
Plzen	105.3	108.8	104.5	107.7	102.9	100.4
Karlovy Vary	102.1	100.8	101.8	100.4	103.8	99.7
Usti	107.2	101.6	105.3	106.2	102.2	103.2
Liberec	95.7	105.3	112.3	105.1	101.3	101.3
Hradec Králové	102.3	105.1	105.0	103.7	105.9	100.9
Pardubice	105.6	103.7	105.5	107.2	107.0	105.2
Vysočina	102.9	103.7	106.9	106.6	105.3	102.9
South Moravia	104.4	103.3	105.8	108.1	106.4	102.0
Olomouc	103.1	107.4	102.8	104.2	104.7	104.2
Zlin	103.0	103.2	108.8	108.8	106.7	101.7
Moravian Silesia	104.0	104.8	107.6	103.6	104.9	100.6

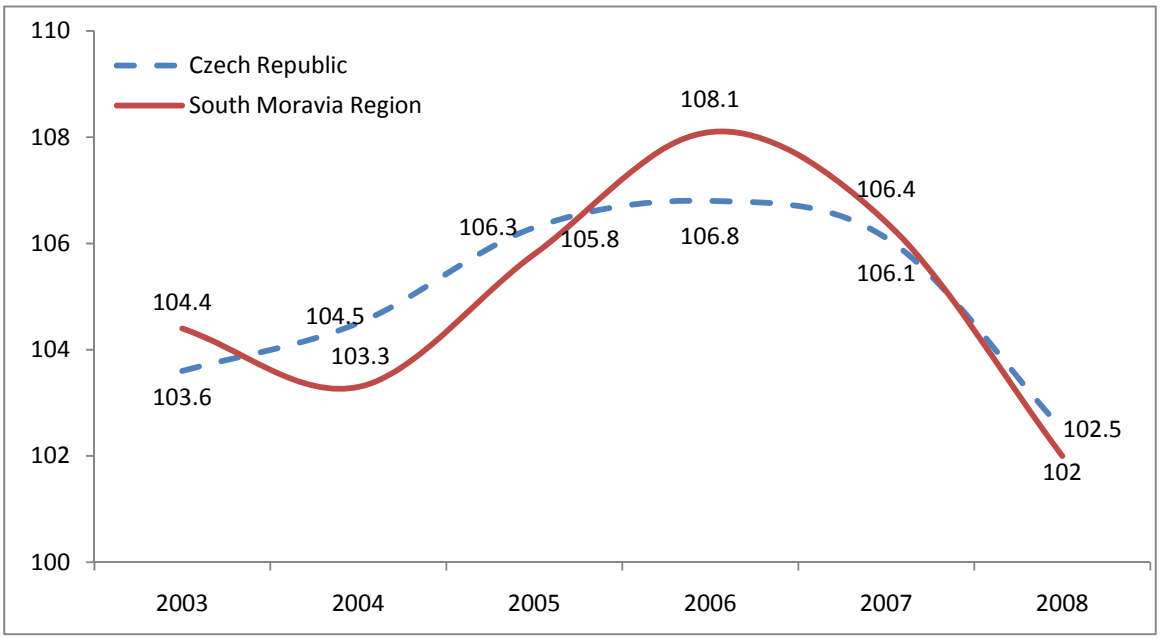
Source: CZSO

The situation with respect to investments (i.e. gross fixed capital formation), which are strongly affected by the industrial character of the individual regions or significant investments into projects for building infrastructure, however, differs somewhat from this

situation. In absolute terms (i.e. million Czech crowns (CZK)), the same four regions as for GDP and GVA remain in the lead in 2007 but in a different order. Here Prague (299,273) leads before South Moravia (95,502), Central Bohemia (84,378) and Moravia-Silesia region (76,647). When, however, calculated in per capita terms (Table 4.3), Prague is followed by the industrial Pilsen region (Plzen) and South Moravia ranks third before Ústí (which is also an industrial region). In contrast to the GDP or GVA indicators, gross fixed capital formation is marked by considerable fluctuations over time. The outstanding values of the Pilsen in the second half of the 1990's are determined especially by the completion of the industrial zone Borská pole on the outskirts of Pilsen that was gradually occupied by investors (the most significant of which, Panasonic, opened a local branch in 1996) and by an accelerated construction of the high priority motorway Prague – Pilsen – Bavaria (among other things, the section Pilsen – Bavaria measuring 62 km opened in 1997 and constituted the longest ever opened stretch of motorway in the Czech Republic). High values achieved by South Bohemia are in contrast due to the construction of the Temelín nuclear power station.

Investment rates (i.e. the share of gross fixed capital formation in the GDP in percent), however, have been decreasing in the entire Czech Republic since 1995. This implies that in this time period the growth of GDP exceeded the growth of gross fixed capital formation. In particular the investment rate that expanded throughout the transformation period of the 1990s (31.5% in 1995) has been decreasing since the year 2000 (to 24.3% in 2007). Although at the level of administrative regions quite marked oscillations can be observed, a slight downward trend is apparent in the majority of administrative regions. The investment ratio in South Moravia for 2007 amounted to 23.2%, which is the seventh highest among the NUTS 3 regions of the Czech Republic and its fluctuations, which – as shown above - can be severely affected by implementation of a single large investment project, illustrates the trend in the position of South Moravia. In 2003 it ranked first (31.9%), subsequently it plunged to the ninth place (24.3%) and in 2005 it forthwith returned to the region with the highest rate of investment activity (30.3%).

Figure 4.1: Regional GDP growth rates in South Moravia and Czech Republic, (previous year = 100)



Source: CZSO

The growth of GDP at constant prices in South Moravia (Table 4.4) by contrast was similar to the mean growth of the entire Czech economy throughout the time period considered. The highest growth rates in 2006 (8.1%) and 2007 (6.4%) were at the peak of economic boom in the Czech Republic. In the second half of 2008 South Moravia, however, became affected by the economic crisis; but here too – in a similar fashion as for most other regions except for Karlovy Vary – the deviations from the national average remained small.

Figure 4.1 compares regional GDP growth in South Moravia to that of the Czech Republic. As can be seen South Moravia has a higher volatility of growth and more significant deviations from the potential growth trend than the Czech Republic as a whole.

4.3 Regional disposable income and purchasing power

Data on net disposable income per capita (Table 4.5) as an indicator of the standard of living in the regions again show the leading position of Prague, which stands above the national average by one third (CZK 243,497 per inhabitant). The second is Central Bohemia – also exceeding the national average – followed by the Pilsen, and South Moravia is fourth. The regional net disposable income per capita also shows that the

variations in income at the level of NUTS 3 regions are even smaller than those of the regional GDP. These data thus suggest that until 2007 South Moravia was also among the four most well to do NUTS 3 regions in terms of disposable income in the Czech Republic.

Table 4.5: Development of net disposable income per capita at PPS, Czech Republic= 100

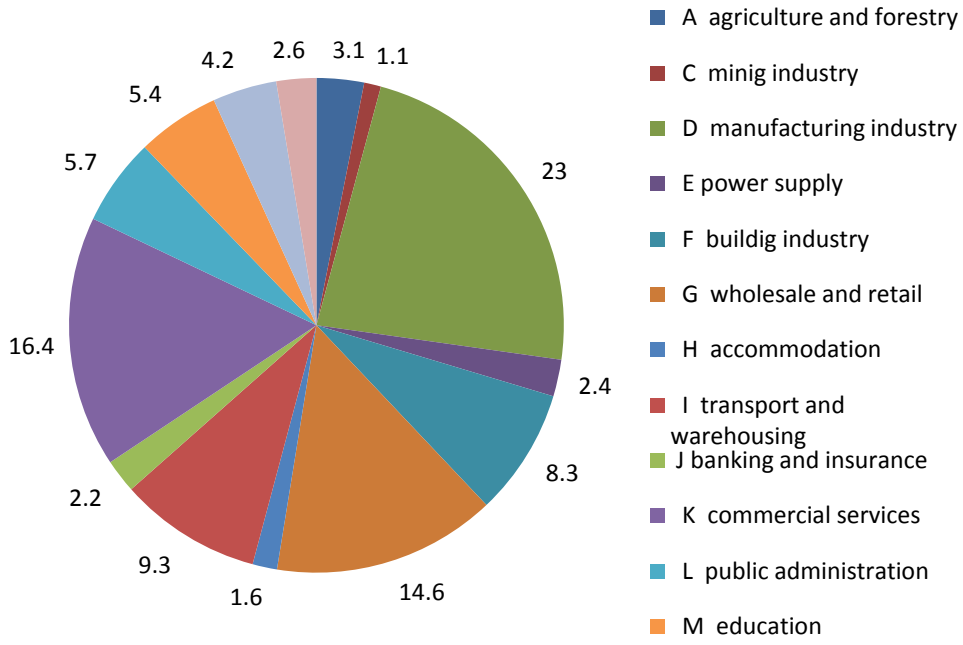
Region	1995	1997	1999	2001	2003	2005	2006	2007	2008
Czech Republic in total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Czech Republic without Prague	96.9	96.5	95.7	95.4	95.1	95.4	95.2	95.4	95.5
Regions - NUTS 3									
Capital of Prague	123.6	126.6	132.9	135.5	138.5	135.1	137.1	135.2	134.0
Central Bohemia	102.7	102.2	105.9	103.4	107.6	106.3	106.9	107.1	106.6
South Bohemia	98.4	98.4	96.4	96.6	97.0	96.7	97.6	96.3	96.6
Plzen	101.0	101.2	100.5	101.6	100.0	100.3	99.0	99.7	100.0
Karlovy Vary	96.2	98.0	95.3	93.6	92.7	89.7	89.0	88.5	88.0
Usti	95.8	94.3	91.8	90.8	88.9	88.1	88.8	86.8	87.3
Liberec	94.9	95.4	94.3	95.9	93.9	93.9	93.2	92.4	91.9
Hradec Králové	100.5	100.7	99.4	99.9	96.0	97.4	97.0	96.4	96.3
Pardubice	93.5	94.8	92.7	91.6	91.8	95.0	94.1	94.3	94.7
Vysočina	91.4	90.8	91.4	92.2	94.5	93.8	94.4	95.2	94.4
South Moravia	97.5	96.4	96.2	96.9	95.0	97.6	95.3	97.6	97.5
Olomouc	91.9	92.9	91.0	91.4	91.8	90.6	91.4	91.7	91.3
Zlin	94.5	94.4	94.4	93.7	93.5	93.4	96.0	95.8	95.3
Moravian Silesia	95.8	94.0	91.4	90.9	89.2	91.0	89.1	89.9	91.2

Source: CZSO

4.4 Economic structure of South Moravia

Because some districts of South Moravia lie in the southern rural border area, agriculture has traditionally represented a significant sector in South Moravia's economy. The relative significance of agriculture is however gradually decreasing, which applies both to employment and GDP. Some branches of industry and construction conversely have strengthened. The most dynamic development occurred in those branches of trade and services that were strongly neglected throughout the era of socialist economy. This applies both to the tertiary sector (market services such as legal, consulting etc.) as well as branches that tend to be classified in the quaternary (higher education, research) sector.

Figure 4.2: Economic structure of South Moravia in 2008 (share of total GVA in %)



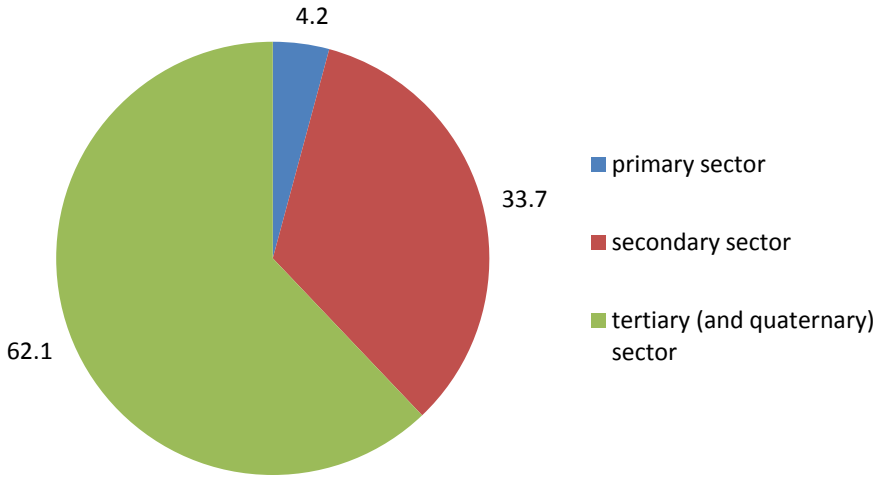
Source: CZSO

4.4.1 Primary sector

The share of the primary sector in the total GVA of South Moravia has been in decline for over 15 years now. While in 1995 the primary sector contributed 7.6% to GVA and in 2001 it still amounted to 6%, this share was only 4.2% in 2008.

This trend more or less replicates the structural changes occurring in the entire Czech economy where the share of the primary sector in GVA declined from 7.2% to 4.0%. The extraction of mineral resources accounts for roughly a quarter of the region's primary sector production. Yet traditionally, the greatest share is held by agriculture. South Moravia is endowed with the most favourable conditions for agricultural production in the entire Czech Republic due to high fertility of its land. Despite these preconditions, its share in GVA is gradually decreasing. The proportion of agriculture and forestry in GVA, decreased from 5.9% in 1995 to the current 3.1%.

Figure 4.3: Economic sectors of South Moravia in 2008 (share of total GVA in %)



Source: CZSO

The relatively high importance of farming for the economy of South Moravia, however, persists despite this downward trend. In particular the share of agriculture (and forestry) continues to be slightly above the national average of 2.5% and South Moravia continues to have the highest number of farm workers in the Czech Republic. In addition the recorded percentage share of agriculture does not take into account those spheres of the processing industry which are directly connected to farming ("agribusiness") but report their production in other sectors.

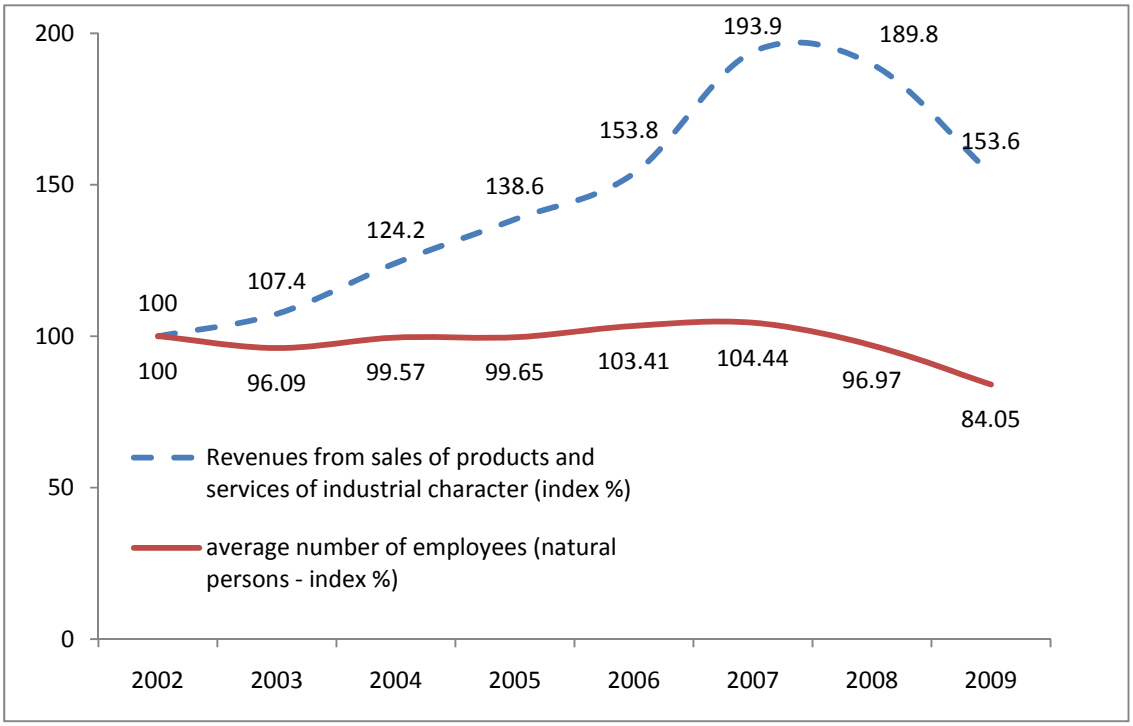
In the agricultural sector livestock production (breeding of hogs and poultry) has a high share in GVA in particular, while cereals are dominant in the vegetable production (70% of arable land). A characteristic feature of South Moravia is a relatively large number of agricultural enterprises, which is due to the interest of farmers in the restituted or privatised land on the one hand and the nature of farming activity on the other, since South Moravia is also the centre of viticulture and fruit-growing, which is characterised by low plot sizes.

4.4.2 Secondary sector

Since 1995 The share of the secondary sector in GVA slightly declined from 35.4% to 33.7% so that in 2008 it was somewhat below the national average of 36.1%. This

reduction was caused chiefly by a decrease in the category of production and distribution of electricity, heat and water (from 5.3% in 1995 to 2.4%).

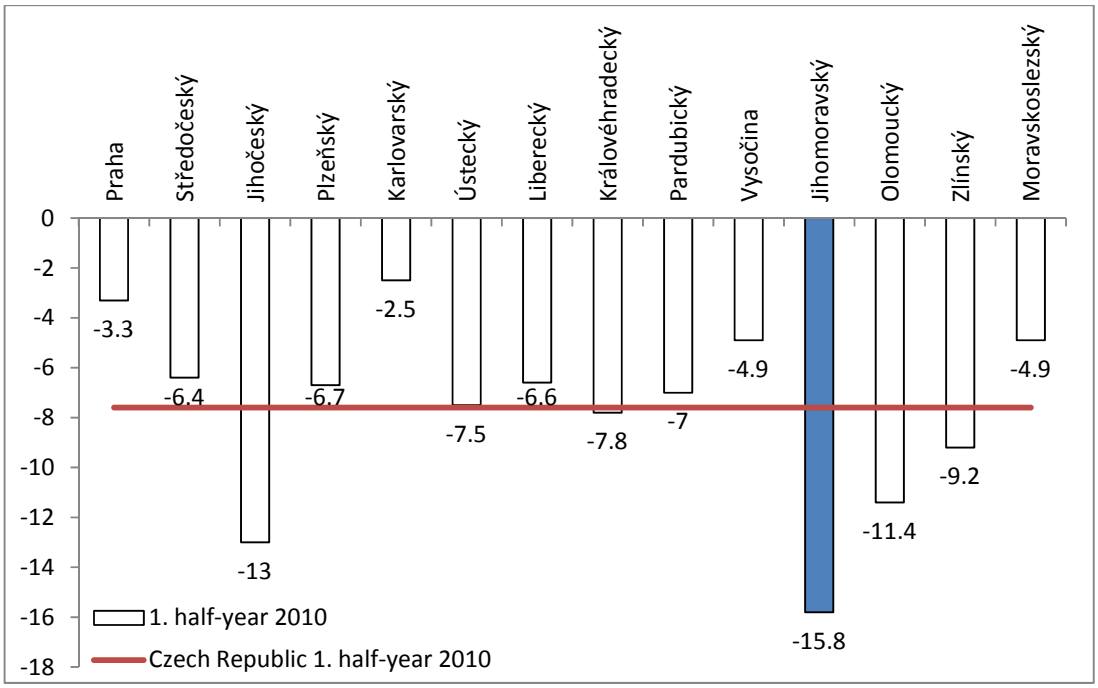
Figure 4.4: Development of selected indicators in South Moravian manufacturing (2000=100)



Source: CZSO

The manufacturing industry, which in 2008 contributed 23% to the region's GVA, is of key importance for the secondary sector in South Moravia. Among the most important fields in the region are manufacturing and service of machines and equipment, manufacturing of base metals, metallurgical and metal-working products and production of electric and optical appliances and devices. In recent years economic development strategies of many regional or municipal governments focused on the construction of industrial zones. Apart from the Černovická terasa zone of European significance, other zones of regional importance were established in Brno as well as in the majority of district towns (such as for example the industrial zones in Kuřim, Mikulov or Pohořelice).

Figure 4.5: Employment in manufacturing industry (% change 2010/2009)



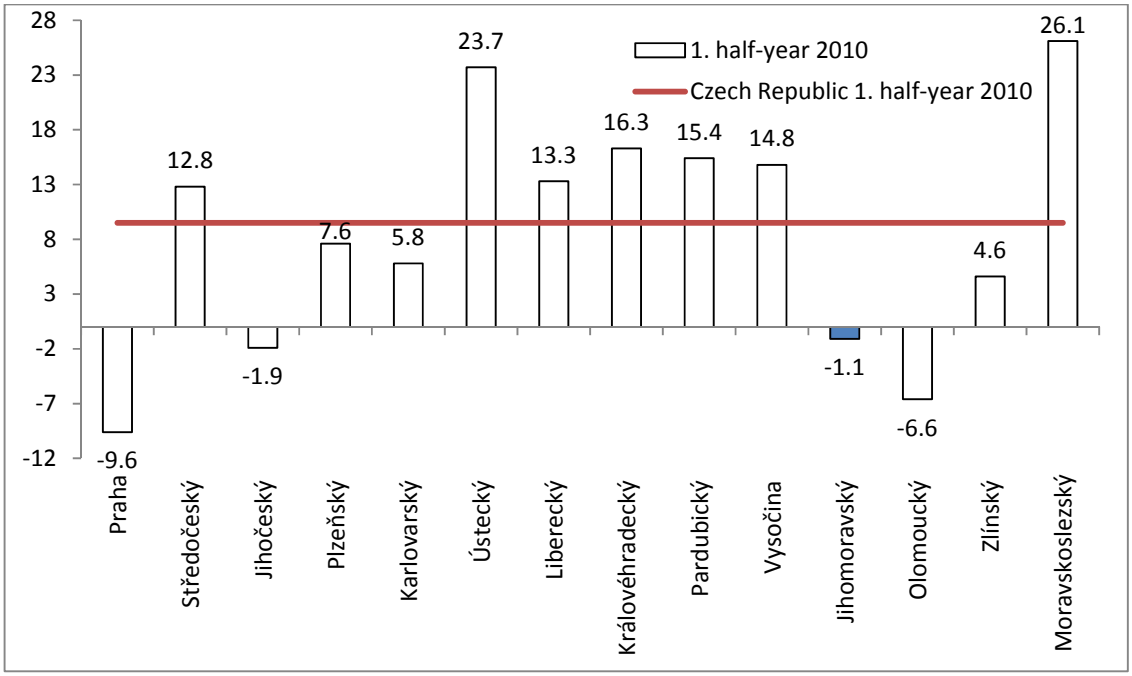
Source:CZSO

As of 2008, 286 industrial enterprises with 100 or more employees had their head office in the region thus ranking it first in the Czech Republic. Of these, 95% were operating in manufacturing. The receipts from the sales of own products and services of manufacturing sector amounted to almost 193 billion Czech crowns (CZK), which is a decrease of about 2% compared to 2007. As can be seen in the figure 4.4, however, this indicator declined for the first time since 2002 in 2008 and 2009 when the economic crisis impacted strongly on the South Moravian economy. In 2009 - according to the currently available data, - the receipts from sales of own products and services of manufacturing declined by 19% compared to 2008. Similarly, the number of employees in South Moravian manufacturing declined by 16%. In addition South Moravia also experienced deepest decline in employment in manufacturing (amounting to -15.8%) among all Czech regions (see figure 4.5). Here the reduction in employment is almost double as high in South Moravia than in the Czech Republic (-7.7%).

This adverse economic situation of South Moravian manufacturing is also reflected by the development of revenues for industrial production in 2009/2010. Revenues from sales of

industrial production produced in South Moravia exceeded 77 billion CZK in the 1st half of 2010, which amounts to 5.9% of total industrial production in all regions. This implies a decrease by 1.1% relative to the previous year. As illustrated in figure 4.6 South Moravia thus belongs to one of four regions, in which industrial production revenues declined in the Czech Republic. There were only three other regions with a decline in industrial production – Jihočeský (South Bohemia), Olomouc (Olomouc region) and Praha (Prague). In these three regions, however, the reduction was stronger than in South Moravia.

Figure 4.6: Industrial production – revenues (% change 2010/2009)



Source: CZSO

The share of construction in GVA of South Moravia stood at 8.3% in 2008, which is substantially above the national average of 6.6%. A growing importance of construction in GVA was registered especially in 2003 when an increase from 6.5% to 7.7% took place. In the post-2006 period this share continued to grow and exceeded 8% throughout.

The evaluation of the dynamics of construction during the economic crisis is complicated by the modification of the methodology of the Czech statistical office for some indicators between the surveys of 2008 and 2009 (see Table 4.6). However, when considering domestic basic construction output by location, which gives a consistent time series for

enterprises with 20 and more employees, a decline of nearly 11% for 2009 can be observed. Despite this, South Moravia belongs to the regions with highest share of total construction in the country. The ratio varied from 9-11% of total construction industry in the Czech Republic in the last three years. In terms of total number of employees South Moravia reaches the second highest level after Prague. Other construction indicators in the table also indicate a slow down relative to the preceding boom period. In addition, the decreasing number of construction permits issued in 2009, which is usually a good predictor of the construction output, suggests a further decline in 2010.

