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Finacial Crisis in Central and Eastern Europe – Development Diferentiation in the Regions*

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Abstract: Crises existed not only in the last decades. In each country fluctuations such as upswings or downturns can be observed in the economy. The serious economic crisis can take place when the extending long-lasting decline continues. In the situation when the crisis appears in the economy it is significant to have a stable financial system. The last financial crisis showed weakness of the contemporary model of social-economic development functioning in the global world, also in Central and Eastern Europe (CEE). The paper presents the situation of Central and Eastern Europe during the financial crisis. The goal is to analyze the most important kinds of macroeconomic indicators of CEE countries, present development differentiation in the regions at NUTS2 level and systematize causes of the crisis and anti-crisis activities in Central and Eastern Europe. In this paper theoretical aspects of the financial crisis and financial crises' types are shown as a basis for further analysis. The theoretical study, the observation method and the statistical data analysis were used to present the global financial crisis influence on the CEE economy. Finally, the method of coefficient of variation was implemented to confirm regional development differentiation in Central and Eastern Europe regions and to answer the question if the CEE regions can still narrow the development gap between them and other regions of the European Union.

Introduction

The global crisis crunch arrived in Central and Eastern Europe in October 2008, after the collapse of Lehman Brothers. CEE emerging countries have generally

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been hit hard and the recovery so far has not been remarkable, though there are significant differences between countries. These various developments in the CEE countries raise questions about their pre-crisis development model, which was largely based on the integration and cooperation with western Europe. What were the reasons for the crisis in Central and Eastern Europe? Should this model of development be changed? Will new member states of European Union bridge the development gap in relation to the other countries of the EU. Did the crisis change regional structures in Central and Eastern Europe countries?

It is difficult to answer satisfactorily all the above-mentioned questions, but the analysis of the economic situation in CEE countries will bring the solutions closer. The aim of this article is to analyze the causes of the crisis, its symptoms, the crisis influence on the regional differentiation and also anti-crisis activities undertaken in Central and Eastern Europe. To achieve this goal, firstly, the theoretical aspects of the financial crisis and financial crises' types were presented. Secondly, main macroeconomic indicators of CEE countries were examined and crisis causes presented. Thirdly, development differentiation in the CEE regions at NUTS2 level was analyzed and the method of coefficient of variation was implemented to confirm regional development differentiation in Central and Eastern Europe regions. Finally, anti-crises measures implemented by CEE countries were described.

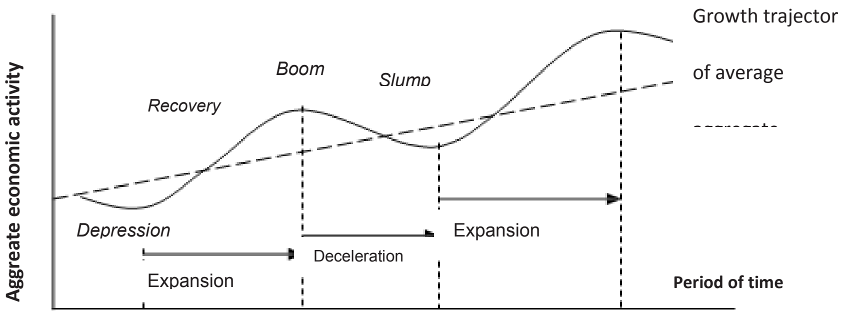
There were used the theoretical study, the observation method and the statistical data analysis to present the global financial crisis influence on the CEE economy.

Financial crisis and its types

Economic development is cyclical and it is a natural phenomenon. It means that after an economic boom, the recession appears in the economy and the next phase is the re-start of the economic growth. All business cycles have the same distinct phases: depression, recovery, boom and slump as presented on the figure 1. The phases of recovery and slump are also called expansion and deceleration (Dornbusch, Fischer and Start 1998).

The financial crisis is an example of the economic situation, which is associated with a banking panic where important production and financial sector losses exist. This economic situation can cause chaos on international markets, create a stock market fall, financial bubbles, currency crises. The financial crisis leads to the sharp decrease in an economic activity, the need of foreign loans and can be the beginning of a potential recession. Most financial (economic) crises happen when some "financial institutions or funds invested in financial assets lose most of their value". Afterwards, international investors hold their own funds to withdraw them from the country, and that can lead to losing the confidence in the country's economy or the national currency of a particular country (Račickas, Vasiliauskaitė 2010, p. 1006).

Figure 1. Four phases of business cycles



Source: Račickas, Vasiliauskaitė (2010, p. 1006).

When considering the potential causes of financial crises, the types of financial crises presented in the table 1 are mentioned.

Table 1. Types of financial crisis

Financial crisis	Type of a crisis model	Definition + Examples
Macroeconomic policy-induced crisis (*balance of payments crisis, currency depreciation, loss of foreign exchange reserves and collapse of fixed exchange rate)*	Krugman canonical model	The crisis is due to domestic credit expansion, which is incompatible with a fixed exchange rate. Market participants and analysts expect this crisis and prepare for it in advance. The real economy does not deteriorate after the macroeconomic policy-induced crisis. Intervention may be identified as a macroeconomic adjustment, largely associated with the budget reductions.
Financial panic caused crisis	Canonical Diamond-Dybvig banking model of panic	The crisis occurs when depositors start taking massive deposits from commercial banks and other financial institutions. Such huge withdrawals lead to panic in the whole society. Panic can lead to huge economic losses – the creditor's liquidation, termination of investment projects and so on. Market participants and analysts cannot forecast this crisis, and only could little expect. The real state of the economy after the crisis is seriously deteriorated.