Table 4.6: Selected data for construction in South Moravia (2002-2009)

	2002	2003	2004	2005	2006	2007	2008	2009
Inland construction works [1)]	21,359	24,817	28,345	27,728	33,574	31,229	37,207	33,173
Basic building operations [2), 4)]	19,579	22,404	26,677	29,914	37,950	41,681	35,125	36,317
Number of enterprises [2), 5)]	279	275	298	310	308	296	101	110
Employees [2) 5)]	20,265	19,631	20,127	20,252	22,556	22,366	16,084	16,632
Gross monthly wage [2)]	14,745	15,930	16,937	17,668	20,546	22,503	27,614	28,571
Construction permits issued [3)]	16,612	18,314	20,344	19,735	18,227	15,028	15,256	12,118

Source : CZSO Notes 1)according to construction site (mil CZK, current prices), Enterprises with 20 and more employees 2). Modified methodology – until 2008 enterprises with minimum 20 employees were taken into account, from 2009 enterprises with 50-plus employees having a seat in the administrative region are considerd. The data for 2008 are converted according to the new methodology. 3) From 2007, a change in the name occurred – notification of construction and building permit granted. 4) in mil CZK, current prices 5) absolute numbers

4.4.3 Tertiary (and quaternary) sector

The dominant influence of Brno, the Moravian metropolis and the second largest city in the Czech Republic, in the tertiary and quaternary sectors is evident, when one considers the sectoral structure of South Moravia. Brno is the second largest centre of services with a high concentration of market services, such as legal, tax, accounting, advertising or architectural services, but also of higher education, science and research. The city is also a trade fair hub of Central Europe. From 1995, when the activities of a largely defined tertiary sector in South Moravia accounted for 57% of GVA the share of services, the share of services in total GVA increased to 62% in 2008. At the same time, the national

average was 59.9%. Values above the national average can be found particularly in the categories of wholesale and retail trade and repair of consumer goods (14.6% compared to 12.9%), commercial services (16.4% as opposed to 14.2%) and education (5.4% to 4.1%).

The present theoretical literature excludes several activities from the generally conceived tertiary sector and classifies them into the quaternary sector. Commerce, transport or repair services remain in the tertiary sector. Other services classified as public goods or as serving the development of human potential then form part of the quaternary sector. According to an even deeper differentiation, the public services such as judiciary, police or public administration are classified in the quaternary sector and services addressing the cultivation of human potential, such as education, science, research as well as health care or social services, are further categorized in the quintary sector. Such a level of differentiation of services, however, is limited by the current boundaries of statistical classifications.

4.4.4 Development of knowledge economy in the South Moravia Region

A term associated with the definition of the quinary sector and of particular importance for South Moravia – since a large number of regional development activities are focused on this topic - is the “knowledge economy”. This is the case because as already noted, Brno as the metropolis of South Moravia is the second most important centre of higher education, science and research in the Czech Republic. Apart from Masaryk University, the second largest university in the Czech Republic, Brno has four other public universities – Brno University of Technology, Mendel University, the University of Veterinary and Pharmaceutical Sciences, Janáček Academy of Music and Performing Arts, the state University of Defence – and six private colleges. Znojmo is the seat of the Private College of Economic Studies and also of several branches of universities based outside the region. In 2008, the number of university students in the South Moravia Region totalled roughly 80 000, i.e. around 20% of all university students in the Czech Republic. Of this 10% were foreign students with traditionally a high share of Slovak citizens. Nearly half of the students in the regions visit Masaryk University. A key to the development of science and research is the existence of PhD study programmes that were accredited in 2008 at public universities. The number of PhD students in those programmes was nearly 6,000. The potential for the development of science and research or for the economic development of South Moravia rests chiefly in the technical and medical disciplines and natural sciences.

South Moravia formed its first innovative strategy as early as 2002. The policy predominant in the Czech Republic at the time focused on supporting the inflow of foreign investment; the concerned branches were, however, mostly generating a fairly low added value. Somewhat in contrast to the national objectives prevailing at the time South Moravia already focused on the development of innovative potential and thus has the primacy among other Czech regions of framing regional development along the lines of this concept. The second version of the strategy from 2005 delimited biotechnology as one of the priority fields. In line with this strategy, 10,000 students were enrolled at four Brno universities in biotechnology disciplines and other 20,000 in associated technical fields of study. The strategy currently exists in its third version, in which the Region sets itself the objective of becoming one of the 50 most innovative regions of the EU by 2013[24]. With respect to the advancement of the knowledge economy in South Moravia, the following three projects can be highlighted which are markedly above the regional level.

- An already implemented project of national significance was the Campus in Brno-Bohunice of Masaryk University. Between 2002 and 2008, more than EUR 200 mil. were invested. The campus provides space for educational and research-development activities of the Faculty of Medicine, Faculty of Science and Faculty of Sports Studies. The capacity is designed for 5,000 students and 1,000 pedagogues, scientific workers and researchers. The campus includes two purpose-built premises ILBIT (Integrated Laboratories for Biomedical Technologies) and AVVA (Academic Teaching and Research Complex). The potential for biomedical research is multiplied by the connection of the Campus with the University Hospital Brno that is among the largest hospitals in the Czech Republic. Starting from October 2008 the Campus premises now also include a Biotech Incubator INBIT that provides assistance to newly established firms in the sphere of medical technologies and biotechnology.
- Another project in progress whose significance reaches greatly beyond the regional level is the realisation of the International Clinical Research Centre Brno (ICRC) in collaboration with St. Anne's University Hospital Brno and the American Mayo Clinic. One of the project's objectives is to interconnect science and research with practical medicine. The building of the centre was initiated in 2007 with the total costs of

[24] Regional innovation performance is measured by European Regional Innovation Scoreboard. Various topical documents describing both methodology and rankings of the EU countries and regions are available at: http://www.proinno-europe.eu/metrics.

construction and equipment approaching EUR 200 mil. The efforts at securing co-financing from European sources culminate at the moment.

- The third of the ambitious projects is the common plan of six universities and CEITEC (Central European Institute of Technology) research centres. The project disposes of a budget of EUR 208 mil. and also aspires to obtain funds from the Operational Programme Research and Development for Innovations. The project achieved high ranking in the evaluation process of the Czech Ministry of Education and now awaits the final decision of the European Commission. The institute's concept is based on the synergic effect of seven research programmes (e.g. nanotechnology and micro technology, molecular medicine or brain and mind research).

Of a rather different nature is the Technology Park that was established on 60 hectares around the Brno University of Technology already in the mid-1990s. It is a development zone designed especially for light hi-tech industry and strategic services. The immediate vicinity of the Brno University of Technology offers a pool of highly educated workers used for instance by Motorola, IBM, Vodafone or Honeywell Controls. On the premises also the South Moravian Innovation Centre (JIC) that forms complex infrastructure for innovative enterprises of South Moravia is situated. Two technological incubators were built on the Brno University of Technology premises under the management of JIC, which concentrate tools of assistance for newly launched enterprises in the branches of knowledge economy. JIC also participated in the selection of suitable disciplines for the cluster in the South Moravia Region that identified the aforementioned sphere of biotechnologies as prospective. Clusters (www.jic.cz/klastry) are defined as geographically close groupings of interconnected firms, specialized suppliers, and providers of services and associated institutions in a specific field and of firms in related fields that compete but also cooperate with each other. The support to clusters is applied as an instrument of regional policy. South Moravia includes several clusters in diverse branches of the national economy (e.g. biotechnology, aeronautics industry). [25]

[25] In addition two activities of a slightly different nature but of high importance are the South Moravian Centre for International Mobility (JCMM), which is a non-profit organization which provides support to talented students and researchers based in the South Moravian Region and the program SoMoPro which is an important regional grant program of the JCMM that supports the inflow of foreign scientists and reintegration of Czech scientists

4.5 Labour market in South Moravia

In the Czech Republic, two datasets containing labour market information are available. More attention is paid to the data on the registered rate of unemployment. The Ministry of Labour and Social Affairs primarily publishes and applies these data, but they can be acquired also from the CSO databases. The main advantage of this data is that they are up-to-date (because they are published every month) and can be used at a regional disaggregation down to the municipal level. An important modification to the methodology occurred in 2004. Until then, the numerator of the registered unemployment rate included all registered, unplaced applicants for employment at the work office in the district of their domicile. Now this numerator (from 2005) includes only the available unplaced applicants for employment[26].

Table 4.7: Registered unemployment rate in % as of 30 September 2010

Region	Registered rate of unemployment in %		
	Total	Women	Men
Czech Republic total	8.5	10.2	7.3
Capital of Prague	4.0	4.7	3.6
Central Bohemia	7.0	8.7	5.7
South Bohemia	6.7	8.5	5.4
Plzen	7.3	9.0	6.0
Karlovy Vary	10.2	11.1	9.4
Usti	12.9	15.9	10.8
Liberec	10.0	12.2	8.4
Hradec Králové	7.1	8.7	5.9
Pardubice	8.2	10.0	6.9
Vysočina	8.6	10.7	7.0
South Moravia	9.5	11.0	8.4
Olomouc	10.6	12.9	8.8
Zlin	9.6	11.1	8.5
Moravian Silesia	11.5	13.4	10.0

Source : Ministry of Labour and Social Affairs (MLSA)

[26] Available unplaced applicants are all unemployed applicants registered at the labour agency, seeking for job actively and ready to start working immediately after being offered a new job.

The general unemployment rate is compiled by the CSO exclusively on the grounds of results of a selective survey of labour forces (the Czech Labour Force Survey) conducted in a three-month periodicity. On its basis, the CSO elaborates a wide spectrum of indicators, although with time delays occurring especially in the case of data at the regional level. The data concerning the general unemployment rate are therefore somewhat less up-to-date. Their advantage, however, is their full compatibility with international methodology (ILO). In the long run, the general unemployment rate in the Czech Republic is by around 1-2% lower than the registered unemployment rate.

Table 4.8: Average annual unemployment rate in % in period 2004-2009

Region (kraj)/Year	2004	2005	2006	2007	2008	2009
Czech Rep. total	**9.2**	**9.0**	**8.1**	**6.6**	**5.4**	**8.0**
Capital of Prague	3.6	3.4	3.0	2.5	2.1	3.0
Central Bohemia	6.6	6.3	5.7	4.6	4.0	5.8
South Bohemia	6.1	6.3	6.0	4.8	4.0	6.5
Plzen	6.7	6.4	5.9	4.9	4.2	7.0
Karlovy Vary	10.2	10.2	9.5	8.0	6.9	9.9
Usti	15.9	15.4	14.5	12.2	9.9	12.4
Liberec	8.4	7.8	7.4	6.5	6.0	10.0
Hradec Králové	7.1	7.3	6.6	5.2	4.2	6.8
Pardubice	8.3	8.3	7.3	5.8	5.0	8.0
Vysočina	8.3	8.2	7.4	6.1	5.2	8.7
South Moravia	10.3	10.1	9.2	7.6	6.2	8.9
Olomouc	11.2	11.0	9.6	7.4	6.2	10.2
Zlin	9.4	9.2	8.4	6.6	5.5	9.1
Moravian Silesia	15.4	14.7	13.4	11.0	8.4	11.1

Source: MLSA

The situation in the labour market in the Czech part of the CENTROPE is again determined by the dichotomy between the Brno agglomeration and the southern rural border area. While in the long run, the unemployment rate in the Brno conurbation is slightly below the national average, some microregions in the southern rural border area are among the most affected by unemployment in the whole of the Czech Republic. Table 4.7 includes the current data on the registered unemployment rate in the administrative regions as of 30 September 2010. The registered unemployment rate in South Moravia

was 9.5% and thus exceeded the unemployment rate in the Czech Republic by one percentage point ranking eighth among 14 regions.

Comparing current data with the past development in Table 4.8 we can see that the unemployment rate is higher by 0.4 percentage points in September 2010 as compared to the average of 2009 in South Moravia. This is in line with the general development of rising unemployment rate in the Czech Republic. The impact of global economic crisis on national as well as regional rates of unemployment is clear when comparing the year 2009 with the previous period. After years of continuous decline in almost all regions in the Czech Republic, the rate of unemployment increased substantially in 2009 in all regions. After the boom year of 2008 the rate of unemployment increased by 2.7 percentage points in 2009, reaching the level of 8.9%. More recently the growth of unemployment seems to continue (see table 4.7). Taking into account the recent outlook for manufacturing industry and construction in South Moravia, we can hardly expect a remarkable decrease in unemployment rate in the next forthcoming quarters.

At the regional, microregional and local levels, the severity of unemployment in individual regions becomes stronger. As shown by data on the mean unemployment rate at the districts, (NUTS 4 regions) published by the MLSA (see Table 4.9) in the last six years, this situation as a rule has been particularly unfavourable in the districts of Hodonín and Znojmo, which are marked by an unemployment rate substantially above the national average.

Table 4.9: Average unemployment rate (in %) in the districts of South Moravia (NUTS 4)

District	2004	2005	2006	2007	2008	2009
Blansko	8.4	8.4	7.0	6.0	5.5	9.9
Brno-město	9.8	9.5	8.5	6.9	5.5	7.3
Brno-venkov	7.3	6.9	6.2	5.1	4.2	6.5
Břeclav	10.3	10.6	9.8	8.2	6.1	9.4
Hodonín	13.7	14.3	13.8	11.3	9.8	13.4
Vyškov	9.9	9.2	7.6	5.7	4.4	7.7
Znojmo	12.9	13.0	12.9	11.6	9.6	12.3
Czech Rep. Total	9.2	9.0	8.1	6.6	5.4	8.0

Source : MLSA

In part the high unemployment rates in these districts are due to seasonality. The districts situated in the southern rural border area have a typical fluctuation of unemployment throughout the year with a substantial increase during the winter months (Table 4.10). In particular Hodonin and Znojmo have values of unemployment in January exceeding the 17% level. The effects of seasonality were dampened in years 2009 and 2010 when unemployment rates increased generally in all regions due to global economic crisis consequences.

Even bigger disparities tend to arise at the level of microregions that can be delimited based on different principles within the framework of districts. In January 2010 the registered unemployment rate in the municipality of Vranov nad Dyjí was 25% and 21.2% in the constituency of Hrušovany nad Jevišovkou. Both microregions belong to the district of Znojmo. If we look closer at the unemployment in the municipalities of the Znojmo district, the rate of unemployment in 17 municipalities (NUTS 5) exceeded 30% and in one extreme case (Zálesí) even 48.8%.

Table 4.10: Registered unemployment rate (in %) in the districts of South Moravia (NUTS 4)by selected months (2008 – 2010)

District	1/2008	7/2008	1/2009	7/2009	1/2010	7/2010
Blansko	5.7	5.5	8.0	10.7	11.7	9.7
Brno-město (city)	5.9	5.6	6.1	7.8	8.5	8.6
Brno-venkov (country)	4.7	4.2	5.0	6.8	8.7	8.1
Břeclav	7.6	5.5	8.3	9.6	13.2	9.9
Hodonín	10.8	9.6	12.3	13.5	17.1	13.9
Vyškov	5.2	4.1	6.2	8.0	10.6	8.2
Znojmo	12.1	8.4	12.6	11.4	17.2	10.9
South Moravia	7.0	6.0	7.7	9.1	11.3	9.6
ČR	6.1	5.3	6.8	8.4	9.8	8.7

Source : MLSA, Note 1 refers to January value, 7 is the July value

The indicators of employment rate according to ILO method (i.e. based on CSO sources) are only available up to the last quarter of 2009. According to this indicator, however, the South Moravia Region ranks 9th, 1.3% below the national average. A fairly striking disparity is also apparent between the employment rate of men and women – 62.2% and 44.9%, respectively.

4.6 Tourism in South Moravia

South Moravia also offers a fairly attractive mixture of locations for tourism especially for short- and medium-term tourists. On the one hand Brno, the second largest city in the Czech Republic, has the potential for the development of urban tourism, in particular on account of its modern architecture sites (e.g. the Tugendhat villa), which are competitive even at the European scale. Brno is also the most important trade fair city in the Czech Republic (which leads to substantial business tourism) and the second most important centre of the congress tourism. On the other hand the rural areas of the region characterized by a fairly unburdened environment. The most visited site in the region is the cave complex of the Moravian Karst, including the Macocha Abyss, in the north of the region (360,000 visitors in 2008). The second most frequented tourist destination is the Lednice State Chateaux (331,000 visitors in 2008) that forms part of another UNESCO monument – Lednice-Valtice Area. Near the border to Austria, in the south of the Region, lie the UNESCO Lower Morava Biosphere Reserve and the Podyjí National Park. The rural character of the Region predestines it for the development of sustainable forms of tourism, such as agrotourism, cyclotourism or wine tourism.

An advantage for the development of tourism is the excellent accessibility of the Region with the motorways Brno – Prague, Brno – Bratislava region, Brno – Vyškov – North Moravia, and partly Brno – Vienna as well as two rail corridors with the railway junction of Břeclav and the international airport in Brno Tuřany. The use of the tourist potential is, however, currently also strongly confined by the poor quality of tourist infrastructure (namely accommodation boarding facilities but also the provision of the accompanying services).

In 2009, according to the records in the accommodation facilities 1,046,234 tourist visited Moravia Region, of whom 352,018 were foreigners. This means that the Region ranked second in terms of popularity among tourists after Prague. The Region accounted for 8.6% of total tourist arrivals. The other indicators, however, suggest a rather problematic development. For instance with respect to tourist nights (2 070 949) South Moravia Region lags not only behind Prague but also behind the Karlovy Vary, Hradec Králové, South Bohemian and Liberec. The result is the shortest length of stays (3.0 days or 2.0 nights) among all of the Czech administrative regions. According to this indicator, Karlovy Vary as an important European centre of balneology (the triangle Carlsbad – Marienbad – Franzensbad), is the most successful region. This region is followed by the Hradec

Králové and Olomouc Regions because the Czech and Moravian mountains most significant for tourism (Krkonoše. and Jeseníky) are situated on their territories. The short length of stay in South Moravia is thus to a great extent caused by the lack of notable spa or mountain centres, which have the longest duration of stay. On the other hand, the last position in this indicator clearly points to the importance of developing tourist potentials (expansion and quality improvement of the offered services combined with a more efficient marketing promotion).

The development of tourist arrivals to the region is negative, too. While between 2004 and 2008 the annual increment in the number of tourists was 4%, in 2009 the tourism in the region became severely affected by the economic crisis. The number of visitors declined from 1.2 million in 2008 to 1.04 million. This reduction of almost 12% was the most severe among all of the administrative regions of the Czech Republic.[27]

Tab. 4.11: Tourist visits in mass accommodation facilities by administrative regions in 2009

	Guests			Overnight stays			Average number of overnight stays	Average length of stays (days
	total	in % of 2008	non-residents	total	in % of 2008	non-residents		
Czech Republic	12,105,287	94.3	6,081,244	36,934,558	94.0	17,880,519	3.1	4.1
Regions								
Capital Prague	4,346,079	94.7	3,803,518	11,243,453	92.4	10,176,343	2.6	3.6
Central Bohemia	641,105	96.4	152,961	1,708,385	94.6	383,946	2.7	3.7
South Bohemia	923,715	98.7	284,541	2,878,787	97.4	660,298	3.1	4.1
Plzen	479,705	98.4	148,113	1,427,011	98.5	347,209	3.0	4.0
Karlovy Vary	660,560	97.1	453,106	4,150,202	93.2	2,995,922	6.3	7.3
Usti	336,324	91.8	108,486	971,319	86.2	275,040	2.9	3.9
Liberec	675,722	96.0	172,916	2,461,759	101.2	660,830	3.6	4.6
Hradec Králové	839,451	93.0	234,167	3,217,133	95.0	873,061	3.8	4.8
Pardubice	337,698	93.6	50,413	974,152	92.0	132,176	2.9	3.9
Vysočina	366,298	92.5	51,305	924,960	93.5	111,892	2.5	3.5
South Moravia	1,046,234	88.2	352,018	2,070,949	90.1	604,645	2.0	3.0
Olomouc	392,483	92.0	85,417	1,443,812	93.7	184,348	3.7	4.7
Zlin	458,405	92.2	65,185	1,557,318	92.6	179,587	3.4	4.4
Moravian Silesia	601,508	94.0	119,098	1,905,318	98.8	295,222	3.2	4.2

Source : CZSO

In July, 2010, South Moravia region ordered an expert analysis of the decline in tourist arrivals which describes the causes and attempts to suggest measures promoting

[27] The number of nights in the Region decreased by nearly 10 %, which was the second largest decline after the Ústí Region.

development. With respect to the CENTROPE area, it is this analysis states that the Centrope region of Lower Austria and South and West Slovakia can be considered as competing destinations (similar type of landscape, similar activities such as agrotourism, cyclotourism or wine tourism). On the other hand, In Lower Austria, there are obvious synergic effects in the case of common development (joint marketing, broader and thus more attractive offer for potential visitors).

4.7 Conclusion and outlook

As of the second half of 2008, the Czech Republic was increasingly affected by the economic crisis. Following the preceding boom years of 2005 to 2007 with a growth rate of over 6%, the Czech economy still recorded positive GDP growth of 2.5% in 2008. However, the year 2009 was marked by the largest decline in GDP (of -4.1%) since 1991. This adverse macroeconomic situation is also reflected in the development at a regional level. Between 2005 and 2007, the Czech part of the CENTROPE– South Moravia Region – experienced a strong boom that peaked in 2006, when the GDP grew by 8.1%. The year 2008 introduced a perceptible economic downturn as the growth rate dropped to 2%. The data on regional GDP for 2009 at the time of writing of this publication are not yet available; partial indicators nevertheless show a decline of economic activity in a series of branches of the national economy. The impacts of the global crisis were felt chiefly by the South Moravian industry that in 2009 experienced a slump in receipts of 19% and a high decline in the number of employees by 16%. Slightly smaller declines occurred in construction, which reported a downturn of basic construction output of nearly 11% in enterprises with 20 and more employees. In addition tourism plummeted with the number of visitors to the region dropping by roughly 12%, a number comparable with the other branches, but the greatest reduction in the whole Czech Republic. South Moravia responded to this by elaborating an analysis on the causes of this decline.

Results for 2010 haven't yet been made available for the Czech Republic. The Czech economy is predicted to grow by 2%. During the previous months, a dynamic recovery of industry can be observed and record increments are reported by Czech exports (but also imports). Czech construction continues to have negative prospects. At the level of regions, however, preliminary data for the first half of 2010 are already available. These indicate that the South Moravia Region has not yet managed to overcome the economic crisis. In comparison to the whole Czech Republic, the situation of the region's industry, which appears to be the engine of economic recovery in the majority of the other administrative

regions, remains problematic. While the receipts of industrial enterprises with 100-plus employees increased nationally by 9.5% as compared to the first half of the crisis year 2009, South Moravia is among four administrative regions characterized by a further downturn of economic production even in the first half of 2010 (-1.1%). Still more adverse is the situation in the case of employment in the industrial sector. This shows substantial decline even at a national level (-7.6%); nonetheless, South Moravia recorded even faster job loss (-15.8%). The same applies to South Moravian construction which recorded a slump in the number of jobs of 23.3% (national average was -5.1%) in enterprises of 50-plus employees. In the first half of 2010 the basic production plunged by nearly 36% compared to the previous year. The same slump occurred also in Liberec; however the performance of South Moravia still lags far behind the national average (-10.4%). Despite a marked decrease in the number of employees, the productivity of labour also witnessed a deep drop of 16.3%. In the context of the previous numbers, the available data on trends in tourism are slightly less negative. Yet the decline in tourist arrivals to the Region from 2009 continued although its pace slowed down to -4.7%.

The current statistical data thus suggest that South Moravia has been affected by the economic crisis more severely than the majority of other Czech administrative regions. The results in 2008 and 2009 are still relatively comparable with the national values, but data available for the first half of 2010 are more alarming. Although the data are preliminary or relate only to some branches of the economy and only to selected groups of enterprises in terms of size, it could be that in 2010 South Moravia may be losing its traditional positions in some of its important branches of the economy (particularly in manufacturing).

If we consider the medium-term perspectives of South Moravia, however, the biggest development potential rests in the knowledge economy. This is due to the position of Brno as a significant university centre characterized also by the concentration of a number of scientific and research centres. Apart from a range of partial activities, two projects of national significance are being developed currently in Brno whose respective budgets total approximately EUR 200 mil. and which attempt to obtain funds from the European sources (ICRC, CEITEC). The branches of knowledge economy are attractive particularly because they tend to generate high added value and, in contrast to some branches of manufacturing industry, generate jobs that are much better rooted in the region.

5. Regional Development in the Hungarian CENTROPE

5.1 Introduction

The Hungarian CENTROPE region includes the counties of Győr-Moson-Sopron and Vas. Both of these are NUTS 3 regions. These two counties account for 71.0% of the total population of West Transdanubia (which is the NUTS 2 in which these two counties are located) and 7.1% of total Hungarian population. The total number of inhabitants in the Hungarian CENTROPE has been stagnating in recent years due to a negative natural population growth and a positive internal migration balance. It currently numbers around 708 thousand persons. In the context of the European Union, both counties – as most of the CENTROPE regions in the new member states – belong to the Objective 1 areas (see Table 5.1). The average GDP per capita of the Hungarian CENTROPE was 66.1% of the EU average, which is by 3.4 percentage points higher than the Hungarian average. In 2007, however, the relative position of the Hungarian CENTROPE with respect to GDP per capita declined by -3.1 percentage points.