continued table 1

Collapse of the financial bubble	Blanchard model	The financial bubble occurs when speculators buy property at a price that exceeds its fair value, and anticipate further price's increase and profit. If the majority of market participants in acquiring the assets, in particular, hopes to sell it later at a higher price, and buy it for income, which will be earned yet, it can no longer be argued that the bubble is in the air. The possibility of this crisis is notorious to market participants and analysts, and the real economy is not getting worse after the crisis, but on the contrary, the bubble explosion can improve resource allocation in the economy. However, if no formal intervention is done, inevitable collapse of bubble risks to cause a deeper crisis in the future. Well-known examples: the Dutch tulip mania, the Wall Street clashes in 1929.
Moral crisis of speculation	Romero and Shoven model	It happens, because the state provides guarantees to banks to lend money for financing precarious liabilities. Poorly supervised banks may grant loans of poorer quality than usual. If the situation deteriorates, loans' quality deteriorates, and the state's guarantees are no longer enough.
Forced termination	Sachs model	When an illiquid or insolvent subject is demanded to repay all liabilities to creditors, the forced liquidation crisis occurs. The economic subject is going bankrupt and is liquidated, although it would have been much more valuable if it had acted than been parceled. During this crisis the Government's intervention may help reduce the impact of the crisis
Wider economic crisis		This type of economic crisis is often identified with the emergence of a phenomenon of recession in the economy. The negative GDP growth which lasted two or more quarters is called the recession. In particular, long-lasting recession could be called a depression, but slowly for a long time and not necessarily a negative growth rate of economy is called economic stagnation. The example of the crisis was "The Great Depression" in the period 1929-1933.
Debt crisis		A situation where the State fails to service its debt obligations: to repay government debt or to pay debt interest.

continued table 1

International financial crisis.		It occurs when the financial crisis spreads in more than one country's economy, in other words, goes beyond national borders.
Banking crisis		Since the majority of bank loans are available in the form of deposits, and if all depositors suddenly demanded return of their funds, the bank may lead to bankruptcy. To avoid this type of financial crisis, countries often have deposit insurance law. In such case the banks become conservative and there is so-called "credit contraction" in a country. This type of crisis, in other words is like a real drain on bank deposits when the bank suspends its liabilities' commitment and hereby causes the intervention of government to stabilize financial sector.
Balance of payments crisis		It appears when in a fixed exchange rate economy country's official reserves are no longer sufficient to maintain a constant country's national currency rate. The only way to restore the balance of the money market is to meet the national currency exchange rate devaluation.
Currency crisis.		It is often treated as sudden currency depreciation or substantial exchange rate devaluation. This type of crisis often occurs in the countries that support a fixed national currency exchange rate. When the government liabilities are denominated in foreign currency, foreign lenders, concerned about the state of default and currency devaluation, try to recover the investment and thus the decline of official retraction of capital stock is ongoing. This process naturally results in the national currency devaluation. However, if a government liabilities are denominated in national currency, the creditors, beware of inflation and currency devaluation, according to the issue of money for financing budget deficits, will continue to exchange their assets from national currency into foreign currency and thus accelerate the national currency depreciation and devaluation furthermore. The example of the crisis was in Russia in 1998.
Systemic financial crisis		This crisis may disturb the functioning of efficient financial markets, which in turn has a huge impact on the entire national economy. Systemic financial crisis usually includes currency crisis and banking crisis simultaneously.

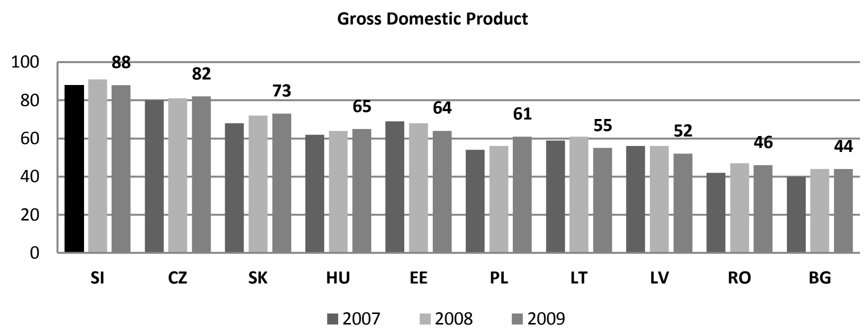
Source: Račickas, Vasiliauskaitė (2010, p. 1007–1008).

Financial crisis in Central and Eastern Europe

Central and Eastern Europe belong to the regions most severely affected by the world economic crisis (NBP 2010, p. 6). The trends that were observed in individual countries of the region were similar, although their scale was very diversified. The impact scale of global recession on the region's economy was determined primarily by factors such as the degree of openness of economies, loans' participation in the financing of private consumption and business operations.

Figure 2 presents the countries' volume indices of GDP per inhabitant in relation to the UE-27 in the period 2007–2009. The Czech Republic is clustered around 20 percent below the EU27 average, well ahead of Slovakia, which is among the countries which have seen its relative position improve. Estonia, Lithuania and Latvia all show a substantial decline of their relative position from 2007 to 2009. In 2009, Estonia's level of GDP per inhabitant was similar to that of Hungary, while Lithuania and Latvia were clearly below the level of Poland, and followed by Romania and Bulgaria (Svennebye 2010, p. 2–3).