Table 5.1: GDP development in the Hungarian CENTROPE Region 2007

	GDP per capita in PPS		
	EU 27=100,0	Changes relative to previous year	
		percentage points	in %
Győr-Moson-Sopron	70.3	–2.7	+1.6
Vas	58.8	–4.1	–1.3
Hungarian CENTROPE	**66.1**	**–3.1**	**+0.6**
Hungary	62.7	–0.9	+4.0

Source: Based on CSO Hungary WHRI calculation

- *Győr-Moson-Sopron* – has 448 thousand inhabitants (1st of January, 2010). It has borders with Austria and Slovakia. The major urban centers are Győr, Sopron and Mosonmagyaróvár. It is the second richest county in Hungary with strong industry but also with high value of natural reserves. Győr has close economic ties and interrelations in the region beyond the country border of Slovakia in the same way as does Sopron at the Austrian border. Mosonmagyaróvár and its region has a new growing potential because of the starting suburbanization of Bratislava region through the Hungarian border in last two to three years.

- *Vas* – has 259 thousand inhabitants (1st of January, 2010). It has borders with Austria and Slovenia. The largest city is Szombathely. Among the second level urban centers Szentgotthárd (manufacturing), Sárvár (manufacturing, spa and wellness) and Bük (spa and wellness) are in a better economic position, however. Vas is also rich in natural resources. The Austrian border is economically important in particular for Szombathely mainly due to the potential of daily commuting of the labour force, which has been facilitated by special institutional arrangements (the so called Grenzgängerabkommen) which provide work permits to cross-border commuters in Burgenland and some districts of Lower Austria. At the same time services of Szombathely and Kőszeg and the larger spa resorts (Bük and Sárvár) have benefited from the short distance from the border.

The two counties had a very similar development at the beginning of the transitional period in Hungary. Both Győr-Moson-Sopron and Vas were known for the high degree of internationalisation of their economy. However, the parallelism of the internationalisation process came to a stop at the beginning of the new decade. The new industries that had settled in Vas were rather labour intensive with low added value and were thus highly susceptible to changes in the market structure. This led to a number of firms relocating their production out of the region in the late 1990's and early 2000's. As a consequence GDP growth of Vas showed rather erratic fluctuations in the last decade. (see Table 5.2) In general, however, it lost position with respect to GDP growth as well as GDP per capita levels relative to the national average in the second half of the 2000's. While in 1997 Vas was still the region with the second highest per capita GDP growth among the Hungarian regions, in the time period since 2004 Vas oscillated between the fourth and the fifth place and the distance to the national average GDP growth increased very rapidly since 2005.

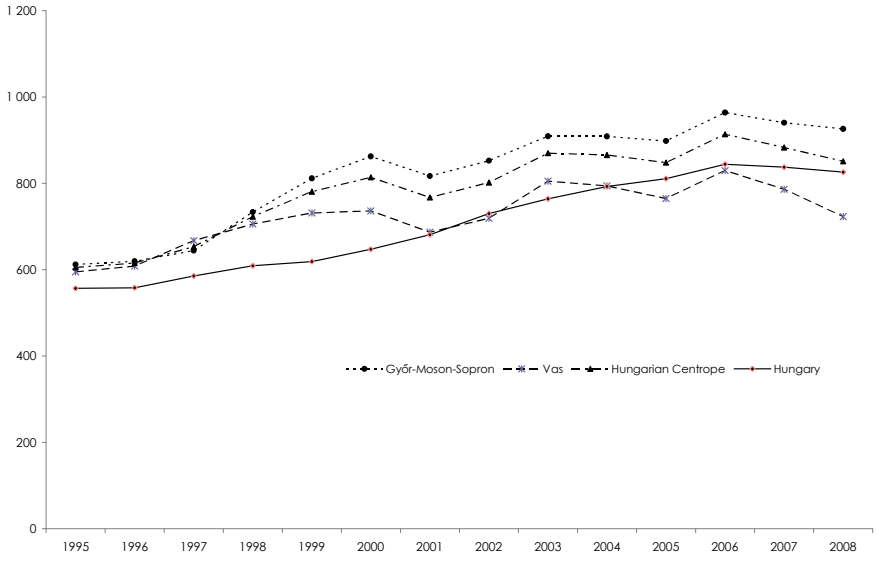
Similarly also the relative growth advantage of Győr-Moson-Sopron in the Hungarian CENTROPE reduced in the second period of the 2000's. However, this county kept the second best position among the Hungarian regions regarding per capita GDP throughout the time period considered in table 5.2. The reason for the slightly decreasing distance to the national average here was the increased growth of Central Hungary, which is the NUTS 2 level region to which Budapest as NUTS 2 region belongs.

Table 5.2: The position of Hungarian CENTROPE Region in GDP development 1998-2008

	1998	1999	2000	2001	2001	2003	2004	2005	2006	2007	2008
	GDP growth (current price, previous year =100)										
Győr-Moson-Sopron	130.2	121.9	116.9	103.6	111.0	111.7	106.9	102.6	111.9	105.7	105.0
Vas	120.5	113.5	110.1	101.7	109.9	116.7	104.9	99.4	112.3	101.9	97.1
Hungarian CENTROPE	**126.3**	**118.7**	**114.5**	**103.0**	**110.6**	**113.4**	**106.2**	**101.5**	**112.0**	**104.4**	**102.4**
Hungary	118.6	111.5	114.5	114.6	112.6	109.3	110.6	105.7	108.0	107.0	104.5
	GDP per capita in the national average (%)										
Győr-Moson-Sopron	120.4	131.1	133.2	120.0	116.8	119.0	114.6	110.8	114.2	112.3	112.1
Vas	115.9	118.2	113.7	100.9	98.5	105.4	100.1	94.4	98.3	93.9	87.5
Hungarian CENTROPE	**118.7**	**126.1**	**125.7**	**112.7**	**109.8**	**113.8**	**109.2**	**104.6**	**108.2**	**105.5**	**103.0**
	County rank according to GDP per capita										
Győr-Moson-Sopron	3	2	2	2	2	2	2	3	2	2	2
Vas	4	3	4	4	3	3	4	5	4	5	5

Source: Based on CSO Hungary WHRI calculation

Figure 5.1: GDP development of the Hungarian CENTROPE region 1995-2008 (billion HUF, 1995=100)

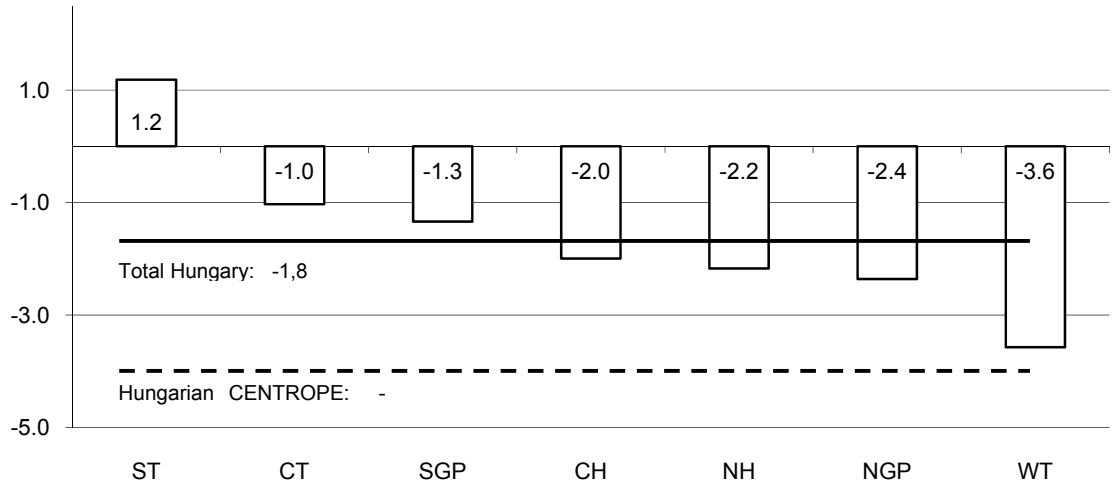


Source: Based on CSO Hungary WHRI calculation Note: Figure report real GDP per capita

This picture is also confirmed when looking at the growth of real GDP (i.e. at constant prices) in the Hungarian CENTROPE. Also here the economic performance of Győr-Moson-Sopron has started to slow down in the second half of the 2000's. (see Figure 5.1), which is the period when some of the traditional light industries – such as the textile and the shoe industry – relocated their production away from the Hungarian CENTROPE.

In addition figure 5.1 also suggests that as of 2006 this process of relocation combined with an – in comparison to most other new member states of the EU – less favourable economic development of the Hungarian economy, had become strong enough for both Vas and Győr-Moson-Sopron to experience a decline in real GDP per capita and thus suggests that at least in real terms the Hungarian CENTROPE had already been in economic decline before the worldwide financial and economic crisis. At the outset of the crises in 2009 the region was thus already facing problems associated with substantial internal restructuring.

Figure 5.2: GVA growth of Hungarian NUTS 2 regions in 2007
Real (on basis of prices of the previous year), Changes relative to 2005 in %

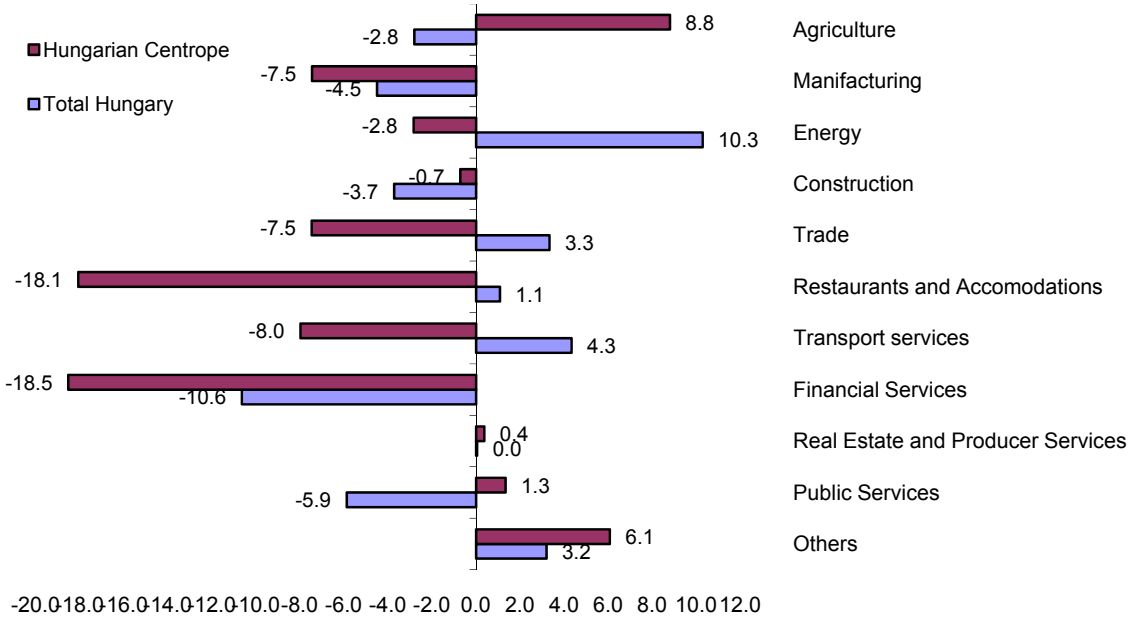


Source: Based on CSO Hungary edited by WHRI Legend: ST – South Transdanubia, CT – Central Transdanubia, SGP – South Great Plain, CH – Central Hungary, NGP – North Great Plain, NH – North Hungary, WT – West Transdanubia.

Furthermore, this real decline also affected the majority of sectors located in the region (see Figure 5.3). Aside from agriculture, construction (which although declining, did so by

less than the Hungarian average), real estate, producer services and public services as well as the rest category of “Other Sectors”, all of the major economic sectors in the Hungarian CENTROPE already experienced a more pronounced decline in real GVA than in the Hungarian average between 2005 and 2007, which is the last year for which data on regional GVA is available in Hungary. Among the sectors restaurants and accommodation and financial services lost more than 18% of their GVA and manufacturing as well as trade and transport services experienced declines of more than 5% in real terms in this three year period.

Figure 5.3: Sectoral GVA Growth of the Hungarian CENTROPE Region and in Hungary 2007 Real (on basis of prices of the previous year), Changes relative to 2005 in %



Source: Based on CSO Hungary edited by WHRI

Despite the industrial restructuring, however, the Hungarian CENTROPE and even more so Györ-Moson-Sopron remain to be one of the richer regions of Hungary, which has a stronghold in the export oriented manufacturing sector (in particular in the automotive and related industries). This is evidenced by Table 5.3, which shows that the Hungarian CENTROPE had a share of industry in total gross value added that amounts to 39.1% in 2007, which is the second highest share in Hungary after Central Transdanubia (41.6%) but that its share of manufacturing in total exports was 83.2% in the first half of 2010 and

thus higher than of any other region in Hungary even Central Transdanubia (82.6%). Furthermore as also shown in table 5.3 this characteristic is even truer of Győr-Moson-Sopron, where the share of manufacturing in total GVA was 42.6% and the share of manufacturing exports was 85.4% while in Vas this ratio was 32.1% to 80.9%

Table 5.3: Factors influencing regional growth in Hungary in 2007

	Share of export in Manufacturing	GVA in Manufacturing[1]	GVA in Producer Services[2]
	% of sold production[3]	% of total GVA	
Győr-Moson-Sopron	85.4	42.6	15.9
Vas	80.9	32.1	16.7
Hungarian CENTROPE	**83.2**	**39.1**	**16.1**
West Transdanubia[4]	82.4	36.7	16.7
Central Transdanubia	82.6	41.6	15.3
South Transdanubia	62.4	14.1	18.6
South Great Plain	38.2	20.0	16.2
North Great Plain	45.3	22.0	16.1
North Hungary	65.8	29.5	14.3
Central Hungary[5]	43.2	15.7	29.6
Hungary	59.2	22.0	22.5

1) Including Mining; 2) NACE-2-digits: 3) in first half of 2010; 4) Győr-Moson-Sopron, Vas and Zala counties; 5) Including Budapest. Source: Based on CSO Hungary, WHRI Calculations.

5.2 Economic development in the Hungarian CENTROPE 2009 and first half of 2010

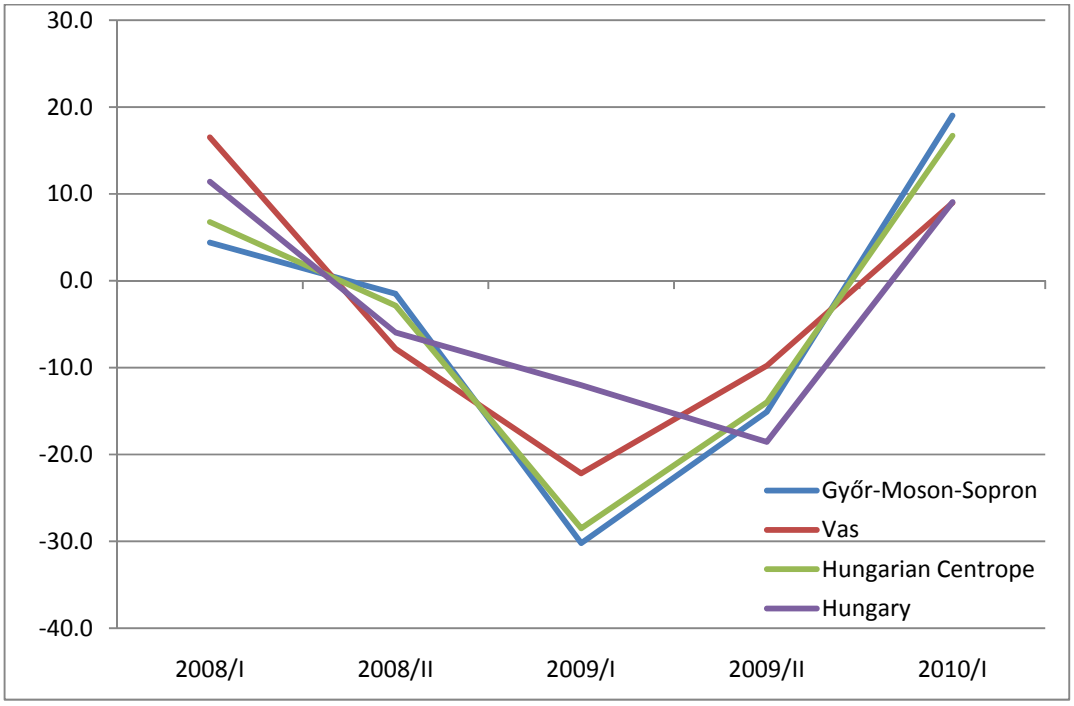
Given this dominant position of export oriented manufacturing in the economic structure of the Hungarian CENTROPE and given that the economic and financial crises affected primarily worldwide exports and through exports the manufacturing sector, it should not come as a surprise that the Hungarian CENTROPE could not isolate itself from the world wide decline and was more strongly affected by the crises than most other Hungarian regions.

5.2.1 Manufacturing

In particular according to data on the production value in manufacturing (see figure 5.4), the manufacturing sector of the Hungarian CENTROPE entered recession already in the second half of 2008. In the early phases of this recession this decline was faster and

deeper in the Hungarian CENTROPE than in the national average. But as time progressed the crises proved to be also shorter and to lead to a quicker restoration of growth than in the national average, in particular in the industrially slightly more developed Győr-Moson-Sopron region.

Figure 5.4: Production Value of manufacturing – Change to previous year in %



Source: Based on CSO Hungary, WHRI Calculations.

By the first semester of 2009 the crisis affected the entire region, and declines (amounting to almost 30% in Győr-Moson-Sopron and over 20% in Vas) in the Hungarian CENTROPE exceeded the Hungarian average by more than 15 percentage points. In sum thus the Hungarian CENTROPE on account of its export oriented industrial structure was more immediately affected by the economic and financial crisis than the other Hungarian regions.

Data for the period after the first semester of 2009, however, - indicates that with the beginning recovery of world trade and the associated recovery of manufacturing, the manufacturing sector of the Hungarian CENTROPE as an aggregate also felt the improvement in the business cycle situation somewhat earlier than most other Hungarian

regions. By the second half of 2009 manufacturing in the Hungarian CENTROPE had already returned to growth and the growth performance exceeded the national average also in the first half of 2010.

This applies both to the indicators of sold and technical production, which were 6-7 percentage points lower than the national average in the Hungarian CENTROPE in 2009. (see Table 5.4) and where Vas moved together with the country average, but Győr-Moson-Sopron had a much larger loss. These indicators started to increase again in the first half of 2010, with the size of change being much larger in Győr-Moson-Sopron than in Vas and the increase of production (sold and technical) in this region exceeding that of Vas by a factor of 4 to 5. Furthermore due to the usual lag between employment and production increases in manufacturing, productivity of manufacturing also increased in the first semester of 2010 (see Table 5.5) with Vas performing slightly better on account of a strong (15%) reduction in the number of employees.

Table 5.4: Development of manufacturing

	Production sold	Technical Production	Production index 2005 = 100	Production sold	Technical Production	Production index 2008 = 100
	Year 2009			1. Half-year 2010		
	Percentage changes to previous year					
Győr-Moson-Sopron	– 25.9	– 26.3	– 15.9	+ 12.0	+ 13.7	– 23.8
Vas	– 18.7	– 20.0	– 26.9	+ 2.5	+ 4.1	– 22.3
Hungarian CENTROPE	– 24.4	– 25.0	– 18.1	+ 9.8	+ 11.5	– 23.5
Hungary	– 17.8	– 18.6	– 12.6	+ 22.0	+ 4.2	– 12.0

Source: Based on CSO Hungary, WHRI Calculations.

Despite the better development in the second half of 2009 the full year 2009 was, however, marked by substantial (and well above average) declines in manufacturing output. In total technical production declined by -25.0% in the Hungarian CENTROPE and production sold by -24.4%, with the effects somewhat more pronounced in Győr-Moson-Sopron than in Vas on account of the somewhat weaker development of this region (see table 5.4). Manufacturing employment declined by -14.1% (relative to -6.8%), with the decline here being somewhat stronger in Vas (-16.8%) than in Győr-Moson-Sopron (-12.4%) and productivity – on account of substantial labour hoarding in the early phases of recession and in contrast to the long term development – by -9.0 (which is exactly the

national average) with slight productivity increases being registered only in Vas, due to the fact that in this region the employment decline was more pronounced in 2009. Only nominal manufacturing wages increased slightly (by 2.2%) in the Hungarian CENTROPE in 2009 (see table 5.5). The reason for this is, however, that the employees who lost their job mainly belonged to low qualified work force with low wage rates.

Table 5.5: Development of employment, wages and productivity in manufacturing

	Productivity[1])	Wages[2])	Employees[3])	Productivity[1])	Wages[2])	Employees[3])
	Percentage changes from previous year					
	2009			*1. Half-year 2010*		
Győr-Moson-Sopron	– 12.4	+ 2.3	– 12.4	+ 21.2	+ 8.8	– 1.8
Vas	+ 0.3	+ 2.0	– 16.8	+ 32.6	+ 11.2	– 17.8
Hungarian CENTROPE	– 9.0	+ 2.2	– 14.1	+ 27.2	+ 10.7	– 8.3
Hungary	– 9.0	+ 4.0	– 6.8	+ 10.3	+ 6.8	– 1.1

Source: Based on CSO Hungary, WHRI Calculations.[1]) Technical production per employee. – [2]) Gross earnings per employee. – [3]) Data related to organisations over 4 employees.

From a sectoral perspective (see Table 5.6) declines of production – putting aside the substantial declines in the manufacturing of optical and appliances industry, which has a lower weight in the aggregate production of the two regions, – exceeded the 30% mark in the vehicles industry and the metal processing and production industry, which are both important sectors in the industrial structure of the CENTROPE and also in textile and leather production, which however, is primarily due to a heavy reduction in Vas, where – as shown above – this industry was already in decline even before the economic crisis. In addition in Győr also machinery production was severely affected by a decline (-31.6%) and in Vas wood and paper production declined by -38.8%.

Preliminary results for the first half year of 2010 while somewhat contradictory indicate that in Győr-Moson-Sopron all sectors of manufacturing with the exception of machinery production and textile production experienced an increase in manufacturing output and vehicles production increased by 24.2%. In Vas, by contrast, a larger number of sectors (such as the textile and leather production, wood and paper production, metal production and furniture production) still experienced substantial declines in the first half of 2010, and only the manufacturing of electric appliances, machinery production and vehicles production experienced substantial increases.

Table 5.6: Development of production in manufacturing by branch and region

	Győr-Moson-Sopron	Vas	HUN CENTROPE	Hungary	Győr-Moson-Sopron	Vas	HUN CENTROPE	Hungary
	Year 2009				1. Half-year 2010			
	Percentage changes from previous year							
Foods, Beverages, Tobacco	–8,0	–2,6	–6,5	–1,6	3,2	–18,5	–3,5	–7,7
Textile Production, Clothing Production, Leather and Shoe production	–19,7	–49,3	–42,3	–19,1	–3,2	–21,3	–16,1	–12,5
Wood Products, Paper Products, Printing and publishing	–18,8	–38,8	–27,0	–9,2	11,4	–11,3	3,2	12,9
Processing of Mineral Oils	0,0	0,0	0,0	–29,1	0,0	0,0	0,0	31,9
Chemical Products	–19,0	0,0	–19,0	–18,7	42,9	0,0	42,9	32,3
Pharmaceutic Products	0,0	0,0	0,0	9,3	0,0	0,0	0,0	–1,1
Rubber and Plastic products, Glass, stone and mineral earth products	–15,1	–2,8	–12,9	–18,3	–1,2	–1,0	–1,1	2,5
Metal production and processing, Manufacturing of metal products	–31,4	–36,6	–33,1	–35,4	21,8	–18,2	8,2	11,0
Manufacturing of electronic and optic products (1)	–58,6	–88,8	–67,8	–6,5	37,5	–100,0	15,5	11,1
Manufacturing of electric appliances (2)	–15,0	–23,4	–21,8	–12,9	42,3	30,8	33,3	–17,5
Machinery production (3)	–34,8	101,9	–9,7	–3,2	–23,0	42,6	0,5	46,1
Manufacturing of vehicles and components, Other vehicle (4)s	–31,6	–19,7	–30,2	–24,0	24,2	23,5	24,1	18,3
Machinery Total (1+2+3+4)	*–32,3*	*–21,0*	*–30,6*	*–14,3*	*23,3*	*24,8*	*23,5*	*13,3*
Furniture production, Manufacturing of other goods, Repair and Installation of Machinery and Equipment	–8,7	–19,0	–12,5	7,5	–3,3	–12,6	–6,6	–7,1
Manufacturing total	**–29,2**	**–22,3**	**–27,8**	**–15,1**	**19,0**	**9,0**	**16,7**	**10,1**

Source: Based on CSO Hungary, WHRI Calculations.