Figure 2. Countries' volume indices of GDP per inhabitant, 2007–2009, (UE-27=100).

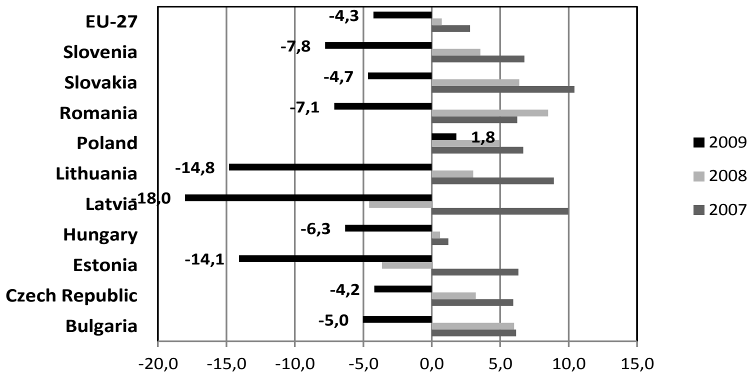


Source: own calculations based on Svennebye (2010, p. 2).

By the end of 2009 Poland was the only country that hasn't experienced a decline in GDP and reached the growth of 1.7 % (figure 3). A large group of countries experienced a decline in GDP of less than 10%. However, the three Baltic States showed the decrease at the level of 20% GDP. This decrease was very deep. In earlier years, after a year 2000 they were characterized by the rapid economic growth (Gorzelak 2010, p. 30–31).

The crisis appeared in the Central and Eastern Europe countries in the European Union through two channels. A massive contraction of lending was set off in financial institutions exposed by "virulent" debts. What is more, there was the crash of property prices in some countries. Those two factors reduced the willingness of financial markets to finance the state. The recession decreased the

Figure 3. Annual average growth rates, 2007–2009



Source: own calculations based on UNCTAD' s statistical database, http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=109, (10.03.2011).

demand for exports to Western Europe, which had a negative influence on production and employment in small economies such as the Czech Republic, Slovakia and Estonia or Hungary, whose exports accounted for 70 and 80 percent of GDP in 2008. To a lesser extent, in Poland and Romania this situation repeated too (Hardy 2010).

Table 2. Gross fixed capital formation (% to the previous year)

Country	2008	2009	III 2010
Poland	8.2	-0.3	0.2
Czech Republic	-1.5	-9.2	1.7
Slovakia	1.8	-10.5	5.8
Slovenia	7.7	-21.6	-8.9
Hungary	0.4	-6.5	-3.3
Estonia	-12.1	-34.4	-9.8
Lithuania	-6.5	-39.1	-15.9
Latvia	-13.6	-37.3	-11.9
Bulgaria	20.4	-26.9	-5.3
Romania	16.2	-25.3	-11.0
UE-15	-1.1	-11.5	1.0

Source: own calculations based on NBP (2011, p. 70), NBP (2010, p. 65), NBP (2009, p. 49).

Investments decreased in the region of Central and Eastern Europe in 2009 as presented in table 2. The decline was observed in all countries - an average of nearly 12%. The decrease was relatively small in the case of Polish and Hungarian economies (0.3% and 6.5% respectively). In other countries decreases in investments in the region were already double-digit, in the Baltic States exceeded

35%. In the third quarter of 2010 the situation improved a bit. In Poland the increase of 0.2% was observed. In this period investments rose mostly in Slovakia. From the second quarter of 2010 capital expenditure increased also in the Czech Republic, Lithuania and Poland, and also in the third quarter in Latvia. In other countries of the region investment continued a downward trend (NBP 2011, p. 7). The severity of the recession in the global economy in early 2009 contributed to the downturn in foreign trade. On the one hand, weakening external demand contributed to the weakness in exports, which had been heavily important for pro-growth economies of the region, on the other hand the collapse of domestic demand in the CEE countries led to a decline in import. As table 3 shows, the highest decrease in export of commodities and services was in Slovakia and Slovenia, and reached 16.5% and 15.6%. In Poland the decline amounted to 9.1%. The situation improved in the third quarter of 2010, in Estonia the export increased at the highest level in the region – 24% (NBP 2010, p. 6).

Table 3. Export of commodities and services (% to the previous year)

Country	2008	2009	III 2010
Poland	7.1	-9.1	9.5
Czech Republic	6.0	-10.8	14.1
Slovakia	3.2	-16.5	15.0
Slovenia	2.9	-15.6	10.5
Hungary	5.6	-9.1	13.8
Estonia	-0.7	-11.2	24.0
Lithuania	12.2	-14.3	16.9
Latvia	2.0	-15.5	15.7
Bulgaria	2.9	-9.8	18.5
Romania	8.7	-5.5	16.5
UE-15	1.0	-12.9	10.8

Source: own calculations based on NBP (2011, p. 70), NBP (2010, p. 65), NBP (2009, p. 49).

The deepest decline in import occurred in countries which experienced the strongest economic collapse, i.e. in the Baltic states, where the decline exceeded 30%. In 2009, the export from the CEE countries decreased by 10% and import by 16%. As a result of large scale decline in contrast to exports, the contribution of the balance of foreign trade to the growth of GDP clearly increased in the countries of the region and in 2009 it was a factor of mitigating the decline in external demand (NBP 2010, p. 6).

Table 4. Industry production (% to the previous year)

Country	2008	2009	I.2010
Poland	2.3	-3.5	11.0
Czech Republic	-2.2	-12.8	7.6
Slovakia	3.7	-13.1	21.0
Slovenia	1.6	-17.1	-8.7
Hungary	-0.5	-17.3	5.2
Estonia	-4.5	-25.6	2.5
Lithuania	5.7	-14.4	-7.9
Latvia	-3.8	-15.7	6.1
Bulgaria	0.7	-18.2	-0.6
Romania	2.7	-5.7	6.2

Source: own calculations based on NBP (2011, p. 71), NBP (2010, p. 66), NBP (2009, p. 50).

The value of industrial production in the CEE countries decreased in 2009 as shown in table 4. The highest decline was observed in Estonia and amounted to -25.6 % comparing to the previous year. The lowest decrease in industry production was in Poland, at the level of 3.5 %. After a period of the strong decline in the year 2009, at the beginning of 2010 it began to rebuild. Increased production was observed in the first months of 2010. The drop in production on an annual basis could be observed only in Slovenia, Lithuania and Bulgaria. On the contrary, in Slovakia and Poland there were the double-digit increases in industrial production. Increased production in the region was mainly due to increasing external demand, as the recovery in industry was accompanied by an increase in exports. The rise in industrial production was accompanied by increased optimism among producers (NBP 2011, p. 7).

Although some credit went to firms, the bulk of the loans went to households, and in the majority of cases this went on financing mortgages, as can be seen from Table 5.

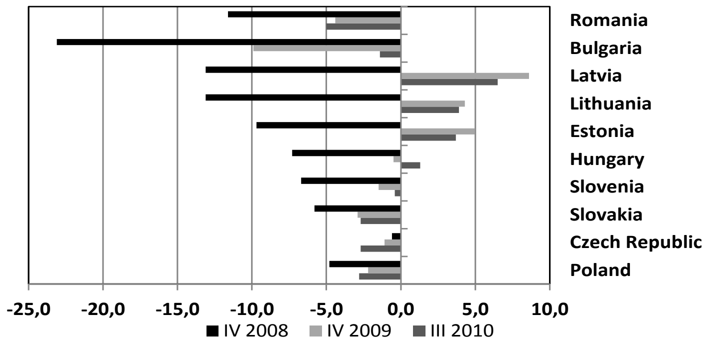
The process of the rapid decrease in the external imbalances in the CEE countries began in 2008 as can be seen from figure 4. The highest decrease in the balance of the current account was observed in Bulgaria at the level of 23% comparing to the previous year and in the Baltic States (Lithuania: -13.1%, Latvia: -13.1%, Estonia: - 9.7%). In Poland, the decline in the balance of the current account achieved the level of 4.8%. The situation of dropping trend continued in 2009. In the last quarter of 2009, the current account deficit slowed down. In the whole CEE region the current account deficit (calculated as the moving average of 4 consecutive quarters) fell from 1.7% in the fourth quarter of 2009 to 1.3% of GDP in the second quarter of 2010.

Table 5. Growth and composition of credit to the private sector from 2003 to 2008

Country	Average growth of credit to household (percentage)	Average growth of credit to corporations (percentage)	Share of housing loans in total household spending (percentage)
Bulgaria	41	57	43
Czech Republic	26	12	65
Estonia	39	32	78
Hungary	21	7	64
Latvia	44	28	64
Lithuania	59	31	76
Poland	28	13	30
Slovakia	28	10	69

Source: M. Pradeep, M. Selowsky and J. Zalduendo (2010, p. 50).

Figure 4. Balance of the current account (% GDP)



Source: own calculations based on NBP (2011, p. 74), NBP (2010, p. 69), NBP (2009, p. 53).

Different situation was observed in the Baltic States, where the surplus of the current account appeared. The descending deficit of the goods account explained the increase in the balance of the current account. Strong external demand stimulated the export growth, while the import increased significantly slower. Changes in other categories of the current account had no significant effect on the formation of the balance in the region.

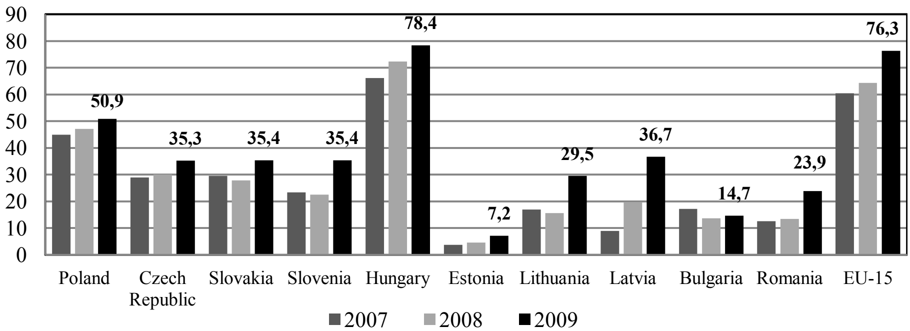
In the period of 2005–2009 the improvement of the public finance sector balance was observed only in 2007 in the Central and Eastern Europe as shown in table 6. The economic crisis led to the substantial widening of fiscal imbalances in the CEE. Public finance deficit in 2009 exceeded the 3% of GDP in all CEE countries except Estonia. Trough introducing the consolidation package of approximately 9.0% of GDP in Estonia, the public finance sector deficit decreased

Table 6. The balance of public finance sector according to ESA95 (% of GDP)