In sum this thus suggests that since the first half of 2010, the manufacturing sector of the Hungarian CENTROPE, which is also the most important sector driving the business cycle in this region, on account of resuming foreign trade growth, has resumed growth with above average Hungarian rates. In this new situation in particular Győr-Moson-Sopron on account of its more high value added production has better starting conditions than Vas. But in both regions recent large investment plans by important producers (Vehicle industry in Győr and engine production in Szentgotthárd in Vas) suggest a relatively fast recovery.

5.2.2 Construction & Energy

The development of construction – which is usually the sector most strongly affected by cyclical fluctuations in economic activity – during the current crisis, was primarily influenced by the implementation of EU funded projects in 2009. Compared to the previous years, this substantially increased expenditure (by the EU, National Governments and Local Governments) throughout the region (see table 5.7). As a consequence growth rates in construction production for the year 2009, reflect more strongly the different speeds of implementation and different regional priorities in the implementation of these policies than the crisis. Due to this in particular construction in Vas experienced an increase of output by 16.4% in 2009 and contributed also to an above average growth of construction output of +1.1% in the average of the Hungarian CENTROPE, despite a -8.1% decline in Győr-Moson-Sopron.

Table 5.7: The production in construction and energy

	Construction	Electricity,gas and water supply	Construction	Electricity,gas and water supply
	Percentage changes from previous year			
	2009		*1. Half-year 2010*	
Győr-Moson-Sopron	– 8.1	– 33.0	–14.7	+ 8.0
Vas	+ 16.4	..	– 0.7	–19.0
Hungarian CENTROPE	+ 1.1	..	– 10.8	
Hungary	– 7.6	– 3.4	–14.2	+ 0.3

Source: Based on CSO Hungary WHRI calculation. Note: Data related to organisations over 4 employees.

The better position of construction in Vas is a result of infrastructure development, primarily due to road (road number 86 between Szombathely and Győr) and rail road construction (by GySEV between Szombathely and Sopron), but also due to new investments in the spas in Bük and a new five stars hotel construction in Sárvár (of which the former was partially EU-funded). Since this development started from a low level (traditionally among the 19 Hungarian NUTS 2 regions only Nógrád county has a lower output in construction than Vas) construction output in the Hungarian CENTROPE in 2009 developed better than in the Hungarian average and even grew by 1.1%.

In the first half of 2010, when the level effect from the implementation of EU funds disappeared, however, construction output also started to decline (by -0.7%) in Vas. This

combined with a substantial -14.7% decrease in Györ-Moson-Sopron also led to a reduction of total construction output by -10.8%, which was, however still lower than in the Hungarian average (-14.2%)

Energy production, by contrast, currently is of only second order importance in the Hungarian CENTROPE on account of its low share in employment and GVA. But here the region has some potential for future development. Recently the City of Győr and E-On announced plans to invest in production of electricity by a gas co-generator in Győr and Gönyü while in Győr-Moson-Sopron wind mill forests have started to grow in the last four years and also several biomass production projects were installed. Despite this, however, the sector remains relatively small in Györ-Moson-Sopron and was so small that it still could not be reported by the Hungarian CSO in Vas in 2009. Thus the substantial fluctuations of this sector in the year 2009 and 2010 should not be over-interpreted since they may reflect the impact of individual investment decisions only.

5.2.3 Tourism

Tourism, by contrast, is an important sector in the economy of the Hungarian CENTROPE on account of the substantial investments in health and wellness tourism (in particular spas) in the last one and a half decades. The effects of the economic crises on this sector have been varied, depending on the different segments of the tourist market. In particular in 2009, due to the substantial economic problems faced by the Hungarian economy, which obviously also led to a reduction in consumption, of in particular luxury consumption such as wellness holidays, the number of overnight stays in the Hungarian CENTROPE by natives declined (by -1.5%), while that of foreigners increased (+2.2%). Thus demand on the Hungarian market was supported by the weak Forint. Thus in this respect the Hungarian CENTROPE where foreigners mainly come for wellness stays, developed differently than the Hungarian average, where the weak forint could not stop the number of stays from abroad to decline even more strongly (by -9.1%) than those from natives (-7.7%) (see table 5.8).

Table 5.8: Tourism by calendar year - Overnight stays

	Total		Natives	Foreigners						Hotels	Health Hotels	Well-ness Hotels	Private quarters
	Total	Natives		Total	Ger-man	Aust-rian	Czech	Slovak	Others				
	In												
	1,000	Percentage changes from previous year											
	1. Half-year 2010												
Győr-Moson-Sopron	435	+14.9	+12.8	+17.7	+14.6	+17.5	+22.0	+65.6	+17.2	+23.7	+5.7	+46.2	– 2.7
Vas	557	+16.9	+26.2	+ 9.4	+ 4.2	+13.5	+19.9	–4.8	+1.6	+23.3	+10.3	+35.0	– 1.8
Hungarian CENTROPE	991	+16.0	+19.4	+12.5	+ 8.1	+14.5	+20.3	+14.8	+11.9	+23.5	+9.4	+39.5	– 2.3
Hungary	7,573	+ 3.4	+ 2.3	+ 3.8	– 4.2	+ 3.8	+11.3	+ 3.6	+ 6.5	+ 6.4	..	..	– 6.3
	Year 2009												
Győr-Moson-Sopron	917	– 4.4	– 6.9	– 0.6	– 4.0	– 2.5	+59.4	+106.8	–6.7	–27.8	+18.3	– 8.3	–20.7
Vas	1,116	+ 1.0	– 2.1	+ 4.0	– 6.0	+ 2.9	+48.4	+51.3	–19.0	–48.1	+14.0	+ 1.4	– 5.7
Hungarian CENTROPE	2,033	– 1.5	– 4.6	+ 2.2	– 5.3	+ 1.3	+50.3	+66.9	–11.2	–39.0	+14.7	– 2.6	–13.2
Hungary	18,226	– 7.7	– 6.4	– 9.1	– 9.7	+ 5.1	+25.6	+27.9	–12.9	–12.3	..	..	– 8.0

Source: Based on CSO Hungary, WHRI Calculations.

This increase in the number of foreign tourists in the Hungarian CENTROPE is primarily due to the increase of foreign tourists in Vas and to tourists coming from nearby countries (such as Austria and in particular the Czech Republic and Hungary). This together with the increase in nights in health and wellness hotels (with at the same time substantial reductions in private quarters and hotels) in Vas, suggests that this additional demand by foreigners was primarily focused on spa and wellness tourism. Obviously tourists from these countries used the weak Forint to substitute longer holidays in more distant locations for (shorter) stays in nearby (and on account of exchange rate fluctuations cheaper) destinations such as the Hungarian CENTROPE.

In the first half of 2010, however, the trend observed in 2009 was reversed. Starting from low levels, the number of tourist nights spent by natives increased by 19.4% in the Hungarian CENTROPE in aggregate (and by more than a quarter in Vas) and thus surmounted the already high growth rate among foreign tourists, which was once more driven strongly by the increased demand from Austrian, Czech and (at least in Györ-Moson-Sopron) Slovak citizen, who also increasingly resided in hotels as well as in the wellness and health hotels. Only private quarters still experienced a decline in the number of foreign tourist nights in this time period.

5.3 Labour market development in the Hungarian CENTROPE

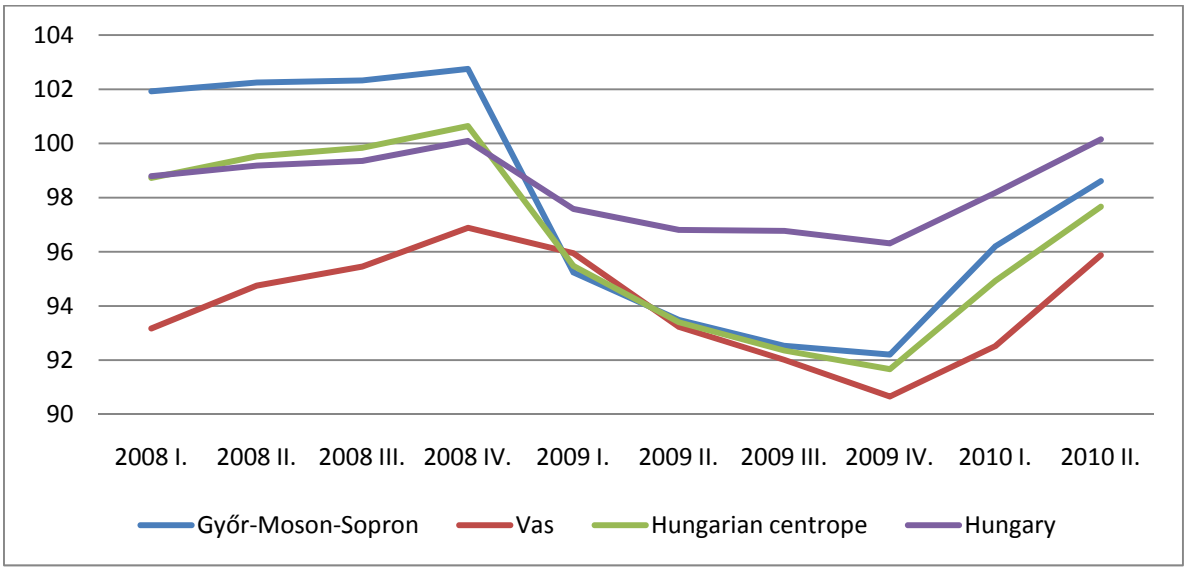
5.3.1 Employment

While manufacturing production as well as aggregate GDP already began to decline in the 4th quarter of 2008, the effects of the crises on the labour market became noticeable only in the 1st quarter of 2009, when employment reduced by around -2% in the Hungarian average. This reduction was noticeable in all of the Hungarian regions but – in line with the stronger affectedness of manufacturing in the Hungarian CENTROPE - was more noticeable in the Hungarian CENTROPE (where employment was by almost 5% lower in the first quarter of 2009 than one year before) and also slightly higher – relative to the previous expansion in Györ-Moson-Sopron than in Vas.

In contrast to the development in the manufacturing sector, however, in terms of labour market development there are only few signs of a more rapid recovery of the Hungarian CENTROPE relative to Hungary in average. Employment growth rates of both Györ-Moson-Sopron as well as Vas remained well below the Hungarian average throughout the crisis as well as in time of moderate economic upswing in the first half of 2010 with the differences only showing a slight tendency of reduction as of the 1st quarter of 2010. Furthermore – also in contrast to the development in manufacturing – Vas experienced substantially higher declines in employment than Györ-Moson-Sopron

both during the crisis as well as in the phase of stabilisation in the first half year of 2010.

Figure 5.5: Development of dependent employment – Change to previous year in %



Source: Based on CSO Hungary, WHRI Calculations.

The reason for this regionally different behaviour of employment and manufacturing output, is the marked difference in employment development in services (and here in particular in producer services) and construction in the Hungarian CENTROPE relative to the national average. While in 2009 employment in producer services still increased (by 7.8%) in the Hungarian average, construction sector declined by -7.1%. The producer service sector in the Hungarian CENTROPE, by contrast, experienced a decline in employment of -10.0% and construction of -10,5% with in particular Győr-Moson-Sopron (-10.5%) strongly affected by the decline in producer services and Vas (-16.7%) more strongly in construction. Among the service sectors in particular the real estate sector experienced a strong decline, while employment in financial services, transport (Hungarian CENTROPE +0.5%, Vas +6.7%) and accommodation (Hungarian CENTROPE +6.2%, Győr-Moson-Sopron +7.5%) increased. Furthermore, in contrast to the national trend, employment also decreased in public services in the Hungarian CENTROPE as an aggregate (by -1.0%) on account of a negative development for Győr-Moson-Sopron.

This tendency continued on to some degree in the first half of 2010. Here again, while employment in the manufacturing sector – although still declining – developed slightly better in the Hungarian CENTROPE than in the Hungarian average, employment in construction decreased substantially more rapidly (by -17.1% in the Hungarian

CENTROPE relative to -3.3% in the Hungarian total) among the Hungarian CENTROPE regions (in particular in Vas). The service sector, however, recovered. Employment in trade (on account of a positive development in Györ-Moson-Sopron) increased by 4.4% in the Hungarian CENTROPE in the first half year of 2010, while it reduced (by -2.2%) in the Hungarian average. Similarly also producer services on account of a more favourable development of the real estate sector in Györ-Moson-Sopron than in 2009 stagnated with +0.0% and thus outperformed the Hungarian average. The decline in public sector employment continued, however although at a slower pace than in the previous year.

Table 5.9: Development of dependent employment by sectors

	Agriculture	Manufacturing	Construction	Market Services			Non-market services (public services)
				Total	Trade	others (producer services)	
	Percentage changes from previous year						
1. Half-year 2010							
Győr-Moson-Sopron	–5.7	– 1.8	– 4.7	+0.1	+ 4.4	– 2.4	–1.2
Vas	+0.4	– 10.8	–17.1	+3.7	– 0.7	+ 7.0	+1.5
Hungarian CENTROPE	–3.4	– 5.3	– 8.4	+1.0	+ 2.7	± 0.0	–1.0
Hungary	–6.1	– 4.8	– 3.3	–1.5	– 2.2	+ 4.6	+5.5
Year 2009							
Győr-Moson-Sopron	–2.8	– 13.4	– 7.8	–10.2	– 9.3	–10.5	–3.6
Vas	–5.5	– 16.8	–16.7	– 9.4	–10.5	– 8.6	+1.3
Hungarian CENTROPE	–3.9	– 14.1	–10.5	–10.0	– 9.9	–10.0	–1.9
Hungary	–4.3	– 12.9	– 7.1	– 8.0	– 5.4	+ 7.8	+0.5

Source: Based on CSO Hungary, WHRI Calculations.

5.3.2 Unemployment

The somewhat higher employment declines in the Hungarian CENTROPE in 2009 and 2010 have also led to a substantially more rapid increase in unemployment in this region. In 2009 unemployment increased by 54.0% in Vas and 43.5% in Györ Moson-Sopron (relative to a national increase of 26.7%) and the unemployment rate increased by 3.0 percentage points, to 6.8% in Györ-Moson-Sopron and by 5.1% to 11.5% in Vas (relative to a 2.5 percentage point increase to 11.5% in the national average). Thus while Györ-Moson-Sopron was a low unemployment district in the Hungarian context both before as well as after the crises, Vas – which before 2009 still had an

unemployment that was around 1.5 percentage points below the average, is now a region with an (by 1 percentage point) above average unemployment rate.

Table 5.10: Unemployment

	Unemployed				Unemployment rate	
	Total	Males	Females	Youths[1])	Level	Change
	Percentage changes from previous year				In %	p.p.
1. Half-year 2010						
Győr-Moson-Sopron	–12.3	–18.5	– 5.4	–21.5	6.7	+0.9
Vas	–12.1	–15.7	– 8.0	–27.9	11.2	+1.1
Hungarian CENTROPE	–12.2	–17.2	– 6.5	–24.6	..	..
Hungary	– 0.6	– 2.0	+ 0.9	– 7.4	11.1	+1.5
Year 2009						
Győr-Moson-Sopron	+43.5	+50.6	+35.9	+ 5.6	6.8	+3.0
Vas	+54.0	+54.9	+52.8	+17.4	11.5	+5.1
Hungarian CENTROPE	+48.2	+52.6	+43.2	+11.2	..	..
Hungary	+26.7	+30.0	+23.0	..	10.5	+2.5

Source: Based on CSO Hungary, WHRI Calculations [1)] Aged 15 to 24.

Furthermore, the structure of employment decline, which as stated above - affected primarily employment in services and construction – also led to marked changes in the structure of employment. In particular unemployment among males (+30.0%) increased more rapidly than for females (23.9%) in the Hungarian average in 2009. This does, however, not apply to all regions of the Hungarian CENTROPE. While in Győr-Moson-Sopron unemployment unambiguously increased more sharply among males (+50.6%) than among females (+43.2%), in Vas, which also experienced a stronger employment decline in the service industry, both females as well as males experienced increases in employment by more than 50%. Only youth unemployment increased rather moderately (with +5.6% and +11.2%) relative to the high unemployment growth in other labour market segments.

Since the beginning of 2010 however, there has been a noticeable shift in the regional unemployment situation, which was accompanied by a substantial reduction in labour supply. This led to unemployment reducing more rapidly (by –12.1 and -12.3% respectively) in both Győr-Moson-Sopron and Vas than in the national average (-0.6%). This thus suggests a similarity in the recovery from the current economic and financial

crisis to the post transition crisis in the early 1990s. Also at that time both Györ-Moson-Sopron experienced a faster increase in unemployment than the national average, but there too the regeneration of the labour market was faster than in other Hungarian regions. As in the post transition crisis, however, a substantial part of this adjustment is carried by reduced labour supply and leads to unemployment rates still increasing even in the first half of 2010 (see table 5.10)

In part this development is owed to the close link of the Hungarian CENTROPE with the labour markets of both Austria and Slovakia. It is estimated by Trade Unions that there are currently more than 10,000 Hungarian daily commuters to Austria which live along the borders of Austria and Hungary and often work in sectors and professions like special professions in construction, accommodation, restaurants and retail trade. This is about 3% of the economically active population of the region or the half of the number of unemployed registered in the second quarters of 2010 in the Hungarian CENTROPE.

A similar trend has started along the Hungarian-Slovak border since the beginning of this decade. Due to the economic growth in the Slovak CENTROPE the number of daily commuters reached 3,000 before the crisis to the city of Győr and its environs. Most of the commuters here are native Hungarians that profit from the language knowledge at their workplaces across this border. Although commuting between Hungary and Slovakia seems to have reduced since the crisis due to the declining employment, and the weak Forint increased growth is likely to once more increase cross-border labour market relations with the Slovak CENTROPE.

Finally, a new phenomenon of cross-border labour market interaction is the suburbanisation of Bratislava across borders. The capital of Slovakia is situated at the tri-border area of CENTROPE. In the last two-three years the suburbanisation of Bratislava also reached the Hungarian side of the border.[28] Several hundred people moved to the Hungarian suburbs (Rajka, Dunakiliti and Mosonmagyaróvár) to live there but continue working in Bratislava. While this new phenomenon currently affects rather few workers, it could have important implications for future economic development of the region. As Slovak citizen commuting to Bratislava settle in this region one could expect that as a first consequence their increased demand (in particular for consumer services) will also increase the number of workplaces in the affected cities and villages. Furthermore, in the long run this process could also lead to some production companies settling across the border on account of the supply of labour in the region.

[28] The first signal of this process is that the city bus line number 801 of Bratislava has started to commute between the centre of the city and Rajka on hourly basis since this October.

5.4 Conclusion

In sum the Hungarian CENTROPE, which consists of the rather heterogeneous regions of Györ-Moson-Sopron and Vas, due to a strong export oriented manufacturing sector was already disproportionately feeling the effects of the slow growth in Hungary even before the world economic crisis and was also more strongly affected by the crises than the Hungarian average. In particular this region felt the decline in industrial production at the end of 2008 more severely than other Hungarian regions that are more strongly focused on national demand. This also led to a slightly more severe decline in employment and a substantially larger increase in unemployment in this region than in the Hungarian average. According to available data industrial production declined by 25.0% (-18.6% in the national average) and unemployment increased by 48.3% (national average +16.7%) in the Hungarian CENTROPE in 2009. The only positive signals in this year stemmed from an increase in the number of foreign tourists from nearby countries, who obviously took advantage of the low exchange rate of the Forint, and from construction, which profited from the implementation of a number of EU-financed construction projects.

However, the same data also provides some indication that as an aggregate the Hungarian CENTROPE – on account of the favourable development of foreign trade – is also emerging more rapidly from the crisis than most other Hungarian regions. Technical production of industry has increased by 11.5% in the first half year of 2010 and the announcement of major investment plans of some important producers in the vehicle and machinery industry at the beginning of this year, suggest some increase in the dynamics of the region already in 2010 and 2011. Furthermore the high export openness of the Hungarian CENTROPE also suggests that this region should be less strongly affected by the Hungarian governments budget cuts in the next years than other regions.

This said, however, it should also be noted that this indication of recovery is still rather weak and that there are important differences in structural starting conditions between the two regions of the Hungarian CENTROPE, which led to rather differentiated outcomes for these two regions. In the current phase of stabilisation in particular Győr-Moson-Sopron has a better relative position than Vas and differences in economic indicators are growing between the two counties of Hungarian CENTROPE. Furthermore the preliminary data available so far also suggests that much of the reduction in unemployment witnessed in the first half of 2010 is due to a reduction of labour supply. This may imply that on the labour market the crises has further contributed to reducing participation rates in the region, that are already the lowest in

all of CENTROPE. In particular recent studies show that without the possibility of daily commuting of work force to Austria the unemployment rate would be by between one to two percent higher in Vas and by 0.5 to 1 percent higher in Győr-Moson-Sopron.

6. Regional Development in the Slovak CENTROPE

6.1 Introduction

In Slovakia, the CENTROPE is composed of two self-governing regions – the Bratislava region (Bratislavský kraj) and the Trnava region (Trnavský kraj). From a regional perspective these regions are statistically classified as NUTS 3, however, the Bratislava region also belongs to one of the four Slovak NUTS 2 regions. With the exception of the Bratislava region, the NUTS 2 regions in Slovakia are artificial and have no self-governing institutions. Both regions represent 12% of the total area of the Slovak Republic and host 16% of all towns.

- **The Bratislava region** – is the most developed region in terms of GDP per capita with approximately 616 thousand inhabitants, of which 428 thousand citizens live in the capital Bratislava. The Bratislava region is a typical urban region with the lowest share of rural municipalities (table 6.1) and with a population density of 300.4 inhabitants per km^2. The population density is more than 260% above the Slovak average. While the area of the Bratislava region represents only 4% of the total area of Slovakia, about 11% of the total population live there. The region is characterised by the highest employment rates, the highest average nominal wage and the lowest unemployment rate in Slovakia. The urban character of this region lays the foundation for its strong growth, no matter what economic policies are enacted by the central government, which makes the region more immune to external economic shocks. It is also beginning to act as a technological leader in comparison to other regions. The Bratislava region is an important transport junction for international transit due to its location and developed transport infrastructure. According to the most recent Eurostat data the region represented 26.7% of total gross value added (GVA) formation of Slovakia in 2007. From a sectoral perspective, the highest share of GVA is created in financial intermediation real estate (40.8%) followed by public administration and community services (32%).

- **The Trnava region** – is the second most developed region of Slovakia in terms of GDP per capita and belongs to the most productive agricultural regions with mixed industrial structure (energy, automotive, electronic). The region has approximately 559 thousand inhabitants living in 251 municipalities of which 219 are rural. Its population density is 135 inhabitants per km^2. In 2007, the region's share of total Slovak GVA was 12.5%. The Trnava region has the second lowest unemployment rate in Slovakia. In recent years, the region recorded significant inflows of foreign

direct investment (FDI) in consumer electronics and car manufacturing. From a sectoral perspective the highest share of GVA (19.6%) was created in industry (with the exception of construction).

Table 6.1: Rurality in CENTROPE at NUTS 3 level

Area	Number of municipalities		Share in %	Total km^2	Rural municipalities km^2	Share in %
		rural				
Slovakia	2,891	2,581	40.5	49,034	42,003	85.7
The Bratislava region	73	54	13.4	2,053	1,338	65.2
Trnava region	251	219	46.0	4,147	3,383	81.6

Source: Statistical Office of Slovakia (2010)

Similarly to most other European countries, Slovakia was hit by the global economic recession beginning in the second half of 2008. The impact of the crisis resulted in a slowdown of economic growth in the 4th quarter of 2008, with subsequent transition to recession in 2009 (GDP growth -4.7%). The most significant factors, which contributed to the recession in 2009, were a sharp decline in exports[29] and dramatic fall in gross capital formation (investments). Household consumption remained relatively stable with only minor fluctuations, the highest decline of -1.9% was recorded in the fourth quarter of 2009.

The fall in exports was caused mainly by lower external demand for the products of the largest Slovak enterprises (mainly in the automotive and electronic sector), which together with other factors resulted in the continuing increase of the unemployment rate in all sectors of the economy. Compared to the 4th quarter of 2009, the unemployment rate went up by 2.4 percentage points and reached 14.5% (table 6.2) in the 3rd quarter of 2010.

In the 3rd quarter of 2010, from a regional perspective, the highest growth of unemployment was recorded in the Nitra region (4.2 percentage points), the Prešov region (3.2 percentage points), the Trnava region and the Žilina region (4.9 percentage points) followed by the Trencin region (2.6 percentage points) and the Bratislava region (2.4 percentage points). The lowest growth of unemployment was recorded in the

[29] This was particularly important on account of the high openness of the Slovak economy (which has a share of exports plus imports in GDP of 140.5%).

Banska Bystrica region (0.6 percentage points), however the unemployment rate in this region is among the highest in Slovakia.

This sharp increase in unemployment was partially caused by the return of Slovak citizens who lost their jobs in other EU countries (Great Britain, Ireland)[30]. The increase in the unemployment in the CENTROPE regions was among the lowest in Slovakia. The Bratislava region recorded an increase of 2.4 percentage points, and the Trnava region 2.9 percentage points, which in case of the Bratislava region was on par with the national growth of unemployment rate of 2.4 percentage points (figure 6.2). The unemployment rate in the Trnava region grew slightly more strongly than the national average.