Country	2005	2006	2007	2008	2009
Poland	-4.1	-3.6	-1.9	-3.7	-7.2
Czech Republic	-3.6	-2.6	-0.7	-2.7	-5.8
Slovakia	-2.8	-3.2	-1.8	-2.1	-7.9
Slovenia	-1.4	-1.3	0.0	-1.8	-5.8
Hungary	-7.9	-9.3	-5.0	-3.7	-4.4
Estonia	1.6	2.4	2.5	-2.8	-1.7
Lithuania	-0.5	-0.4	-1.0	-3.3	-9.2
Latvia	-0.4	-0.5	-0.3	-4.2	-10.2
Bulgaria	1.0	1.9	1.1	1.7	-4.7
Romania	-1.2	-2.2	-2.6	-5.7	-8.6
Countries EU-15	-2.4	-1.4	-0.8	-2.3	-6.8

Source: own calculations based on NBP (2011, p. 79), NBP (2010, p. 74), NBP (2009, p. 58).

Figure 5. Public debt according to ESA95 (% of GDP)



Source: own calculations based on NBP (2011, p. 79), NBP (2010, p. 74), NBP (2009, p. 58).

in relation to GDP from 2.8% in 2008 to 1.7% in 2009, despite a significant decrease in gross domestic product (by 14.6%). The highest level of the public finance sector deficit in relation to GDP in 2009 was recorded in Latvia (10.2%), Lithuania (9.2%) and Romania (8.9%), primarily all due to rapid deterioration of the economic situation in these countries, even after making the adjustment measures (NBP 2010, p. 8).

The public debt in most countries of the CEE region showed an increasing trend because of the crisis in the years 2007–2009 as can be observed in figure 5. The highest public debt was seen in Hungary (78.4 % of GDP) in 2009. The lowest public debt was in Estonia – only 7.2% of GDP. In Poland, the public debt in 2009 was at the level of 50.9 GDP. However, the public debt was still significantly lower than in Western Europe. Nevertheless, it is worth noting that developing countries are less resistant to the debt than countries developed. In addition, developing countries are generally more vulnerable to sudden changes in investor sentiment and the outflow of capital in a growing risk aversion, which may cause problems in obtaining market financing. In this context, reliable consolidation activities in the countries of Central and Eastern Europe are necessary to minimize their risks in the public finance sector (NBP 2010, p. 9).

Crisis causes

Not all developing countries were equally assessed by investors in the time of crisis. Central and Eastern Europe countries were most affected by the crisis. Investors paid attention to persisting external imbalances in many countries of the region, much higher than in Asia or Latin America, which led to a rapid accumulation of the foreign debt and strong foreign capital dependence (especially in relation to the Baltic States, Bulgaria and Romania). In CEE countries relatively high public sector deficits and potentially lower stability of the banking system (rapid credit growth financed by funds obtained abroad) were observed. As a result, the capital outflow and the depreciation of national currencies in the region were some of the largest ones among emerging economies.

Commercial and financial links with the EU-15 countries being in the serious crisis (the expansion of European banks) were the other factors reducing the resistance to the global crisis. The expansion of European financial institutions into the markets of new EU member states in the post-accession period enabled an easier access to credits. At its peak in 2006–2007, the high credit growth was one of the most important driving forces of the high economic growth in the period 2004–2007. However, the rise of lending activity was not accompanied by a rapid growth of domestic deposits, and it forced to borrow money from parent banks or from the international interbank market. These factors, with an increase in risk aversion and liquidity problems of international financial institutions, led to the reduction in capital inflows to the countries of Central and Eastern Europe.

The global recession affected the economic situation of CEE countries by means of the foreign trade. The lower foreign demand appeared as a consequence of the recession which began in major trading partners of CEE countries. It resulted in the reduction in export and the deteriorating situation in CEE countries, which had had the big share of exports in GDP.

Currency depreciation in the region created an additional threat to entities increasingly indebted in foreign currencies. The risk of weakening a national currency emerged in countries with a fixed exchange rate. The revaluation of the national currency, especially in Latvia, was observed as a consequence of a very strong economic crisis and it had a negative impact on debtors' situation in this country What is more, the cause of the crisis was also the faster increase of wages than productivity growth in the Baltic States where the economic growth was high after 2000 (*Polska wobec*... 2009, p. 14–16).

In the table 7 the typology of CEE countries is presented according to two categories of factors (external and internal) responsible for the crisis in CEE economies.

Table 7. CEE countries according to main factors of recession

<table>
<tr><th rowspan="2">Crisis factors</th><th colspan="7">Internal causes</th></tr>
<tr><th colspan="2">industry specialization in sevaral groups of products</th><th>credit bubble</th><th>Exce-ssive salary growth</th><th>currency depreciati-on</th><th>public finance deficit</th><th>weak institutions</th></tr>
<tr><td rowspan="4">External causes</td><td>export decrease</td><td>Czech Republic Slovakia Slovenia</td><td>Lithuania</td><td></td><td>Slovakia Bulgaria</td><td>Hungary</td><td>Bulgaria</td></tr>
<tr><td>foreign banks</td><td></td><td>Estonia, Latvia</td><td>Estonia Latvia</td><td>Estonia Lithuania Latvia</td><td></td><td></td></tr>
<tr><td>FDI decrease</td><td></td><td>Romania Poland</td><td></td><td></td><td></td><td></td></tr>
<tr><td>capital outflow</td><td></td><td>Romania</td><td></td><td></td><td>Hungary</td><td>Poland</td></tr>
</table>

Source: Gorzelak (2010, p. 35).