Table 6.2: Unemployment rate at NUTS 3 level (Labour force survey)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	1-3Q 2010
Slovak republic	19.2	18.5	17.4	18.1	16.2	13.3	11.0	9.6	12.1	14.5
The Bratislava region	8.3	8.6	6.9	8.2	5.2	4.3	4.2	3.6	4.7	6.2
Trnava region	18.0	16.1	13.2	12.5	10.4	8.8	6.5	6.2	9.1	12.3
Trencin region	13.4	11.3	9.2	8.6	8.1	7.1	5.7	4.7	7.3	10.2
Nitriansky region	23.1	23.8	23.4	20.3	17.8	13.2	10.7	8.8	13.0	15.7
Žilina region	18.9	17.3	17.2	17.5	15.2	11.8	10.1	7.7	10.6	14.5
Banska Bystrica region	22.4	25.2	23.8	26.6	23.8	21.1	20.0	18.2	18.8	18.9
Prešov region	22.7	20.1	20.4	22.9	21.5	18.1	13.8	13.0	16.2	18.9
Košice region	24.8	24.1	23.0	25.2	24.7	20.3	15.9	13.5	15.5	18.2

Source: Statistical Office of Slovakia (2011)

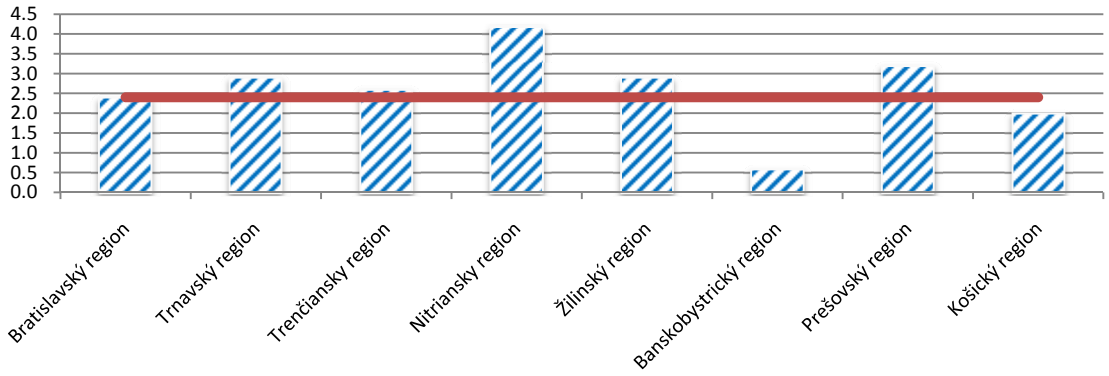
In the third quarter of 2010 relative to the end of 2009, the highest decline in number of employees was recorded in the manufacturing sector with total lay-offs of 13,600 employees. Since the beginning of the financial and economic crisis in last quarter of 2008 to the 3rd quarter of 2010, the highest decline in employment was recorded in manufacturing, with lay-offs of 114,000 employees, followed by agriculture, forestry and fishing with total loss of 18,600 jobs.

In 2009, when the Slovak economy fell into recession due to the negative development in the world economy (figure 6.1) government consumption grew by 5.6% and household consumption grew only by 0.2%. The growth of government consumption was determined mainly by the unchanged structure of central government budget

[30] For example, from the 2nd quarter of 2008 to the 2nd quarter of 2009, about 1000 citizens lost their jobs in the Prešov region. Due to lay-offs in EU countries the number of unemployed in the Prešov region however increased by an additional 16200.

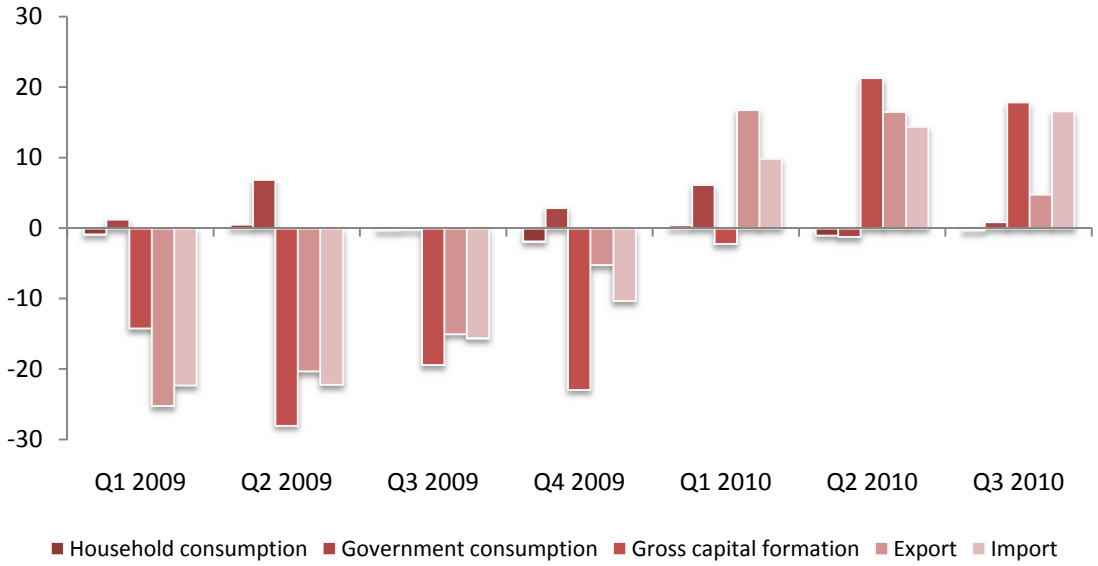
expenditure, which has not reflected the dramatic fall of revenues, thus resulting in a substantial increase of general government deficit and general government debt to GDP ratio. The general government budget for 2009 was based on over-optimistic macroeconomic assumptions. The draft budget assumed a GDP growth of 6.4%, employment growth of 1% and export growth of 8.9%.

Figure 6.1: Annual increase of unemployment in percentage points at NUTS 3 level since 4th Quater 2009 to the 3rd Quarter of 2010 (labour force survey)



Source: Regdat database - Statistical Office of the Slovakia (2011), own calculations. Note: Vertical line = increase of unemployment rate from the 4th quarter of 2009 to the 3rd quarter of 2010 in Slovakia in percentage points.

Figure 6.2: Gross domestic product components (real change in percentage against preceding year)



Source: Statistical Office of the SR, database SLOVSTAT (2011)

Although, these assumptions proved to be unrealistic in the first months of 2009, the central government did not take the changes in economic development caused by the economic and financial crisis into account. In 2009, the general government deficit according to adjusted estimations reached 8.0% of GDP. In 2010, the expected general government deficit is expected to reach 7.5 – 7.8% of GDP. The dramatic fall of revenues in 2009 has also resulted in a deterioration of budgets of the regional self-governing bodies and municipalities due to the existing system of personal income tax budgetary assignment[31]. In contrast to the approved central government budget, total revenues were lower by almost 20% and in comparison with the previous year revenues were lower by 7.1%. Tax revenue reached only 81.2%, non-tax revenues only 92.6% and grants and transfers only 72.2% of planned total revenues. The highest decline was recorded in personal income tax, due to the continued growth of unemployment in the economy. In comparison with the approved budget, personal income tax revenues amounted to only € 29 million from overall expected revenues of € 123 mil., which represented only 23.3% of expected revenues. In order to overcome this negative budgetary development and provide the regional authorities with sufficient financial resources, the regional representatives and central government signed a memorandum[32] with the objective to help the regional governments overcome the negative effects of the crisis. In 2009, more than €100 million were transferred from the central government budget to municipalities and self-governing regions to compensate for the loss of revenue. Similar developments in regional and local budgets are also expected in 2010 and 2011.[33]

In 2010, GDP growth is expected to reach 4.0% – 4.2%. This rapid recovery is caused mainly by the increase of government consumption by 1.7% as well as an increase in exports by 16.3% and a robust growth of gross capital formation (investments) by 13.5% in the first three quarters of 2010. In 2011, the introduction of an austerity package by the incumbent government will, together with a more unfavourable development on world markets, contribute to increased in inflation and will result in lower domestic demand. The main contributors to economic growth are expected to be exports of goods and services and gross capital formation in the next years. The expected economic growth in 2011 will result in minor growth of employment only in some economic sectors.

[31] Revenue from personal income tax is allocated to municipalities, self-governing regions (VÚC) and the central government budget according to 70.3: 35.5: 6.5 ratios.

[32] http://www.government.gov.sk/13565/memorandum-o-spolupraci-pri-rieseni-dopadov-financnej-a-hospodarskej-krizy-medzi-vladou-sr-a-zmos.php

[33] Data for 2010 regional and local budgets can be analysed after the adoption of the final state budgetary account which is due in April.

From the perspective of regional disparities development, the dispersion of regional GDP is still growing at the NUTS 2 as well as at the NUTS 3 level in Slovakia. There was a slight decrease at the NUTS 2 level in 2006, however, and since 2007 the trend has reversed and the dispersion of regional GDP has grown by 0.8 points. On the NUTS 3 level, the value of the indicator is growing since 1996. This can be explained by the continued better economic performance of the western regions compared to other regions in Slovakia. The development of regional disparities shown in Table 6.4 confirms the above conclusions of increasing disparities measured by GDP per capita in PPS. The share of the Bratislava region relative to the worst performing region as well as national GDP level is still growing (disparity 1 and disparity 4). Similarly, the share of the Trnava region relative to the worst performing Prešov region has also grown constantly.

Table 6.3: Dispersion of regional GDP in Slovakia

	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
NUTS 2	30.8	30.0	31.8	27.9	27.7	28.2	27.3	26.5	26.0	26.1	26.5	26.0
NUTS 3	35.3	34.4	33.6	29.1	28.6	28.1	27.4	27.7	27.2	27.6	28.0	27.4

Source: Eurostat (2011) Note: The dispersion of regional GDP (at NUTS 3 level) is measured by the sum of the absolute differences between regional and national GDP per inhabitant, weighted with the regional share of population and expressed in percent of the national GDP per inhabitant. The indicator is calculated from regional GDP figures based on the regional accounts of the European System of Accounts (ESA95).

Table 6.4: Development of disparities within the Slovak regions 1996 - 2007

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Disparity 1	3.29	3.38	3.45	3.49	3.57	3.62	3.62	3.69	3.77	4.11	4.26	4.34
Disparity 2	1.71	1.70	1.71	1.75	1.72	1.68	1.61	1.71	1.76	1.83	2.23	2.22
Disparity 3	0.64	0.64	0.63	0.61	0.61	0.61	0.62	0.61	0.60	0.59	0.55	0.54
Disparity 4	2.09	2.16	2.16	2.13	2.18	2.19	2.25	2.24	2.27	2.44	2.33	2.36

Source: Eurostat (2011), own calculations, Notes: Disparity 1 – share of GDP per capita PPS of the best performing region (the Bratislava region) relative to the worst performing region (the Prešov region), Disparity 2 – share of GDP per capita PPS of the second best performing region (the Trnava region) relative to the worst performing region (the Prešov region), Disparity 3 – share of GDP per capita PPS of the worst performing region (the Prešov region) relative to GDP per capita of Slovakia, Disparity 4 – share of GDP per capita PPS of the best performing region (the Bratislava region) relative to GDP per capita of Slovakia.

One of the main reasons for this development is the inflow and stock of FDI. Table 6.5 shows that the majority of FDI is allocated in the Bratislava region with a 65.9% share followed by the Trnava region with 9.0%. However, in recent years, an increased inflow

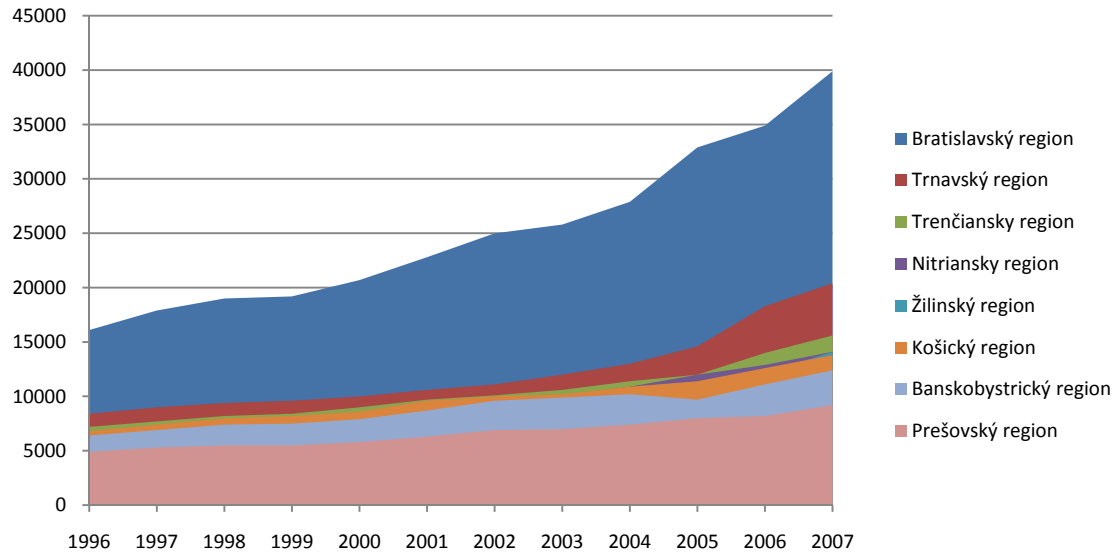
of investments has been recorded in the Trnava, Trenčín and Žilina regions, where investments occurred mainly in the automotive and electronic industry. The eastern regions of Slovakia and Banská Bystrica are still lagging behind in attracting FDI mainly due to undeveloped infrastructure. The region of Košice is highly dependent on the metallurgy industry (US Steel Košice).

Table 6.5: Stock, inflow and outflow of FDI and regional distribution of FDI in 2008 and 2009 (in thousands €)

	Stock of FDI in 2008	Inflow 1st to 4th quarter 2009	Outflow 1st to 4th quarter 2009
Slovakia	36,226,447	839,050	312,696
The Bratislava region	23,879,092	618,130	328,532
Trnava region	3,251,024	64,139	–13,624
Trencin region	1,628,475	13,800	–2,234
Nitra region	1,399,116	104,870	7,932
Žilina region	2,195,419	–60,198	11,000
Banska Bystrica region	876,524	64,829	214,000
Prešov region	363,904	8,214	–1,185
Košice region	2,632,893	25,266	–6 950

Source: Statistical Office of Slovakia - Regdat database (2011) and National Bank of Slovakia. Data for 1Q– 4Q 2009 are preliminary.

Figure 6.3: GDP at current market prices – purchasing power standard per capita



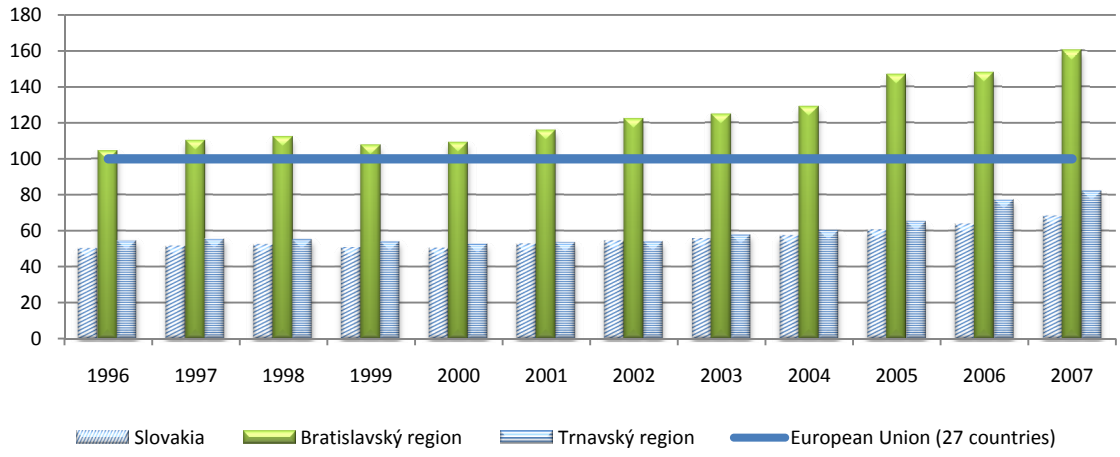
Source: Eurostat (2011)

6.2 Regional economic development in CENTROPE

The Slovak CENTROPE belongs to the most developed regions of Slovakia and GDP per capita in purchasing power parities is well above the national average (figure 6.3). The strong economic growth, which has been recorded in Slovakia over the years 2006 – 2008, was interrupted by the global economic recession caused by the financial and economic crisis. The unavailability of recent regional data prevents us from observing some of the significant structural changes and their influence on the economic development over the last two years. However, according to available data, the CENTROPE regions of Bratislava and Trnava have been less strongly hit by the global economic recession compared to other Slovak regions.

Figure 6.4 shows the continued convergence of CENTROPE regions to the EU 27 average. During the observed period, in the Bratislava region the EU 27 average was already achieved in 1996 in terms of GDP and constantly grew to 160% in 2007. This puts the Bratislava region among the most developed regions in the European Union. Although we cannot observe this kind of rapid development in the case of the Trnava region, it is also successful in converging towards the EU 27 average. Especially in recent years, with the inflow of FDI to automotive and consumer electronics sectors, the region is converging faster towards the EU 27 average than most other Slovak regions.

Figure 6.4: GDP at current market prices – purchasing power standard in percent of the EU 27 average



Source: Eurostat (2011)

6.2.1 Development of gross value added in Slovak CENTROPE

The unavailability of recent regional statistical data makes it difficult to analyse the recent development on the regional level, which is likely to have been influenced by the economic and financial crisis. Moreover the real growth of regional gross value added is available only for NUTS 2 regions. The development of GVA at NUTS 2 level, where the Trnava region is part of Western Slovakia together with the Nitriansky and Trencin regions, had reached near double-digit growth rates in 2007. The development of this region is characterised by a north-south growth gradient. The area near the Czech border (corridor in proximity of the D1 motorway: Trnava, Ilava, Trenčín, Púchov) is growing quickly while the south-eastern area is lagging behind. The uneven inflow of foreign direct investments mostly to the western and north-western parts of the region only confirms and further deepens this trend. The south-western districts of the region are characterized by a typical combination of rural and small urban areas with a few key industries and a low level of diversification. In Bratislava, the main contributors to GVA growth were the service sector, public administration and community services. In Western Slovakia, the formation of GVA is quite evenly distributed among all NACE sectors with the highest contribution in industry and construction.

Table 6.6: Real growth rate of regional gross value added at basic prices at NUTS 2

	2000	2001	2002	2003	2004	2005	2006	2007
EU 27	4.0	2.0	1.3	1.3	2.6	2.0	3.2	3.1
Slovakia	0.5	5.0	4.2	3.8	4.4	5.9	10.1	10.7
Bratislava region	2.2	3.1	5.0	2.1	3.3	-	6.0	12.7
Western Slovakia	–0.6	3.5	3.6	7.1	7.1	5.6	-	9.6
Central Slovakia	0.8	6.5	5.1	2.5	2.9	-0.2	10.3	-
Eastern Slovakia	0.3	7.7	3.3	2.1	3.2	2.5	6.9	8.7

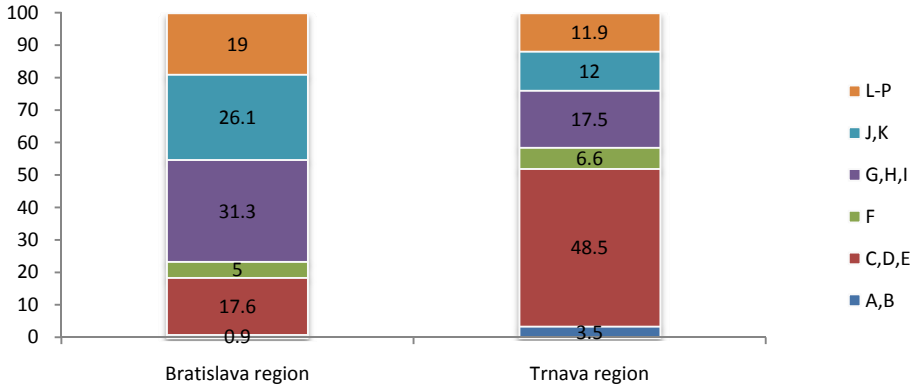
Source: Eurostat (2011). Note: Data are not available on NUTS 3 level.

In 2007, the combined share of the Bratislava and Trnava regions in total GVA in Slovakia was approximately 40% (Table 6.7). Both regions recorded two-digit annual growth in 2007 and, in case of Bratislava, growth surpassed the national annual growth of GVA. The combined share of GVA in total Slovak GVA is significant in the majority of economic sectors.

Differences among the Slovak CENTROPE regions are mostly visible in their economic structure and in the share of GVA of respective sectors. The urban character of the Bratislava region causes the region to have a more sophisticated production structure of GVA centred mainly on services and industry, with a small share of agriculture and fishing. Since 2004 to 2007, the development of GVA in the agricultural sector has

been highly volatile in both regions. The combined share of both regions amounts to 19.4% of national GVA in agriculture.

Figure 6.5: Share of gross value added in CENTROPE regions according to NACE sectors



Source: own calculations based on Regdat database – Slovak Statistical Office (2011), Sectors according to NACE rev.2: A - Agriculture, forestry and fishing, B - Mining and quarrying, C – Manufacturing, D - Electricity, gas, etc., E - Water supply; sewerage, etc., F – Construction, G - Wholesale and retail trade, H - Transportation and storage, I - Accommodation and food service activities, J - Information and communication, K - Financial and insurance activities, L - Real estate activities, M - Scientific and technical activities, N - Administrative and support service activities, O - Public administration and defence; compulsory social security, P – Education, Q - Human health and social work activities, R - Arts, entertainment and recreation, S - Other service activities, T - Activities of households as employers etc., U - Activities of extraterritorial organisations and bodies

Table 6.7: Share and growth of GVA in the Slovak CENTROPE - All sectors (at current prices)

	Annual growth rate of GVA (%)				Share on total GVA in Slovakia (%)			
	2004	2005	2006	2007	2004	2005	2006	2007
Slovakia	10.9	8.6	13.5	11.7	100.0	100.0	100.0	100.0
The Bratislava region	11.4	17.3	9.1	14.0	25.2	27.2	26.2	26.7
Trnava region	12.4	11.4	28.0	11.2	10.8	11.1	12.5	12.5
Total BA + TT	.	.	.	.	36.0	38.3	38.7	39.2

Source: own calculations, Eurostat (2011). Note: All NACE sectors = A – P

Table 6.8: Share and growth of GVA in the Slovak CENTROPE - Agriculture and fishing (at current prices)

	Annual growth rate of GVA (%)				Share on total GVA in Slovakia (%)			
	2004	2005	2006	2007	2004	2005	2006	2007
Slovakia	–0.1	–2.7	11.2	9.7	100.0	100.0	100.0	100.0
Bratislava region	–0.4	6.1	42.7	6.7	5.2	5.6	7.2	7.0
Trnava region	0.8	40.9	–30.9	12.0	13.4	19.5	12.1	12.3
Total BA + TT	.	.	.	.	18.6	25.1	19.3	19.4

Source: Eurostat (2011)

6.2.2 Industry – except construction

Industry is the second largest contributor to GVA both in the Trnava region and the Bratislava region with a share of 34,8% in overall GVA in the Slovak CENTROPE. Among the largest employers in the Trnava region are INA Skalica (manufacturing of bearings), PSA Peugeot Citroën Slovakia, SAMSUNG Electronics Slovakia, Swedwood Slovakia (sawmills, component and furniture production), Delphi (automotive industry), Bekaert (automotive industry), ŽOS Trnava (repair, reconstruction, modernisation and modification of railway freight wagons; modernisation and reconstruction of passenger cars; production of railcars), Johns Manville Slovakia (production and treatment of glass fibres) and ZF SACHS Slovakia (automotive industry – production of clutches and torque converters). Among the largest companies in the Bratislava region are Volkswagen Slovakia and Slovenské elektrárne a.s. (energy), employing more than 5,000 employees.

Table 6.9: Share and growth of GVA in the Slovak CENTROPE - Industry – except construction (at current prices)

	Annual growth rate of GVA (%)				Share on total GVA in Slovakia (%)			
	2004	2005	2006	2007	2004	2005	2006	2007
Slovakia	16.4	6.4	19.5	10.3	100.0	100.0	100.0	100.0
The Bratislava region	13.4	26.4	– 9.9	14.4	16.4	19.5	14.7	15.2
Trnava region	21.0	6.6	44.9	9.3	16.3	16.3	19.8	19.6
Total BA + TT	.	.	.	.	32.6	35.7	34.4	34.8

Source: Eurostat (2011)

With the start of production in PSA Peugeot Citroën, industrial GVA went up by 44.9% in 2006 and increased the share of industrial GVA in total GVA in the Trnava region by 3.5 percentage points. The launch of automobile production created favourable conditions for the emergence of new SMEs in the automotive industry as subcontractors.

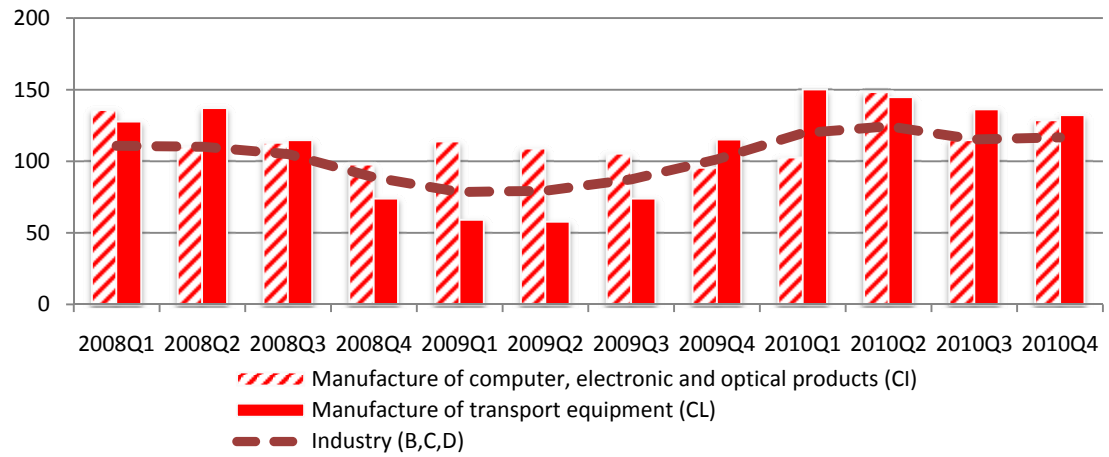
In 2009, the decrease of external demand in the main Slovak export markets[34] led to decrease of car production in all main car enterprises in Slovakia, and even more strongly in their subcontractors (Figure 6.6). This resulted in a decrease of the index of industrial production by 13.7% compared to 2008.

The introduction of car scrapping schemes in the majority of the EU countries softened the impact of diminishing exports, especially on the domestic subcontracting SMEs, and the present economic recovery is contributing to a gradual increase of industrial

[34] 85.7% of all exports are going to the EU countries.

production to pre-crisis levels, although with only slowly increasing employment rates. Development in manufacturing of computer, electronic and optical products had been only moderately hit by the crisis, with the decline in 4th quarter of 2008 and 4th quarter of 2009 being rather small. The actual recovery of major trading partners in the EU (e.g. Germany) reversed this negative development (Table 6.10).

Figure 6.6: Index of industrial production and index of selected sectors since Q1 2008 – Q4 2010



Source: Statistical Office of Slovakia (2011) – Slovstat Database. Note: according to SK NACE rev. 2 Industry (B,C,D) = Mining and quarrying and industrial production and supply of electricity, gas, steam and air-conditioning

In 2010, the index of industrial production went up by 19.7 points compared to 2009 and, between the 1st and the 3rd quarter of 2010, regional turnover grew by 16.7% in the Bratislava and by 8.3% in the Trnava regions. The economic recovery also resulted in an increase of average nominal wages in the Bratislava region by 5.4% and 5.7% in the Trnava region in this time period. Turnover from exports grew especially in the Bratislava region, increasing by 32.8%. The growth of turnover in both regions with the subsequent decrease of average number of employees in industry also resulted in an increase of labour productivity by 20.1% in the Bratislava region and 17.9% in the Trnava region.

The number of enterprises in the Slovak CENTROPE amounts to about 22.4% of all enterprises in Slovakia. They create 49.4% of total added value and increased their share in gross revenues by 2.3 percentage points between 2003 and 2009. In the same period, the share of intermediate consumption in gross revenue also grew significantly, mainly in the Trnava region (by 10.8 percentage points), to 82.2% which is higher by 3 percentage points than the national average.

Table 6.10: Development of selected indicators in industry in 1Q - 3Q 2010

	Turnover		Turnover from export		Number of employees		Average nominal wage		Labour productivity from turnover	
	1,000 €	Index[1]	1,000 €	Index[1]		Index[2]	in €	Index[2]	in €	Index[2]
Bratislava region	14,743,566	116.7	6,670,040	132.8	52,770	97.2	1,170	105.4	279,395	120.1
Trnava region	7,070,047	108.3	5,509,708	105.0	43,629	91.9	856	105.7	162,051	117.9

Source: Statistical Office of Slovakia (2011). Note: 1 – in constant prices. [2] – percentage change against preceding year (i.e. 1-3Q 2009).

Table 6.11: Development of intermediate consumption, value added and gross revenue 2003 – 2009

	Number of enterprises		Gross revenue (Mio. €)		Value added (Mio. €)		Intermediate consumption (Mio. €)	
	2003	2009	2003	2009	2003	2009	2003	2009
Bratislavský	260	288	15,379	17,554	2,097	3,641	13,282	13,913
Trnavský	257	292	3,514	9,173	1,005	1,629	2,509	7,544
Slovakia	2,231	2,579	38,702	51,344	8,241	10,659	30,460	40,686

Source: Statistical Office of Slovakia - Regdat database (2011)

Table 6.12: Share of intermediate consumption and value added on gross revenue 2003 - 2009

	Share of value added on gross revenue (%)		Share of intermediate consumption on gross revenue (%)	
	2003	2009	2003	2009
Bratislava region	13.6	20.7	86.4	79.3
Trnava region	28.6	17.8	71.4	82.2
Slovakia	21.3	20.8	78.7	79.2

Source: own calculations based on Statistical Office of Slovakia - Regdat database (2011)

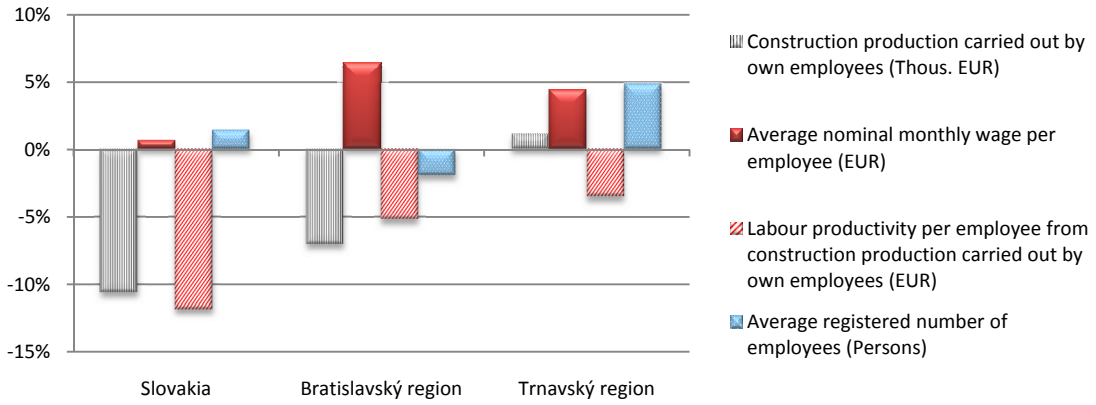
The main reason for this development is the increase in the share of production with lower value added (e.g. production of low and middle class vehicles in PSA Peugeot Citroen) in overall industrial production in the region. In the past, a similar development was observed in the Bratislava region. However, in the case of this region, the share of intermediate consumption went down by 7.1 percentage points, which can be explained by shift of production towards a more sophisticated production of vehicles. In the recent years, besides the automotive industry, the turnover in manufacturing of computer, electronic and optical products has increased substantially.

6.2.3 Construction

The impact of the financial and economic crises also heavily influenced the development in the construction sector from 2008 on. From 2008 to 2009, production in the construction sector carried out by enterprises with more than 20 employees went

down by 10.6% in Slovakia. The highest decrease was recorded in the Bratislava region (by 7.0%). By contrast, the production in the construction sector in the Trnava region grew by 1.1%. The share of production in this sector in CENTROPE regions reached 36.6% of the total construction production in Slovakia with a 26.7% share in the Bratislava region and a 9.9% share in the Trnava region. Nominal wages in construction grew by 6.4% in the Bratislava region and by 4.4% in the Trnava region, which was above the national average of 0.6%. While the difference between average nominal wages in the Bratislava region and Slovakia in the construction sector was €253 in 2008, the difference in 2009 increased to €302. Furthermore, in 2009, due to the decrease of construction production in the Bratislava region, labour productivity per employee from construction production carried out by own employees also went down by 5.2%. In the Trnava region, the decrease of labour productivity was caused by the increase of average registered number of employees by 4.8% in 2009 (figure 6.7).

Figure 6.7: Development of selected construction sector indicators in 2009 (changes relative to previous year)



Source: Statistics Office of Slovakia – own calculations (2011)

Table 6.13: Construction (at current prices)

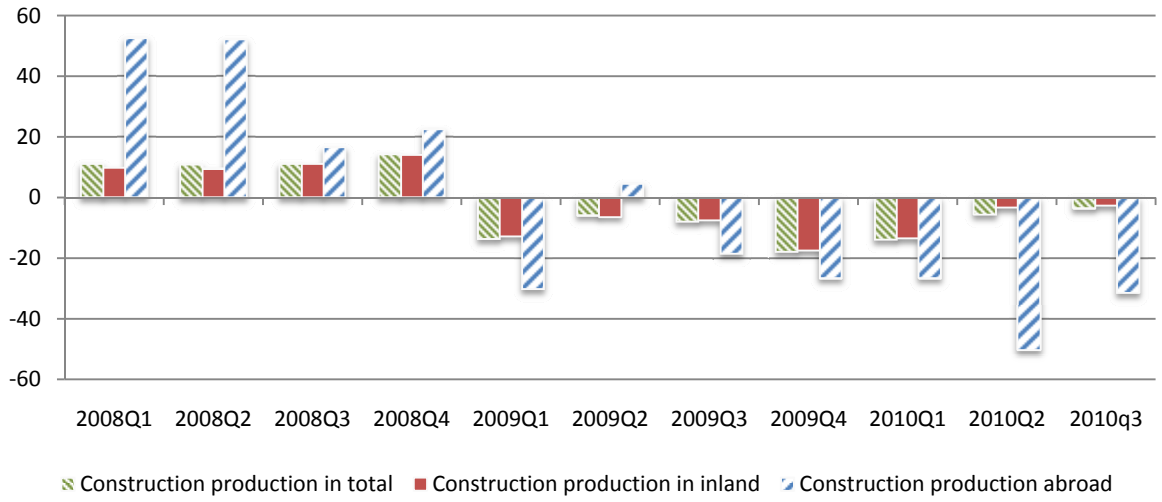
	Annual growth rate of GVA (%)				Share on total GVA in Slovakia (%)			
	2004	2005	2006	2007	2004	2005	2006	2007
Slovakia	13.8	18.0	29.0	14.0	100.0	100.0	100.0	100.0
Bratislava region	13.0	21.9	24.6	14.1	17.2	17.8	17.2	17.2
Trnava region	11.0	21.8	23.2	18.8	10.3	10.6	10.1	10.5
Total BA + TT	.	.	.	.	27.5	28.4	27.3	27.7

Source: Eurostat (2011)

A different development of construction production can be observed within the Slovak CENTROPE for 2010. In the first three quarters of 2010, the construction production

carried out by own employees in Bratislava region grew by a modest 0.3% (at constant prices) and in the Trnava region by 15.8%. The average nominal wage grew by 7.5% in the Bratislava region to € 1086 and 2.1% in the Trnava region to € 722. The growth of labour productivity in the Trnava region by an impressive 20.1% was caused by the decrease of average number of employed persons by 4.2% and the above mentioned growth of production. The labour productivity in Bratislava region went down by 3.9% which was caused by higher increase of number of employed persons by 4.3% than of production.

Figure 6.8: Construction production carried out by own employees in Slovakia Q1 2008 – Q3 2010 (changes compared to the preceding years at constant prices)



Source: Statistical Office of Slovakia – database SLOVSTAT (2011)

6.2.4 Services

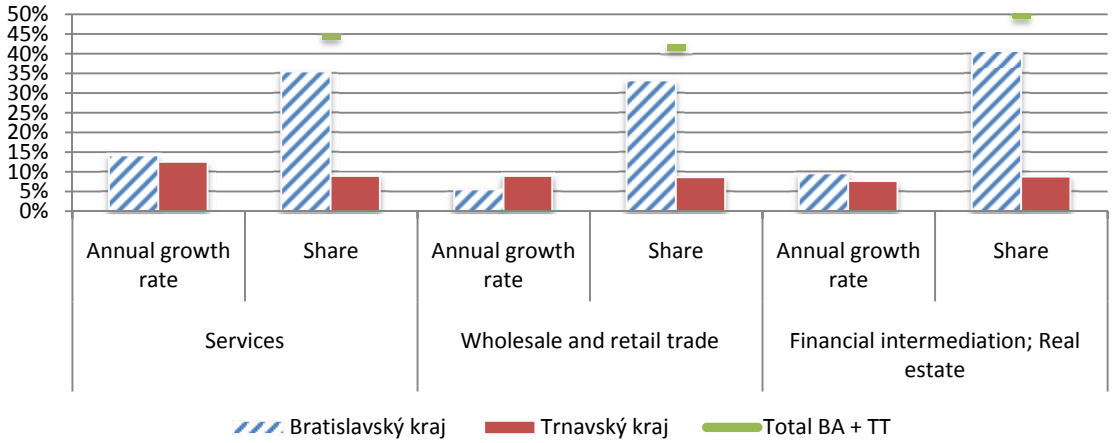
The Slovak CENTROPE also holds the highest share of GVA in services. In 2007, the combined share of both regions in the total Slovak service sector GVA reached 44.3% in total services, 41.6% in wholesale and retail trade and nearly half of total GVA in real estate and financial intermediation (Figure 6.9).

In 2009, as a reaction to crisis, turnover in current prices went down in all service industries[35]. The highest decline was recorded in the Trnava region in food and beverage service activities (-49.8%) and wholesale trade with the exception of trade of motor vehicles and motorcycles (-37.5%). The Bratislava region recorded a 3.3%

[35] 45 – Wholesale, retail trade, repair of motor vehicles and motorcycles; 46- Wholesale trade except of motor vehicles and motorcycles; 47 – Retail trade except of motor vehicles and motorcycles; 55 – Accommodation; 56 – Food and beverage service activities.

increase of turnover in food and beverage activities but, compared to Trnavský, recorded a more significant annual decrease in wholesale, retail and repair of motor vehicles and motorcycles (by 30%). At constant prices turnover decreased in all examined categories with the exception of the Trnava region, where turnover in wholesale and retail trade and repair of vehicles and motorcycles went up by 5.8%, which was primarily due to the introduction of a car-scrapping scheme.

Figure 6.9: Development of GVA at current prices selected sectors in 2007



Source: Eurostat (2011) – own calculations. Note: green line – sum GVA of Bratislavský and Trnava region.

Table 6.14: Turnover by regions according to SK NACE in 2010 (percentage changes from previous year at current prices)

	45	46	47	55	56
Bratislava region	5.66	12.50	7.04	– 1.87	– 0.02
Trnava region	–7.29	14.22	9.58	–53.33	–27.67
Slovakia	1.08	11.78	6.76	– 1.44	– 0.37

Source: own calculation, Statistical Office of Slovakia (2011). Note: 45 – Wholesale and retail trade and repair of motor vehicles and motorcycles; 46 – Wholesale trade except of motor vehicles and motorcycles; 47 – Retail trade except of motor vehicles and motorcycles; 55 – Accommodation; 56 – Food and beverage service activities.

In 2010, with the starting recovery, the turnover in the selected service sectors has grown in some of the examined sectors. In the Bratislava region, only accommodation, and food and beverage service activities declined by 1.87% and 0.02% respectively. In the Trnava region, the negative development already witnessed in 2009 continued in 2010. The highest fall in revenues was recorded in accommodation (-53.3%), food and beverage service activities (-27.67%) and wholesale, retail trade and repair of motor vehicle and motorcycles (-7.29%).

6.2.5 Tourism

The tourism sector was also significantly hit by the crisis in all its main indicators (Table 6.16). In 2009 the number of overnight stays declined by 15.2% in the Bratislava region and by 18.5% in the Trnava region with the number of visitors in accommodation facilities decreasing by 16.3% and 19.8%. This negative development resulted in annual decline of the number of accommodation facilities in the Bratislava region by 0,5% and by 2,8% in the Trnava region. The adoption of the Euro in the beginning of 2009 sheltered the Slovak economy against the high volatility of exchange rates, which occurred in the first semester of 2009. However, the depreciation of the Czech koruna, Hungarian forint and Polish zloty against the euro, made Slovak tourism industry less price competitive. This resulted in a lower number of visitors from these countries. Despite this negative development, the largest number of visitors in the Bratislava region was registered in Bratislava I and in the district of Piešťany, known for its health spa resort with thermal mineral water and unique sulphuric mud for treating rheumatism and other disorders of motion.

Table 6.15: Development of tourism indicators at NUTS 3 and NUTS 4 level in 2008 and 2009

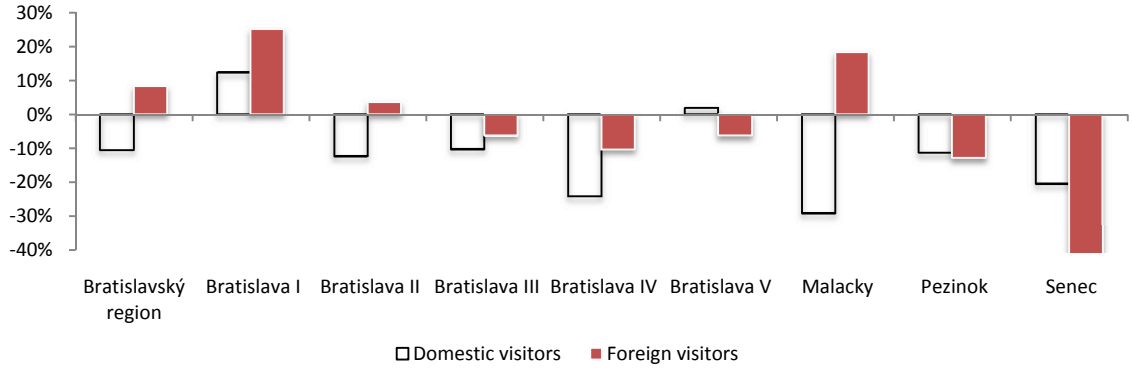
	Number of overnight stays by visitors in accommodation of facilities			Number of accommodation facilities			Number of visitors in accommodation facilities		
	2008	2009	2009/2008	2008	2009	2009/2008	2008	2009	2009/2008
Slovakia	12,464,104	10,391,069	–16.6%	3,434	3,292	–4.1%	4,082,645	3,381,354	–17.2%
Bratislava region	1,859,033	1,575,664	–15.2%	199	198	–0.5%	914,406	765,019	–16.3%
Bratislava I	459,351	417,308	–9.2%	32	39	21.9%	280,512	248,166	–11.5%
Bratislava II	509,849	379,097	–25.6%	30	31	3.3%	301,882	232,250	–23.1%
Bratislava III	244,373	239,408	–2.0%	17	19	11.8%	117,131	106,887	–8.7%
Bratislava IV	296,551	250,283	–15.6%	10	11	10.0%	39,347	35,529	–9.7%
Bratislava V	38,970	45,265	16.2%	7	9	28.6%	20,941	26,892	28.4%
Malacky	35,803	39,288	9.7%	13	12	–7.7%	18,506	16,036	–13.3%
Pezinok	115,479	83,733	–27.5%	53	45	–15.1%	58,294	43,281	–25.8%
Senec	158,657	121,282	–23.6%	37	32	–13.5%	77,793	55,978	–28.0%
Trnava region	1,204,167	981,084	–18.5%	218	212	–2.8%	273,477	219,301	–19.8%
Dunajská Streda	151,843	101,892	–32.9%	66	65	–1.5%	52,335	37,213	–28.9%
Galanta	56,290	38,205	–32.1%	16	14	–12.5%	16,733	11,741	–29.8%
Hlohovec	5,390	4,418	–18.0%	4	3	–25.0%	2,383	2,154	–9.6%
Piešťany	717,629	609,872	–15.0%	61	56	–8.2%	122,609	100,812	–17.8%
Senica	126,599	116,753	–7.8%	25	26	4.0%	22,370	19,138	–14.4%
Skalica	32,611	26,246	–19.5%	16	16	0.0%	14,641	10,978	–25.0%
Trnava	113,805	83,698	–26.5%	30	32	6.7%	42,406	37 265	–12.1%

Source: Regdat database, Statistical Office of Slovakia (2010)

In contrast to 2009, the development of tourism has been more favourable in 2010, although with different developments in the individual districts of Slovak CENTROPE. In the Trnava region, the number of visitors in accommodation facilities grew by 1.7%. The highest increase – although from a low starting level - was recorded in the district

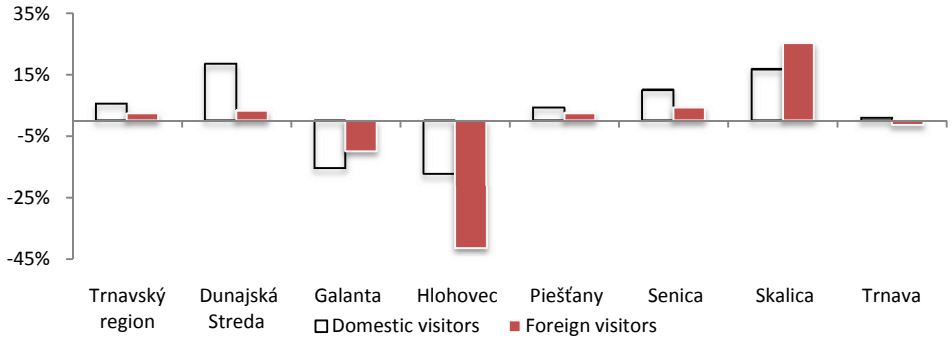
of Skalica with annual growth at 24.8%, while the highest annual decline at 32.6% was recorded in district of Hlohovec. The number of accommodation facilities in the Trnava region dropped by 1.9%, with highest decline in district of Skalica from 16 to 14 facilities and in district of Piešťany by 5.4% from 56 to 53 facilities. The region of Trnava recorded an annual increase in number of overnight stays by 6.2%. The number of accommodation facilities grew by 3.1% and number of visitors fell by 0.02%. In general, the tourism sector in the Trnava region is slowly recovering although the sector has still not reached its pre-crisis levels due to the ongoing influence of the global recession.

Figure 6.10: Annual changes in number of domestic and foreign visitors in The Bratislava region (percentage changes from previous year)



Source: Statistical Office of Slovakia (2011), own calculations. Note: Data for 1Q – 3Q 2010

Figure 6.11: Annual changes in number of domestic and foreign visitors in the Trnava region (percentage changes from previous year)



Source: Statistical Office of Slovakia (2011), own calculations. Note: Data for 1Q – 4Q 2010.

In Bratislava region, the number of visitors grew by a modest 0.4% in the first three quarter of 2010 relative to the same period of 2009; however, the number of overnight stays went down by 0.4%. The highest increase in the number of visitors and overnight stays was recorded in district of Bratislava I with annual growth at 23% and 27%

respectively. The bulk of the tourism industry is concentrated in the city of Bratislava (composed of five districts). The share on overall number of visitors in Bratislava region lies at 87.6% and provides 57.2% of all accommodation facilities in the region. The development in other districts of the Bratislava region recorded an annual decrease in the number of visitors with highest decline in the district of Senec (31.2%) and the district of Bratislava IV (21.6%). The number of accommodation facilities in the Bratislava region grew by negligible 1%.

The share of foreign visitors in the total number of visitors reached 63% in Bratislavský kraj and 44% in the Trnava region. From 100,441 foreign visitors in the Trnava region, 48% of the visitors (49,106) spent their vacation in the district of Piešťany, followed by the district of Dunajská streda with 21.385 visitors (21%) and the district of Trnava with 16,079 visitors (16%). From the perspective of the Slovak CENTROPE region, it can be stated that the tourism industry is still not fully exploiting its potential with the majority of foreign tourists spending their vacation in the capital city and the district of Piešťany. The attractiveness of the remaining districts in the Slovak CENTROPE for domestic and foreign visitors increasing is an important objective for the future in order to fully exploit the potential of tourism industry.