Development diffrentation in the CEE regions

Countries of Central and Eastern Europe are diversified and they are divided into a different number of regions. From the beginning of the year 2008, the number of regions at the NUTS 2 level was 54, and in the whole EU it was 271 (Kosiedowski 2008, p. 133). Before 2007, the number of regions was 53. Regions in Central and Eastern Europe have the differentiated economic potential and the level of unemployment.

Table 8. GDP PPS per capita (EU =100) and its changes in years 1995–2007

Region	1995	2000	2004	2007	changes in %			
					1995 – 2000	2000 –2004	2004 –2007	1995– 2007
Bulgaria	32.2	27.8	32.2	37.7	–4.4	4.4	5.5	5.5
1. Severen tsentralen	26.7	23.3	26.4	26.7	–3.4	3.1	0.3	0.0
2. Severoiztochen	30.1	26.4	29.3	32.4	–3.7	2.9	3.1	2.3
3. Severozapaden	26.5	25.4	25.6	25.6	–1.1	0.2	0.0	–0.9
4. Yugoiztochen	31.4	29.1	29.9	30.7	–2.3	0.8	0.8	–0.7
5. Yugozapaden	43.6	36.3	49.1	62.0	–7.3	12.8	12.9	18.4
6. Yuzhen tsentralen	27	21	25.6	27.2	–6	4.6	1.6	0.2
Czech Republic	71.8	68	77	80.1	–3.8	9	3.1	8.3
7. Jihovýchod	66.5	61	67.4	71.7	–5.5	6.4	4.3	5.2
Region	**1995**	**2000**	**2004**	**2007**	**changes in %**			
					1995 – 2000	**2000 –2004**	**2004 –2007**	**1995– 2007**
8. Jihozápad	68.3	66.1	69.6	71.1	–2.2	6.5	1.5	2.8
9. Moravskoslezko	62.5	53	61.1	67.5	–9.5	8.1	6.4	5.0
10. Prague	122.5	135.6	157.1	171.8	13.1	21.5	14.7	49.3
11. Severovýchod	65.6	61.2	63.7	65.9	–4.4	2.5	2.2	0.3
12. Severozápad	67.8	55.8	60.7	61.9	–12	4.9	1.2	–5.9
13. Středni Čechy	62	64	69.9	75.2	2	5.9	5.3	13.2
14. Středni Morava	62.5	55.6	59.8	62.3	–6.9	4.2	2.5	–0.2
15.Estonia	35.1	44.1	57.5	68.8	9	13.4	11.3	33.7
Hungary	51.1	56.6	64	62.6	5.5	7.4	–1.4	11.5
16. Dél–Alföld	42.5	40.4	44.2	41.8	–2.1	3.8	–2.4	–0.7
17. Dél–Dunántúl	41.7	42.3	45.6	42.7	0.6	3.3	–2.9	1.0
18. Észak–Alföld	36.5	36	41.9	39.4	–0.5	5.9	–2.5	2.9
19. Észak–Magyarország	37.2	36.5	42.5	40.1	–0.7	6.8	–2.4	2.9
20. Közép–Dunántúl	46.3	55.3	61.1	58.2	9	5.8	–2.9	11.9
21. Közép–Magyarország	73.8	87.6	101.6	102.9	13.8	14	1.3	29.1
22. Nyugat–Dunántúl	52.7	64.7	66.8	61.5	12	2.1	–5.3	8.8
23. Latvia	31.2	37.1	46.4	55.7	5.9	9.3	9.3	24.5
24. Lithuania	35.7	39.8	52	59.3	4.1	12.2	7.3	23.6
Poland	42.5	49	51.9	54.4	6.5	2.9	2.5	11.9
25. Dolnośląskie	44.6	50.9	51.7	59.2	6.3	0.8	7.5	14.6
26. Kujawsko–pomorskie	42.4	44.8	45.4	47.3	2.4	0.6	1.9	4.9
27. Lubelskie	33.2	34.3	35.2	36.9	1.1	0.9	1.7	3.7
28. Lubuskie	41.7	44.1	45.4	48.2	2.4	1.3	2.8	6.5
29. Łódzkie	38.7	44.1	46.7	50.0	5.4	2.6	3.3	11.3
30. Małopolskie	37.2	42.6	43.4	46.7	5.4	0.8	3.3	9.5
31. Mazowieckie	54.3	74	76.8	87.1	19.7	2.8	10.3	32.8
32. Opolskie	41.5	41.4	43.6	45.2	–0.1	2.2	1.6	3.7
33. Podkarpackie	32.4	34.2	35.4	36.7	1.8	1.2	1.3	4.3
34. Podlaskie	32.8	36.9	37.9	40.4	4.1	1	2.5	7.6
35. Pomorskie	43.2	48.7	49.6	53.6	5.5	0.9	4.0	10.4
36. Śląskie	50.4	52.8	57	57.8	2.4	4.2	0.8	7.4
37. Świętokrzyskie	33.4	38	39.3	41.9	4.6	1.3	2.6	8.5

continued table 8

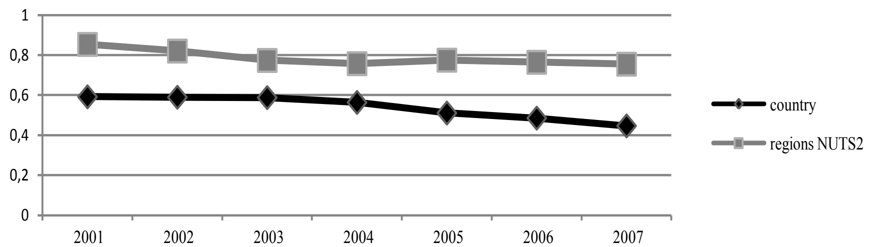
38. Warmińsko–mazurskie	34.1	38.4	39.4	40.5	4.3	1	1.1	6.4
39. Wielkopolskie	41.8	52.2	54.5	56.9	10.4	2.3	2.4	15.1
40.Zachodniopomorskie	43.8	49.8	47.2	48.9	6	–2.6	1.7	5.1
Romania	27.61	26.1	33.7	41.6	–1.52	7.6	7.9	14.0
41. Bucuresti–Ilfov	45.21	54	64.5	92.2	8.82	10.5	27.7	47.0
42. Centru	29.31	27.9	35.5	42.2	–1.42	7.6	6.7	12.9
43. Nord–Est	22.01	18.2	23.6	26.6	–3.82	5.4	3.0	4.6
44. Nord–Vest	26.51	24.3	33	40.2	–2.22	8.7	7.2	13.7
45. Sud–Est	27.51	23.2	30.7	33.8	–4.32	7.5	3.1	6.3
Region	**1995**	**2000**	**2004**	**2007**	**changes in %**			
					1995 – 2000	**2000 –2004**	**2004 –2007**	**1995–2007**
46. Sud–Muntenia	23.51	21.5	28.4	34.2	–2.02	6.9	5.8	10.7
47. Sud–Vest Oltenia	24.91	22.1	28.8	32.7	–2.82	6.7	3.9	7.8
48. Vest	28.11	26.9	39	48.2	–1.22	12.1	9.2	20.1
Slovakia	46.7	49.7	57.9	67.7	3	8.2	9.8	21.0
49. Bratislavský kraj	100	107.9	129.3	160.3	7.9	21.4	31.0	60.3
50. Stredné Slovensko	35.3	41	46.7	53.3	5.7	5.7	6.6	18.0
51. Východné Slovensko	38.3	37.4	42.3	46.0	–0.9	4.9	3.7	7.7
52. Západné Slovensko	44.5	47.1	52.7	66.1	2.6	5.6	13.4	21.6
53. Slovenia	71.2	76.3	82.9	88.6	5.1	7	5.7	17.4

Source: own calculation based on Eurostat database, http://epp.eurostat.ec.europa.eu/portal / page/portal/statistics/search_database (15.01.2011) and Kosiedowski (2008, p. 136).

The level of regional economic development has changed under the influence of many factors, including regional development policy. To identify these changes, the proportions of regional GDP PPS per capita to the average EU-27 are shown. Analyzing data from table 8 it can be noted that from 1995 to 2007 there was a growth of GDP PPS in most regions. The distance of CEE regions to the EU-27 average was lower through external convergence (only in six regions, there was no increase of GDP PPS, 3 of the Bulgarian regions, 2 of Czech Republic regions 1 Hungarian region). The process of building regional cohesion developed, but its growth rate was different in different periods. The years 1995–2000 were the best for the Polish regions, and for Estonian, Latvian and some Hungarian regions. In Bulgaria, Romania and the Czech Republic the situation of regions was worse (except for the metropolitan regions, which in all periods developed very well). In the period 2000–2004, economic growth accelerated in regions that previously were characterized by poor growth dynamics (Bulgaria, the Czech Republic, Romania). Further GDP PPS growth was observed in the Baltic states regions in the period of 2000–2004. Polish regions recorded a decline in GDP PPS, with the exception of Silesia, where an increase of 4.2% was indicated in the period 2000–2004. In the period of 2004–2007, the Czech Republic and Bulgarian regions recorded the weak growth of GDP PPS. In Hungarian regions GDP PPS significantly declined. Similarly, in the Baltic States the rate of GDP PPS in years 2004–2007 was lower than in the period of 2000–2004.

The above mentioned analysis of table 8 indicates that the external convergence process exist in all countries of Central and Eastern Europe. Since this process is very important in the regional development of CEE countries, the statistical method, the coefficient of variation (calculated as the ratio of the standard deviation to the mean) was used to confirm the above-mentioned process. In the research regions at the NUTS2 level of Bulgaria, Poland, Romania, the Czech Republic, Slovakia and Hungary were analysed. Countries such as Slovenia, Estonia, Lithuania and Latvia were excluded because they do not divide into regions at NUTS 2 level in the period 2001-2007.The data from Eurostat in the period 2001–2007 was analysed.

Figure 6. Disparities in GDP per capita in PPS in Central and Eastern Europe



Source: own calculations based on Eurostat database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (15.01.2011).

Figure 6 indicates that differentiation of GDP in the set of countries over a long period of 6 years showed a downward trend. The coefficient of variation for the country decreased from 0.59 to 0.44, similarly for the regions from 0.85 to 0.76. The graphs, both for countries and regions, have a similar trend but the second line is located substantially above the first one. This statistical method proves that the external convergence understood as reducing the development gap of Poland and other Central and Eastern Europe in relation to the EU appeared in the period 2001–2007.