Table 6.16: Labour market indicators (Labour Force Survey) 2006 - 2009

	Total				Men				Women			
	2006	2007	2008	2009	2006	2007	2008	2009	2006	2007	2008	2009
	Slovakia											
Unemployed[1)]	–17.3%	–17.4%	–11.8%	25.9%	–19.7%	–20.1%	–13.2%	37.1%	–14.7%	–14.7%	–10.4%	15.4%
Employed[1)]	3.8%	2.4%	3.2%	–2.8%	4.7%	2.4%	3.2%	–2.7%	2.8%	2.5%	3.3%	–2.9%
Economic activity rate[2)]	59.1	58.8	59.4	58.9	68.2	67.7	68.3	68.1	50.7	50.5	51.1	50.3
Unemployment rate[2)]	13.3	11	9.6	12.1	12.2	9.8	8.4	11.4	14.7	12.5	11.1	12.9
	The Bratislava region											
Unemployed[1)]	–15.8%	–2.1%	–12.1%	31.5%	1.3%	–17.1%	1.6%	54.7%	–29.2%	14.7%	–23.1%	6.7%
Employed[1)]	1.2%	2.2%	2.8%	–0.4%	–0.1%	2.5%	2.1%	–0.4%	2.8%	1.8%	3.5%	–0.5%
Economic activity rate[2)]	63.3	64.4	65.3	65	70.4	71.2	72.1	72.3	57.2	58.3	59.2	58.5
Unemployment rate[2)]	4.3	4.2	3.6	4.7	4.4	3.6	3.6	5.5	4.3	4.7	3.6	3.9
	Trnava region											
Unemployed[1)]	–15.6%	–26.4%	–2.1%	50.3%	–20.1%	–31.8%	5.5%	75.3%	–12.0%	–22.4	–7.0%	32.1%
Employed[1)]	2.3%	2.6%	2.7%	–1.9%	4.4%	1.3%	1.1%	–1.3%	–0.3%	4.3%	4.7%	–2.7%
Economic activity rate[2)]	61.8	61.6	62.5	62.6	71.3	70.3	70.6	71.5	52.9	53.4	55	54.4
Unemployment rate[2)]	8.8	6.5	6.2	9.1	6.6	4.6	4.7	8.1	11.4	8.8	7.9	10.3

Source: Regdat database, Statistical Office of Slovakia 1) percentage change to previous year 2) level in the respective year.

6.3 Labour market

The favourable development on the labour market in recent years has been interrupted by the global economic recession which started in the end of 2008; the effects of the

recession fully manifested themselves in 2009 when the unemployment rate in Slovakia went up by 2.5 percentage points with, the increase of unemployment being higher in the Trnava region. The already low rate of unemployment in the Bratislava region went up only by 1.1 percentage points and remained the lowest in Slovakia. In the Trnava region, the unemployment rate went up by 2.9 percentage points. This can be explained by the high share of services in the Bratislava region, which were only slightly influenced by the decrease of external demand. The annual growth of unemployed persons went up to 50.3%, which was 24.4 percentage points above the Slovak average. A similar development can be observed in the Bratislava region, where the annual growth of unemployed persons was 31.5%, 5.6 percentage points above the national average. The development of the economic activity rate reflected this increase of unemployment and declined by 0.3 percentage points in the Bratislava region, but surprisingly went up in the Trnava region by 0.1 percentage points.

Table 6.17: Development of employment in selected sectors in 2009 (percentage change against the preceding year)

	Slovakia		Bratislava region			Trnava region		
	2009/2008	Change against 2008	2009/2008	Change against 2008	Share on Total employment	2009/2008	Change against 2008	Share on Total employment
Agriculture, fishing	-9,7%	-9,438	-8,1%	-394	1,0%	-5,4%	-655	4,7%
Industry	-11,2%	-65,919	-13,0%	-7,750	11,3%	13,4%	9,517	32,9%
Construction	3,0%	5,370	6,2%	1,383	5,1%	7,4%	1,673	10,0%
Trade	-2,2%	-8,443	1,7%	1,660	21,1%	-5,9%	-2,032	13,2%
Hotels, restaurants	3,4%	1,845	-3,6%	-383	2,2%	-2,6%	-173	2,7%
Financial intermediation	-8,7%	-4,201	5,1%	1,055	4,8%	-22,5%	-725	1,0%
Public administration	-5,7%	-8,277	0,3%	95	7,8%	-2,1%	-246	4,6%
Education	2,3%	3,777	-9,4%	-2,387	5,0%	15,5%	2,380	7,3%
Health, social work	3,2%	4,321	8,0%	1,760	5,2%	7,7%	976	5,6%
Other community service activities	-43,3%	-41,021	-46,8%	-9,980	2,5%	-38,6%	-3,757	2,4%
Total	-1,0%	-22,941	7,1%	30,399	100%	5,4%	12,553	100%

Source: Statistical Office of Slovakia - Regdat database (2011), own calculations.

From a gender perspective, the annual growth of unemployed persons was stronger among males in the Bratislava region (54.7%) and even more so in the Trnava region (75.3%). In the Bratislava region, the increase in unemployment rate of males exceeded that of females by 1.9 percentage points, in Trnava region, the annual growth of males was higher by 0.3 percentage points and reached 2.2 percentage points.

Despite this, in 2009 the total employment in the Bratislava region grew by 7.1%, which was 8.1 percentage points higher when compared with national employment. The

highest increase in employment was recorded in health and social work by 8.0%, construction by 6.2% and financial intermediation by 5.1%. The impact of global recession in 2009 resulted in a decrease of employment in industry by 13% with total lay-offs of 7,700 employees. On the contrary in the Trnava region (according to recent statistical data) the employment in industry grew by 13.4% (by 9,517 employees) and the share of employment in industry reached 32.9% on total employment. Highest decrease of employment was recorded in financial intermediation (by 22.5%) and other community services and activities (by 38.6%).

Continuous growth of employment since 2004 has been reflected in the growth of labour costs, although the impact of the global recession resulted in lower growth of annual labour costs in 2009 (Table 6.18). Compared to national growth rates, an above-average growth was recorded in the Trnava region, with 38.7% in annual total labour costs; the growth of labour costs in the Bratislava region remained below the national average with 24.1%. In this period annual labour costs grew by € 3,284 from € 13,645 to € 16,929 in the Bratislava region. In the Trnava region, the growth was above the national average with increase of € 3,558 from € 9,206 to € 12,764.

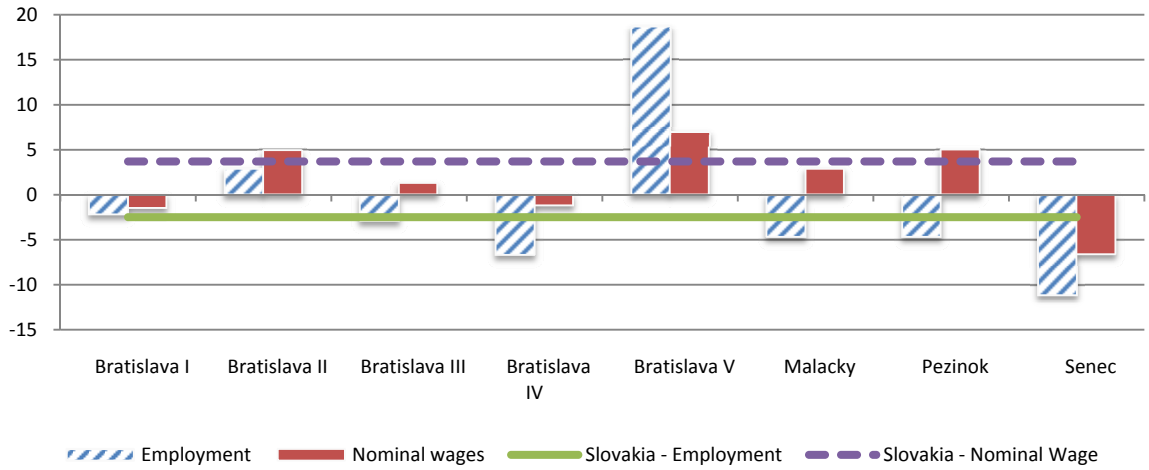
Table 6.18: Development of annual labour costs 2004 – 2009 (growth rate in%)

		2004	2005	2006	2007	2008	2009	Index 2009/2004
Slovakia	Total	8.0	5.8	7.1	8.9	8.0	2,3	36,2
	Direct	9.2	7.8	7.1	8.9	7.5	2,1	38,0
	Indirect	5.1	0.7	7.2	8.9	9.3	2,9	32,1
Bratislava region	Total	17.0	– 6.8	10.9	5.8	8.5	4,6	24,1
	Direct	13.2	– 1.6	11.0	5.5	8.0	4,7	30,2
	Indirect	27.1	–18.9	10.5	6.9	9.7	4,8	10,1
Trnava region	Total	5.4	4.6	7.3	14.4	6.4	1,5	38,7
	Direct	3.4	8.6	5.9	14.7	6.2	0,5	40,7
	Indirect	10.8	–4.9	11.2	14.5	6.5	3,6	33,6

Source: Statistical Office of Slovakia - Regdat database (2011), own calculations.

The development of the labour market in the first three quarters of 2010 relative to the same period of the preceding year is shown in Figures 6.10 and 6.11. The employment (average number of employed persons) in the Bratislava region went down by 0.3% and reached 400,938 employees. The highest decline was recorded in the district of Senec by 11.1% followed by the district of Bratislava IV with 6.7% which was accompanied also by annual decrease of nominal wages by 6.6% and 1.2% respectively.

Figure 6.12: Employment and nominal wage growth in The Bratislava region in 1-3Q 2010 (change in percentage against preceding year)

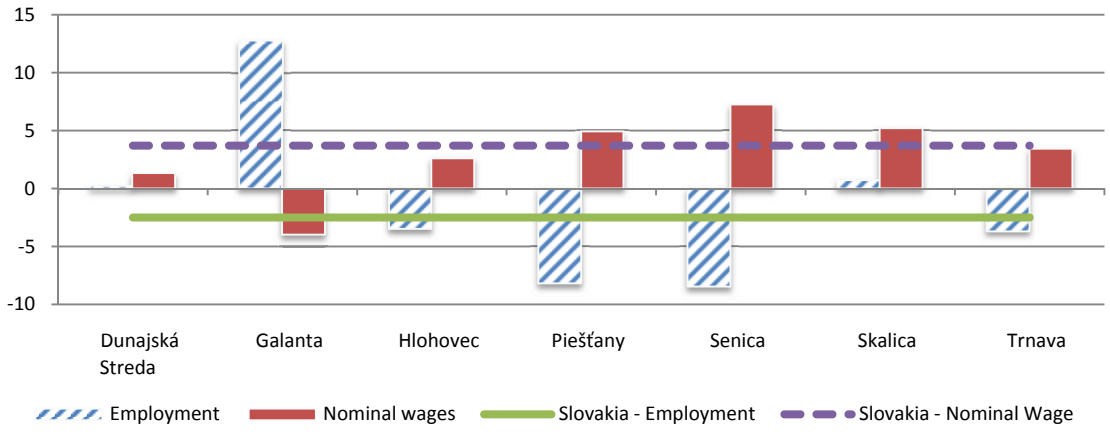


Source: Statistical Office of Slovakia (2011) – own calculations. Note: horizontal solid line – annual change of average number of employed persons in Slovakia in 1Q – 3Q 2010. Dashed line – annual change of nominal wage in Slovakia in 1Q – 3Q 2010.

In general the decrease of the average number of employed persons in this region was lower compared to the national average as was the annual increase of nominal wages. This reached only 1.9% (figure 6.10). By contrast, the highest growth of employment and wages was recorded in the district of Bratislava V with an annual increase in the average number of employed persons of 18.7% and annual growth of nominal wages of 7%. Although the annual growth of nominal wages in the Bratislava region has been lower than the national average, the average nominal wage reached € 1,052 which was still higher by than the national average by € 236.

In the Trnava region, the development on the labour market had been similar as in the Bratislava region. The average number of employed also went down by 1.7% and nominal wages grew by a modest 2.6%, which was below the national average. The highest decline in employment was recorded in the district of Piešťany by 8.2% and the district of Senica by 8.5%. In contrast to the Bratislava region, the average nominal wage continued to grow in all districts with only one exception – the district of Galanta. The average nominal wage in this region went down by 4.0% (Figure 6.11). The average nominal wage in the Trnava region reached in this period was € 749 and was thus lower (by € 67) than the national average. In comparison with the Bratislava region, the difference is even more evident and reached € 303.

Figure 6.13: Employment and nominal wage growth in the Trnava region in the first three quarters of 2010 (change in percentage against preceding year in %)



Source: Statistical Office of Slovakia (2011) – own calculations. Note: horizontal solid line – annual change of average number of employed persons in Slovakia in 1Q – 3Q 2010. Dashed line – annual change of nominal wage in Slovakia in 1Q – 3Q 2010.

Despite the adverse impact of the financial and economic crises, however, the general outlook for the Slovak CENTROPE regions can, be seen as promising. The economic recovery already started in 2010 with GDP growth expected to reach 4.0% to 4.2%. This creates favourable conditions for steady employment growth in the near future, especially in export-oriented sectors, which are the backbone of the Slovak CENTROPE. The recent development suggests that both CENTROPE regions with its distinctive economic structure are more or less capable (although not without problems) of adaptation to external shocks.

6.4 Conclusion

Bratislava and the Trnava region are among the most developed regions in Slovakia. The adoption of the common European currency in 2009 positively influenced the Slovak economy and integrated the Slovak Centrope regions in the EMU. The introduction of the Euro lowered transaction costs, exchange rate volatility against the euro and other currencies, administrative and accounting costs, increased price comparability and lowered capital borrowing costs. In 2009, the depreciation of neighbouring countries' currencies against the euro made the Slovak economy temporarily less competitive. However, this negative effect has faded away due to appreciation of these currencies close to the pre-crisis exchange rates against the euro.

The urban character of the Bratislava region with a high share of service sectors lays the foundation for its strong growth, no matter what economic policies are enacted by the central government, and makes the region more resilient to external economic shocks. By contrast the industrialised structure of the Trnava region, which is also strongly focused on the automobile and consumer electronics sector, made this region particularly susceptible to development of external demand.

The strong economic growth in recent years which contributed to a rapid increase in all main economic indicators in both regions was impeded by the global economic recession in main export oriented industries of this region (automotive and consumer electronics industry). This had a negative impact on the growth performance of both regions, but impacted more strongly on the Trnava region, which in turn implied higher unemployment rate increases compared to the Bratislava region. Since the beginning of the recession in second half of 2008, the unemployment rates in the Trnava region doubled and reached 12.3%, in the Bratislava region they increased from 3.6% to 6.2% in the first three quarters of 2010.

The economic recovery in main export markets is expected to contribute to real GDP growth of 4.0% to 4.2% in 2010, which should in the near future also lead to decreasing unemployment especially in the Trnava region. In 2011, the recovery of external demand together with gross capital formation also will be the main driving force behind economic growth. The expected contribution of public spending to GDP growth will be negative due to the implementation of an austerity package to reduce the general government deficit by € 1.7 billion; household consumption also is expected to stagnate in the following years.

However, the sectoral structure of CENTROPE regions (a high share of services and export oriented industries) will contribute to faster recovery compared to other Slovak regions. The Slovak CENTROPE regions are among those whose economic growth positively influences the overall economic structure and contribute to the improvement of economic and social development elsewhere in Slovakia.

The speed of economic recovery due to the recovery of main export markets resulted in increase of average nominal wages in the Bratislava region by 5.4% and 5.7% in the Trnava region in the first three quarters of 2010. The growth of turnover in both regions with subsequent decrease of average number of employees in industry resulted in an impressive increase of labour productivity by 20.1% in The Bratislava region and 17.9% increase in the Trnava region.

The construction sector in the Slovak CENTROPE has increased the labour productivity only in the Trnava region by an impressive 20.1% whereas in the Bratislava region, the labour productivity went down by 3.9% due to annual growth of employed persons by 4.3% the first three quarters of 2010.

The potential long-run impact of the global recession on unemployment and manufacturing is highly dependent on the development of external demand. The economic structure (63,4% share on overall turnover is created in manufacture of computer, electronic and optical devices and manufacture of motor vehicles[36]) and the strong position of large enterprises and small and medium enterprises in the role of subcontractors make employment especially in the Trnava region dependent on these two sectors and exposed to external shocks.

[36] Data 1-3Q 2010.

7. Summary and Policy Conclusions

The CENTROPE region represents a unique transnational economic area located at the intersections of Austria, the Czech Republic, Hungary and Slovakia. All four countries have a long common history. Nevertheless, their development after World War II was substantially divergent. Nowadays, in spite of the fact that all CENTROPE countries are members of the European Union, we can still find and observe significant disparities in their economic structures and performance. These mainly result from the past historical, political and economic development of the countries. Whereas Austria is an economically highly developed country, the Czech Republic, Hungary and Slovakia as former centrally planned economies are still converging to the economic level (e.g. measured by GDP per capita) of the western EU member countries.

CENTROPE basically consists of eight regions. The Austrian part is composed of the capital of Vienna with the highest GDP per capita in CENTROPE, Lower Austria and Burgenland. South Moravia is the only NUTS 3 level region of the Czech part. The Hungarian part includes the regions of Gyor-Moson-Sopron and Vas. The Slovak CENTROPE region is composed of the Bratislava and Trnava regions. According to this definition, the CENTROPE is a territory that covers 44.500 km^2 and has around 6.6 mio. inhabitants. The demographic differences between the sub-regions within the CENTROPE already point to a rather varied socio-economic structure. In particular in terms of population density an obvious differentiation of the urban centres of this region such as Vienna and Bratislava region and the more rural-peripheral regions (such as Burgenland) arises, while with respect to the age structure national differences dominate regional ones. The Slovak CENTROPE has an above average share of population aged 15-64 years (i.e. of the active aged) at the expense of both low shares of youths (up to 15 year olds) and older citizens (64 and older). The Austrian CENTROPE by contrast is characterized by low shares of active aged and high shares of older citizens, while the Hungarian and Czech CENTROPE regions are located somewhere in between.

The CENTROPE comprises two capital cities and a number of further major cities (such as Brno and Györ). It is a unique economic area where the impact of cross-border policies as well as natural convergence processes can be observed. The industrial agglomerations around the main cities, the large number of universities, research institutions and the accessibility due to international airports, railway corridors as well as the region's geographic location in the common European market, provide substantial potential for long term economic growth and prosperity in this region.

7.1 Macroeconomic situation in the CENTROPE countries

Before the financial and economic crisis, CENTROPE was - in terms of GDP - one of the fastest growing areas of the EU, though the individual performance of countries tended to differ significantly. While Slovakia and the Czech Republic had very high growth of GDP reaching 7.7% and 5.9% (measured as the average growth in constant prices in 2004-2007), Austria's performance (3.1%) was weaker if compared to the CENTROPE average (5.0%). However, when compared to the EU 27 average of 2.7% Austria also performed above average. Hungary suffered in the pre-crisis period from a restrictive fiscal policy and its growth rates amounting to 3.3% were lower than in Slovakia and the Czech Republic but higher than in Austria. Over a longer time horizon the average growth performance in the CENTROPE tended to improve from 2004 onwards, with the exception of Hungary. Thus, growth rates in the period of 2004-2007, i.e. after EU accession of ten new member states, were higher than in the years before, not only in the Czech Republic and Slovakia, but also in Austria. FDI inflows, structural changes in the labour market and also EU–accession aspects (including net EU transfers and the adoption of the EURO in the Slovak Republic) belonged to the main driving forces of growth.

Since the end of 2008 the economic development of the CENTROPE countries has been, however, affected by the economic and financial crisis. In general GDP declined by more than in other EU countries, given the strong dependence of the CENTROPE on foreign trade and manufacturing industry. At the same time this dependence is also the source of a relatively strong recovery, as global trade grew strongly in 2010. The effects of this on the CENTROPE countries were, however, more of an indirect nature, as Germany benefitted in the first place and other countries, like the CENTROPE countries benefitted in the second place through German spillovers. Certainly this can be considered a positive aspect of the integration of the CENTROPE into the EU, but it also raises the issue whether the CENTROPE wants to be more or less dependent on the developments and economic policy in one country.

Together with overall GDP the productivity and employment indicators also declined. The pre-crisis experience has shown that improving the employment situation in the new member state countries (NMS) of the CENTROPE depended heavily on high economic growth. Only with high GDP growth rates employment levels tended to increase and unemployment levels tended to decline, while most of the growth was generated through advances in productivity. Thus, a fundamental question regarding the labour market situation is whether the CENTROPE countries can return to pre-crisis growth levels or not. If this is not the case, employment prospects, especially for

those with low or even medium education might be worse than before the crisis, at least in the medium run.

7.2 Economic position of the CENTROPE Regions in Europe

On a regional level, however, the CENTROPE economy as a whole has a history of outperforming the European Union average in terms of GDP growth. Due to faster economic growth in the CENTROPE, the GDP per capita of this region surpassed the EU 2 average already in the beginning of this decade. In 2007, the GDP per capita of the CENTROPE was by 11% higher than the EU average. Also annual productivity growth rates were higher than in the EU in the pre-crisis times and the situation on the labour markets is also more favourable than in the EU average. In 2008 all of the NUTS 3 regions of the CENTROPE had unemployment rates below the EU 27 average. Only one NUTS 2 region (West Transdanubia) in the CENTROPE had substantially lower employment rates than the EU average in 2008.

There are, however, also large disparities among the regions of the CENTROPE. These are closely linked to urban rural divisions, but also to still existing national division lines. Five regions of the area do not reach GDP per capita EU average, and only Vienna and Bratislava region – as large urban agglomerations - are clearly above the EU average, while the Hungarian CENTROPE and South Moravia are clearly below it. In addition only the Trnava region, the Bratislava region and South Moravia surpassed the EU 27 average GDP growth during 2004/2007 and, thus, were the main driving forces of growth in the CENTROPE.

Aside from high aggregate growth the CENTROPE has thus also experienced substantial internal convergence in the last decade. This tendency existed already before enlargement but gained in force on account of the rapid economic growth of Slovak CENTROPE regions since then. In the pre-accession period the growth rate of the fastest growing NMS region of CENTROPE exceeded that of the fastest growing Austrian region by 4 to 7 percentage points. In the period since 2004 average annual growth rates in the Slovak regions exceeded those of the Austrian CENTROPE by between 9-12 percentage points. Those of South Moravia exceeded those of Austrian regions by at least 3 percentage points and only West-Transdanubian regions of CENTROPE grew slower than the fastest growing Austrian regions on account of the increasing economic problems of Hungary. Thus the difference between the poorest and the richest region in CENTROPE reduced from 122% of the EU average in 2000 to 93% in 2007.

The division line between Austrian and new member state regions in CENTROPE, which was and still is one of the main division lines in the region, is therefore becoming increasingly blurred. The division line between large urban agglomerations, industrial regions and rural-peripheral regions in the region is, however, becoming increasingly important. For example in the year 2000 the difference in GDP levels between Bratislava region as the prime example of an urban agglomeration in the new member states and the city of Vienna was € 14.500, while the difference between the richest and the poorest new member state region amounted to € 10.700. By 2007 this relationship had changed fundamentally. GDP per capita in Bratislava region was only by € 700 lower than in Vienna but by over € 25.000 higher than in the poorest new member state region.

7.2.1 Convergence has important long run repercussions on the comparative advantages of the region

This process of convergence, which is also expected to continue in the future has important repercussions for the development of comparative advantages of the region. To some degree it can still be argued that low wage costs and a predominantly medium skilled labour force are important elements of the comparative advantage of the CENTROPE, at least in the parts that lie in the new member states. The differences in income levels between the Austrian and the new member states' parts of the CENTROPE currently combine to the unique economic advantage of both low cost high growth locations with some of the most highly developed regions of the EU at very short distances from each other. As convergence progresses, however, these statements are likely to become less and less true. Thus issues that shape much of the policy debate in other border regions (such as generating critical masses in education, research and innovation to foster joint development) are likely to become much more important in the policy arena.

This underlines the importance of growth oriented cross-border policies in the fields of innovation, research and development as well as human capital development for the future of the region. This seems to be even more important given that the available evidence suggests that individual regions within the CENTROPE have a substantial innovation potential. Yet, despite improvements with respect to certain factors, shaping these more "modern" competitive advantages the CENTROPE is in terms of education structure and R&D expenditure still a below average region relative to the EU. In addition the process of convergence is likely to change the spatial configuration of the region. As convergence progresses other locations are likely to become attractive for

individual sectors as well as residents. This may give rise to suburbanization (even across national borders) and change the specialization of regions. Regions are increasingly becoming interdependent.

7.3 CENTROPE regions: Return to growth?

7.3.1 CENTROPE region was hit less strongly by the crisis than the CENTROPE countries

Given this background the main interest of the first CENTROPE regional development report was with the potential long and short term impact of the recent financial and economic crisis on the individual sub regions of the CENTROPE. Here results suggest that most of the regions of the CENTROPE have recovered from the crisis more rapidly than originally expected. While the CENTROPE countries were hit harder than the EU 27, preliminary evidence available from forecasts of regional GVA and employment growth for 2008 and 2009 suggests that the CENTROPE region was not. In aggregate GVA is expected to have declined by less than in the EU average, and is also expected to resume growth more quickly. According to forecasts provided by Cambridge Econometrics a return of the CENTROPE to growth of 1.8% (as opposed to decline of 3.5% in 2009) is expected in 2010. Both indicators show better performance than the EU average in these years. This suggests that the impact of the crisis on aggregate growth performance of the CENTROPE was of limited duration and recovery has been more rapid than expected and the processes of both above average growth and internal convergence found to apply since 2004 are likely to continue in the future.

7.3.2 In the Austrian CENTROPE economic structure determined the impact of the crises

But at the same time there was also some important variation across the regions of the CENTROPE. In particular the business cycle of the Austrian CENTROPE both during the phase of growth until 2008 and recession since 2009 was primarily driven by sectoral differences in individual regional economies. Highly export dependent industrial regions of the Austrian CENTROPE (such as Lower Austria) showed a noticeably better development in the upswing – but also a noticeably worse development in the recession – than regions, which depend more strongly on internal demand. This in turn implied that the Austrian CENTROPE, in which both the city of Vienna as well as the more rural Burgenland traditionally have a low share of export

intensive industrial production, lagged the Austrian development in the upswing, but performed better than the Austrian average in the downturn.

The preliminary results for 2009 suggest that Vienna's GDP declined least strongly of all Austrian regions (by -2.5%) and that unemployment also increased by the lowest percentage (+9.9%). By contrast the industrial region of Lower Austria was much more strongly affected, with GDP declining by -5.5% and unemployment rising by almost a quarter (24.5%) in 2009. Burgenland, finally, due to its low share of export oriented manufacturing in total GVA was also slightly less strongly affected by the crisis that the Austrian average. Its GDP declined by- 3.5% and unemployment increased by 14.9%.

The results for the first two quarters of 2010, however, suggest a certain recovery of the Austrian economy with a return to recession becoming increasingly less likely as the year progresses. In the first half of 2010 GDP in Vienna according to preliminary estimates increased by 1.8% and unemployment increased by 2.0% relative to the previous year. In Burgenland GVA grew by 1.6% and unemployment even reduced (by 4.5%), while Lower Austria on account of an export structure that is less strongly focused on Germany than that of other industrial provinces of Austria grew by only 1.0%, while unemployment increased by 1.9%.

Despite this it is foreseeable that in the near future the Austrian economy will not return to the high growth rates registered in the boom years preceding the crisis, with a number of downside risks existing with respect to the impact of budget consolidation plans next year and a potential reduction of export dynamics in the event of further currency crises in the Euro-area. Current expectations are that Austria enters a protracted period of rather sluggish economic development. The combination of high export growth as well as government budget cuts expected for next year suggests that in particular Vienna, where a substantial part of employment as well as internal demand is accounted for by the non-market service sector, and Burgenland, which is also highly dependent on internal demand, will face modest growth rates of GDP. In these provinces it is questionable whether growth rates will suffice to reduce the historically high unemployment rates.

For Lower Austria, by contrast, the outlook is slightly brighter. While this province has not profited as strongly form the recovery as other industrial provinces in Austria, this is primarily due to a different export structure which is slightly less strongly focused on Germany and more strongly on the neighbouring new EU member states. As these countries emerge from crisis, one can expect above average growth to resume.

7.3.3 In the Czech CENTROPE the crisis had a slightly stronger and more protracted impact

The Czech part of the CENTROPE, South Moravia, is a rather heterogeneous region formed by two main areas: the Brno agglomeration and the southern rural border area. As was the case for the Czech Republic as a whole, this region was increasingly affected by the economic crisis as of 2008. Following the preceding boom years 2005 to 2007 with growth rates of over 6%, the Czech economy slowed down to 2.5% of GDP growth in 2008. In 2009 the Czech economy went through the deepest decline in GDP (-4.1%) since 1991.

This adverse macroeconomic situation is also reflected in the development at a regional level. Between 2005 and 2007, South Moravia experienced a strong boom that peaked in 2006, when GDP grew by 8.1%. In 2008 the economy of South Moravia faced a perceptible downturn as the growth rate dropped to 2%, whereas the rate of unemployment still decreased by 1.2 percentage points to 6.2%. In 2009 the impact of crisis fully influenced economic activity in the Czech Republic as well as in South Moravia. The regional unemployment rate increased to 8.9%. Furthermore the influence of the crisis can be illustrated by a significant decline of manufacturing industry and construction. Industrial production decreased by 19% in terms of revenues from market sales and 16% in terms of total number of employees. Basic construction output declined by 11%. In addition to that the number of visiting tourists decreased by 12%.

The forecast for 2010 expect the Czech economy to grow by 2%. In the first half of 2010 a substantial recovery of industry and exports was observed on the national level. However, this is not the case in South Moravia. Here industrial production (measured by revenues from market sales) decreased by 1.1% which is the fourth worst result among all Czech regions. Employment in manufacturing declined by 15.8%. This is the highest decline among the NUTS 3 regions in the Czech Republic. Similarly, basic production in construction plunged by nearly 36% compared to the previous year in the first half of 2010 and despite a marked decrease in the number of employees, productivity of labour also witnessed a deep drop of 16.3%. Trends in tourism are slightly less negative. Yet the decline in tourist arrivals to the Region from 2009 continued although its pace slowed down to -4.7%. Recent statistical data thus suggest that South Moravia has been affected by the economic crisis more severely than the majority of the Czech administrative regions. The results in 2008 and 2009 are still relatively comparable with the national values, but the data for the first half of 2010 indicate continuing recession mainly in the secondary sector which accounts for

roughly a third of total GVA in South Moravia. Thus, the outlook for 2010 – in contrast to the fast recovery expected in many other CENTROPE regions – suggests a continued stagnation.

Considering the medium-term perspectives of South Moravia, however, the biggest development potential rests in the knowledge economy. This is due to the position of Brno as a significant university centre characterized by the concentration of a number of scientific and research centres. Apart from a range of other activities, two projects of national significance are being developed currently in Brno, whose respective budgets total to around € 200 mil. and which attempt to obtain additional funds from the European sources.

7.3.4 In the Hungarian CENTROPE the more diverse regions were less strongly affected

The Hungarian CENTROPE, which consists of the regions of Györ-Moson-Sopron and Vas, was also more strongly affected by the crises than the Hungarian average due to a strong export oriented manufacturing sector. In particular this region felt the decline in industrial production at the end of 2008 more severely than other Hungarian regions that are more strongly focused on national demand. This led to a slightly more severe decline in employment and a substantially larger increase in unemployment than in the Hungarian average. Industrial production declined by 25.0% (-18.6% in the national average) and unemployment increased by 48.3% (national average +16.7%) in the Hungarian CENTROPE in 2009. The only positive signals in this year stemmed from an increase in the number of foreign tourists from nearby countries, who obviously took advantage of the low exchange rate of the Forint, and from construction, which profited from the implementation of a number of EU-financed construction projects.

However, the data also provide some indication that as an aggregate the Hungarian CENTROPE – on account of the favourable development of foreign trade – is also emerging from the crisis more rapidly than most other Hungarian regions. Technical production of industry has increased by 11.5% in the first half year of 2010 and the announcement of major investment plans of some important producers in the vehicle and machinery industry at the beginning of this year suggest some increase in the dynamics of the region already in 2010 and 2011. Furthermore the high export openness of the Hungarian CENTROPE also suggests that this region should be less strongly affected by the Hungarian governments budget cuts in the next years than other regions.

There are, however, important differences in structural starting conditions between the two regions of the Hungarian CENTROPE. In particular in the current phase of stabilisation in particular Győr-Moson-Sopron has a better relative position than Vas and differences in economic indicators are growing between the two counties of Hungarian CENTROPE. Furthermore, in the Hungarian CENTROPE there is also some evidence of increased spatial interdependence in settlement patterns in terms of the suburbanisation process of Bratislava across the Hungarian border. Interestingly, although this process started in the direction of Austria some 4 to 5 years ago, it seems to have gained in the direction towards Hungary in the years before the start of crisis.

7.3.5 The Slovak CENTROPE region has been fast to recover dynamics

The Slovak part of the CENTROPE, which consists of the two most developed regions in Slovakia - Bratislava region including the capital city of Bratislava, and Trnava region - after a protracted period of rapid growth that peaked in 2007 - entered recession together with the Slovak economy in 2009. In contrast to the other regions of the CENTROPE, here the development – aside from the impact of crisis - was also influenced by the adoption of the common European currency in 2009. This is expected to contribute to increasing integration of the Slovak CENTROPE regions into the EU by lowering transaction costs, exchange rate volatility and administrative and accounting costs as well as contributing to increased price comparability and lowered capital borrowing costs. In 2009, however, the depreciation of neighbouring countries currencies against the euro made the Slovak economy less price competitive temporarily. As these currencies quickly appreciated close to the pre-crisis exchange rates against the euro again, however, this effect faded out rather quickly.

Thus the crisis and the associated decline in export demand seemed to have a more important impact on regional development in 2009 than EURO adoption. Here, similarly to the Austrian case, the Slovak CENTROPE regions, performed better than the national average during the first complete crisis year 2009. Although unemployment rates almost doubled (reaching 4.4% in Bratislava region and 8.4% in the Trnava region), they remained substantially lower than the national unemployment rate of 12.7% in 2009. In addition the Bratislava region with its high share of services experienced better development than the export dependent Trnava region, which contributed about 4.1 percentage points to the increase in the region's unemployment rate and a decline in economic activity throughout.

For 2010, the expected economic recovery in the main export markets is expected to contribute to real GDP growth which is expected to amount to 4.0% - 4.2% in 2010 in

Slovakia. This is likely to benefit also the Slovak CENTROPE as in 2010 the recovery of main export markets already resulted in an increase of average nominal wages in Bratislavský region by 5.4 % and 5.7 % in the Trnavský region in the first three quarters of 2010; the sales growth in both regions along with a decrease in the number of employees in industry resulted in an impressive increase of labour productivity by 20.1 % in Bratislavský region and 17.9 % increase in the Trnavský region.

This should in the near future also lead to decreasing unemployment especially in the Trnavský region (where unemployment reached 12.3% in the first three quarters of 2010). Here, the recovery of external demand together with gross capital formation will be the main driving force behind nationwide economic growth. The planned cuts of € 1.7 bill in public spending will have a negative impact on GDP growth in both regions. However, considering the openness of the Slovak CENTROPE and its dependence on external demand, these fiscal restrictions may be expected to have relatively small impact on overall economic performance and the Slovak regions are assumed to resume growth rapidly.

The potential long-run impact of the global recession on unemployment and manufacturing, is, however, highly depend on the development of external demand. The economic structure (with 63,4% of overall turnover created in manufacturing of computer, electronic and optical devices and manufacture of motor vehicles) and strong position of large enterprises make employment growth in particular in Trnavský region strongly dependent on these sectors.

7.4 Common policy challenges in recovery

In sum – despite some regional variation – the currently available information suggests that most of the regions of the CENTROPE have emerged from the economic crisis more rapidly than expected and that the CENTROPE will continue to grow faster than the European average in the post recession period. Nonetheless the common experience of the crisis has created a number of new policy challenges (and reinforced pre-existing ones) and – in the face of increasingly scarce government funds - increased the necessity for co-operation.

7.4.1 Improving the institutions and data situation for cross-border spatial planning

In particular, as highlighted above, the process of convergence is likely to change the spatial configuration of the region and may give rise to conflicting interests with respect

to land use patterns. This in conjunction with the high population density in many parts of the region, its rapid economic growth as well as the many natural sites of high environmental and also touristic value, which are bound to give rise to conflicting interests with respect to land use patterns, will make initiatives to encourage transparent and open processes to co-ordinate cross-border spatial planning increasingly important in the future. In this respect one could for instance think of creating additional cross-border institutions to improve the current situation with respect to spatial planning.

Irrespective of its concrete form, these institutions would, however, face serious data constraints since the lack of reliable and comparable data on a regional and even more so on a local level is currently one of the most severe impediments to any such initiative. Currently data availability from (comparable) EUROSTAT sources is restricted to rather aggregate indicators that often lack the (sectoral and regional) detail necessary for spatial planning processes and certain indicators (e.g. land use patterns, housing and land prices and others) are available only for very few regions, and even when available suffer from lacking comparability. Thus any initiative at creating cross-border spatial planning institutions should go hand in hand with data development initiatives.

7.4.2 Reducing cyclical risks by diversifying the industrial structure

In addition an important feature of regional development in the aftermath of the economic and financial crisis shared by almost all parts of the CENTROPE is that more diversified and urban regions and regions with a more knowledge intensive industrial base have been more resilient to the economic crisis than regions that are more strongly focused on a few industries or that have a lower technological base. Furthermore, a second important result is that as convergence within the CENTROPE continues, technological and human capital factors will become an increasingly important determinant of the comparative advantage. This first of all suggests that, while strategies focusing on providing ideal conditions for only a few industries can be highly successful in times of good economic growth, they also bear a certain element of risk in times of recession or structural decline of this industry. A diversified economic structure either in terms of a broad sectoral and technological mix or in terms of a diversified functional specialisation is thus one way to insure against such cyclical variations.

7.4.3 Fostering knowledge economy

Second of all, it suggests that measures to foster the knowledge economy will be an important determinant of future comparative advantages in this region. The CENTROPE disposes of some important preconditions to be a strong pole of knowledge economy development in Central Europe. The capital cities of Vienna and Bratislava and also Brno are large university cities and important hubs of knowledge and research. All told there are 25 public universities and art academies as well as ten universities of applied sciences in these three cities. In addition several hundred non-university research institutions and numerous technology-oriented and research-focused enterprises work in the CENTROPE. There are, however, also some weaknesses related to a low share of R&D expenditures and a human capital structure that is strongly focused on intermediate skill levels in many CENTROPE regions. On an international scale the CENTROPE is characterized by a large breadth in terms of research institutions, but a rather narrow peak. It is therefore important to intensify the cooperation in international research programmes within the CENTROPE. Available co-financing opportunities from European sources could be a strong incentive in this field, additional incentives for cross-border research could be another. Furthermore policy could aim to create and improve conditions for attracting graduate and postgraduate students as well as young scientists especially in technical disciplines in the region. This for instance could be achieved both by increased co-operation of educational institutions and increasing researchers' mobility.

7.4.4 Integrating sectoral policies

Aside from these measures directed at increasing excellence, policies directed at the improved cross border co-ordination of sectoral policies also could contribute to diversifying the risk structure of the CENTROPE. One case in point is tourism, which contributes an important share to GDP in many of the economies of CENTROPE and where results suggest that, apart from the urban agglomerations, many of the CENTROPE regions present relatively similar rural areas in which touristic development focuses on spa resorts of regional significance, wine production, as well as other aspects of wellness and weekend tourism. Yet casual observation suggests that co-operation between regions in developing tourism are still limited to a few cases only. Other cases in point are for instance the automobile cluster in the region, which has, however, already received attention in a number of previous studies, and the business services and consulting services sector, which is of particular importance in the urban agglomerations of the CENTROPE and which, on account of differences in

transportability of services, is characterised by quite different internationalisation patterns than in the case of industry. Here again existing policies towards this sector in individual regions could be more closely co-ordinated.

7.4.5 Further development of existing co-operations in active labour market policy

Such a policy will have to be supported by appropriate labour market policy measures. Here employment rates among the population with completed primary education have been persistently low and even declined despite extended phases of rapid economic growth in some of the CENTROPE regions. In addition, in many parts of the region it is expected that growth will not suffice to ensure a reduction of unemployment. This suggests that combating unemployment and in particular long term unemployment and thus avoiding the associated risk of de-qualification will be a major shared problem in many parts of the CENTROPE. Aside from sound macro-economic policies, which, however, can be influenced only in a rather indirect way by regional governments, efficient active labour market policy and upgrading of skills of the low and medium skilled segment of the labour market through policies to ensure a higher participation in life-long learning is definitely one important element in designing regional economic policy in a cross-border context. These policies are important not only from a short term but also from a long term perspective, since the experience of the boom 2006-2008 shows that in many CENTROPE regions labour shortages arise rather rapidly (and at quite high unemployment rates) when employment conditions are improving.

7.4.6 Improving cross-border labour mobility

In addition the preliminary results of a study conducted parallel to this project suggest that the CENTROPE is in general a region from which more high skilled workers emigrate than immigrate and which thus faces the risk of brain drain. Aside from the still existing institutional restrictions on cross-border labour mobility on the Austrian labour market (which has led cross-border commuting to Austria to be rather unimportant given the wage differences, but will disappear on 1st of May 2011), empirical and anecdotal evidence suggests that cross-border worker mobility is also hampered by difficulties of mutual skill recognition (due to different educational systems), risks of over-qualified employment and difficulties in gaining information. This suggests that existing initiatives aimed at improving cross-border placement activities for workers, improving the comparability and cross-border transferability of qualifications as well as providing information on labour market possibilities for workers should be strengthened, with the aim of making the CENTROPE as a whole an

integrated labour market in particular for the high skilled, thereby reducing the potential for brain drain.

7.4.7 Complementing labour supply side measures by policies focused at labour demand

Aside from these labour supply side measures it should also be noted that labour demand side measures are an important aspect in the development of labour market policies. In this respect there is a close relationship to the diversification of the production structure. One of the findings of this report is that many regions in the CENTROPE are still characterised by low shares of services in the sectoral structure of both GVA and employment. A number of studies have, however, shown that services industries are particular effective in creating employment for less skilled workers. Policies directed at attracting mostly industrial FDI could therefore be augmented by cross-border policies aiming at the development of the service sector. Indeed, aside from aiming at the currently highly industrialised regions, such a strategy could also be of primary importance for the urban agglomerations of the region, where business services are today already a major sector in terms of employment.

8. ANNEX1: Glossary of technical terms and abbreviations

Active Aged – Population in the age group of the 15 to 64 year olds

Balance of payments – the net balance of all monetary transactions between a country and the rest of the world including payments for the country's exports and imports of goods, services, and financial capital, as well as financial transfers

Compensation per Employee – sum of wages and salaries paid to employees per employee.

Cross-Border Commuter – person working in another NUTS 2 region than the country of residence

Current account - the balance of trade (net earnings on exports – payments for imports), factor income (earnings on foreign investments – payments made to foreign investors) and cash transfers.

Employees – number of employed persons in dependent employment.

Employment according to ILO\ELFS definition – persons who were in paid employment for at least one hour in the week preceding the interview.

Employment rate – Number of employed in a population group in % of the population of this group.

European Labour force Survey – Regular survey of a sample of the EU population, used to determine (amongst others) employment and unemployment

Full time employed – person working in a full time job according to self definition

Gross Domestic Product (GDP) - the market value of all goods and services produced within a country in a given period

Gross Value Added (GVA) - the value of goods and services produced in an area, industry or sector of an economy.

High skilled worker – employed with a completed tertiary (or equivalent) education (ISCED 5 or more)

Internal Commuter – person working in another NUTS 2 region than the region of residence but within the same country

Labour Force – The sum of employed and unemployed persons

Long term unemployed – Persons with duration of unemployment of more than 12 months

Low skilled worker – employed with an educational attainment of at most compulsory education (ISCED 2 or less)

Medium skilled worker – employed with highest completed education at vocational or upper secondary level (ISCED 3 or 4)

NUTS (Nomenclature des unités territoriales statistiques) – hierarchical system of classifying regions

Part time employed – person working in a part time job according to self definition

Registered Unemployment – number of unemployed according to national (public employment service) definitions.

Registered employment – number of employed according to national definitions.

Unemployment according to ILO\ELFS definition – persons who were not employed but actively looking for work in the 4 weeks before the interview and available for employment.

Unemployment rate – Unemployed in percent of the labour force (=employed+unemployed)

Factsheet 1: The CENTROPE and its regions: Area, Population and GDP

	Austria			Czech Rep.	Hungary		Slovakia			
	Burgen-land	Lower Austria	Vienna	South Moravia	Györ Sopron Moson	Vas	Bratislava	Trnava	CENTR OPE	EU 27
	Population, Population Structure & Area									
Area (km^2)	3,965.5	19,177.7	414.7	7,196.3	4,208.5	3,336.1	2,052.6	4,147.2	44,499.0	4,403,356.7
Population (2008)	281,185	1,596,538	1,674,909	1,140,534	444,384	261,877	610,850	557,151	6,567,428	497,670,577
Share Females (%)	51.0	51.0	52.2	51.3	51.7	52.0	52.6	51.3	51.6	51.2
Share aged 15 or less (%)	13.9	15.6	14.4	13.9	14.6	14.1	12.9	14.4	14.4	15.7
Share aged 65+(%)	19.7	18.2	16.4	15.2	15.4	16.3	12.5	12.1	16.0	17.0
	Population Forecast									
Population 2020* (2010=100)	101.2	104.5	107.9	101.4	99.0	99.0	102.9	99.5	102.8	–
Population 2030* (2010=100)	103.4	109.7	115.3	100.5	96.7	96.7	102.1	96.8	104.4	–
Share ager 15 and under 2030* (in %)	59.9	61.0	65.8	64.2	64.2	64.2	66.7	11.1	64.2	–
Share aged 65 and more 2030* (in %)	27.8	24.8	18.9	22.3	23.3	23.3	21.5	23.2	22.5	–
	GDP, Productivity Compensation per employee									
GDP per capita at PPS (2007)	20,261	24,926	40,616	18,317	17,524	14,649	39,911	20,402	24,960	27,677
Nominal GDP growth (average annual change 2004/2007)	2.9	4.3	3.8	7.5	3.9	1.7	13.2	16.4	6.0	5.2
Productivity (GDP per employed) 2007	48,860	57,939	73,144	36,936	39,471	33,567	57,811	49,287	55,709	55,691
Compensation per employee (nominal 2006)*	31,910	34,034	42,636	11,336	9,934	9,934	12,398	4,465	22,131	–
Compensation per employee (at PPS)	27,726	29,575	36,388	12,328	12,645	12,645	10,303	15,714	–	–
	Forecast GDP and Employment Growth									
GDP Growth 2009	–3.5	–3.8	–2.5	–4.1	–9.3	–10.0	–4.0	–8.2	–3.5	–4.4
GDP Growth 2010	+1.2	+2.0	+1.7	+0.7	+1.2	–1.2	+3.6	+2.9	+1.8	+1.1
GDP Growth 2011/14 (average annual growth rate)	+1.5	+2.1	+2.2	+3.4	+3.5	+0.8	+4.0	+4.3	+2.4	+2.3
Employment growth 2009	–0.9	–0.9	–0.5	–1.2	–3.7	–6.7	–0.3	–4.8	–1.3	–1.9
Employment growth 2010	–0.6	–0.5	–0.3	–1.5	–0.6	–1.8	+0.2	–0.2	–0.6	–1,1
Employment growth 2011/2014 (average annual growth rate)	+0.5	+0.7	+0.9	+0.7	+1.2	+1.1	+1.9	+1.7	+1.0	+1.2

Source: Eurostat, Cambridge Econometrics, own calculations * Data available only available at NUTS 2 level, Data for Trnava includes West Slovakia, Data for South Moravia includes Czech Southeast, data for Györ and Vas is data for West Transdanubia. - = data not available

Factsheet 2: The CENTROPE and its regions: Labour markets, Structure, Education and R&D

	Austria			Czech Rep.	Hungary		Slovakia			
	Burgen-land	Lower Austria	Vienna	South Moravia	Györ Sopron Moson	Vas	Bratislava	Trnava	CENTROPE	EU 27
	Labour market									
Unemployment rate (2008)	3.6	3.4	6.7	4.4	3.5	5.5	3.4	5.9	5.0	7.0
Unemployment rate male (2008)*	-[1)]	2.9	6.9	3.0	3.9	3.9	3.4	4.6	-[1)]	6.6
Unemployment rate females (2008)*	-[1)]	4.0	6.5	5.4	6.2	6.2	3.4	7.6	-[1)]	7.5
Unemployment rate 15-24 year old (2008)*	-[1)]	8.4	14.0	7.8	10.4	10.4	7.6	12.0	-[1)]	15.6
Employment rate (2008)*	72.8	73.9	67.4	65.9	62.1	62.1	72.1	65.5	67.3	65.8
Employment rate of 55-64 year olds (2008)*	39.5	42.8	38.8	47.3	32.7	32.7	57.0	39.4	42.1	45.7
Employment rate men (2008)*	66.2	67.7	62.3	56.5	54.6	54.6	67.7	73.2	-	59.8
Employment rate females (2008)*	79.3	80.0	72.7	75.2	69.8	69.8	76.8	57.8	-	72.7
	Structure of employment									
Share of agriculture (2007)	6.7	8.3	0.7	5.4	4.7	4.3	1.3	5.0	4.6	5.6
Share of Industry (2007)	27.8	27.3	19.1	43.0	43.3	39.6	23.4	43.1	34.1	27.5
Share of Services (2007)	65.6	64.4	80.2	51.7	52.0	56.0	75.2	51.9	61.3	66.4
Share of Low Skilled (2009)*	33.3	27.2	23.6	16.9	25.8	25.8	14.1	21.5	22.4	37.1
Share of Medium Skilled (2009)*	55.0	58.9	55.0	69.4	53.1	53.1	58.7	68.3	61.4	42.9
	R&D and education									
R&D Expenditure in % of GDP*(2007)	0.62	1.2	3.6	1.24	0.6	0.6	0.8	0.4	-	1.85
R&D Personnel in total employment(2007)	0.8	4.7	3.3	1.6	0.6	0.6	3.3	0.6	1.8	1.6
Students in tertiary education in % of total population*	0.6	0.5	8.5	4.6	3.2	3.2	11.8	3.0	4.5	3.8

Source: Eurostat, Cambridge Econometrics, own calculations * Data available only available at NUTS 2 level, Data for Trnava includes West Slovakia, Data for South Moravia includes Czech Southeast, data for Györ and Vas is data for West Transdanubia. – data not available -[1)] data not available on account of few observations in ELFS (for at least one CENTROPE region).