The analysis of regional development in Central and Eastern Europe allows to formulate the finding that a slow approach of less developed CEE regions to more developed regions of the EU-15 is observed. However, the trend of reducing regional disparities is accompanied by the reverse trend. In all CEE countries: Bulgaria, Poland, the Czech Republic, Romania, Slovakia, Hungary (only countries, which can be divided into NUTS 2 regions were presented in table 9) internal disparities between regions increased. Comparing these differences indicated that in the regional system of European Union in CEE regions two processes: external convergence and internal divergence are observed.

Table 9. Internal disparities in CEE countries in terms of the economic growth in the regions at NUTS 2 level in 1995 and 2007

Country	1995			2007		
	region			region		
	the most developed	the least developed	ratio	the most developed	the least developed	ratio
Bulgaria	Severozapaden	Yugozapaden	1:1,6	Severozapaden	Yugozapaden	1:2,4
Poland	Podlaskie	Mazowieckie	1:1,7	Podkarpackie	Mazowieckie	1:2,3
Czech Republic	Střední Čechy	Prague	1:2,4	Severozápad	Prague	1:2,7
Romania	Nord-Est	Bucureşti-Ilfov	1:2,1	Nord-Est	Bucureşti-Ilfov	1:3,4
Slovakia	Východné Slovensko	Bratislavský kraj	1:2,8	Východné Slovensko	Bratislavský kraj	1:3,5
Hungary	Észak Alföld	Közép Magyarország	1:2,0	Észak Alföld	Közép Magyarország	1:2,6

Source: own calculations based on the table 8.

Table 10 presents the labour markets in CEE regions in 2008–2009.

Table 10. Unemployment rates in the regions of the European Union

	Total		Females		15–24 years old	
Country/region	**2008**	**2009**	**2008**	**2009**	**2008**	**2009**
EU27	7.0	8.9	7.5	8.9	15.6	19.9
BULGARIA	5.6	6.8	5.8	6.6	12.7	16.2
Severozapaden	7.1	8.0	6.5	7.7	18.3	15.1
Severen tsentralen	8.5	8.4	8.4	8.2	17.9	21.7
Severoiztochen	8.6	10.4	10.2	10.2	19.0	23.5
Yugoiztochen	5.8	6.6	6.0	7.1	14.8	18.0
Yugozapaden	2.9	4.1	3.0	3.9	6.7	10.0
Yuzhen tsentralen	5.1	7.3	5.2	6.8	9.7	17.3
CZECH REPUBLIC	4.4	6.7	5.6	7.7	9.9	16.6
Prague	1.9	3.1	2.3	3.2	4.8	9.4
Střední Čechy	2.6	4.4	3.0	5.2	6.1	15.3
Jihozápad	3.1	5.2	4.3	6.1	6.6	13.5
Severozápad	7.8	10.3	8.8	12.5	18.2	23.5
Severovýchod	4.0	7.3	5.4	8.8	8.3	14.9

continued table 10

	Total		Females		15–24 years old	
Jihovýchod	4.0	6.5	5.4	7.5	7.8	15.8
Střední Morava	4.9	7.5	6.1	8.8	11.2	18.1
Moravskoslezsko	7.4	9.7	10.3	10.9	15.0	21.3
ESTONIA	5.5	13.8	5.3	10.6	12.0	27.5
LATVIA	7.5	17.1	6.9	13.9	13.1	33.6
LITHUANIA	5.8	13.7	5.6	10.4	13.4	29.2
HUNGARY	7.8	10.0	8.1	9.7	19.9	26.5
Közép Magyarország	4.6	6.6	5.3	6.1	11.6	19.0
Közép Dunántúl	5.8	9.3	6.0	9.7	15.6	22.6
Nyugat Dunántúl	4.9	8.6	6.2	8.9	10.4	23.2
Dél Dunántúl	10.3	11.0	9.4	10.9	25.9	30.9
Észak Magyaroszág	13.4	15.2	12.5	14.0	29.7	35.0
Észak Alföld	12.0	14.2	12.3	14.0	28.3	32.7
Dél Alföld	8.8	10.6	9.0	10.8	22.0	27.9
	Total		Females		15–24 years old	
Country/region	2008	2009	2008	2008	2008	2009
POLAND	7.1	8.2	8.0	8.7	17.3	20.6
Łódzkie	6.7	7.6	7.5	8.1	16.8	19.1
Mazowieckie	6.0	6.0	6.4	6.2	14.9	14.9
Małopolskie	6.2	7.9	7.2	8.3	19.0	24.2
Śląskie	6.6	6.7	7.5	7.8	17.2	18.3
Lubelskie	8.8	9.7	8.8	9.2	24.5	26.9
Podkarpackie	8.2	10.1	9.0	11.0	21.6	33.1
Świętokrzyskie	8.8	10.8	8.8	10.0	20.2	23.9
Podlaskie	6.4	7.1	6.6	7.1	15.3	17.4
Wielkopolskie	6.1	7.5	8.0	9.5	12.7	17.8
Zachodniopomorskie	9.5	10.4	10.2	10.8	21.9	24.5
Lubuskie	6.5	9.6	7.3	9.3	15.7	23.5
Dolnośląskie	9.1	10.1	10.3	10.3	19.9	23.3
Opolskie	6.5	9.9	7.3	10.7	16.6	20.3
Kujawsko-Pomorskie	9.1	10.4	10.2	10.6	19.0	21.5
Warmińsko-Mazurskie	7.4	8.5	9.0	10.0	16.0	18.8
Pomorskie	5.5	6.4	6.7	6.8	11.3	16.2
ROMANIA	5.8	6.9	4.7	5.8	18.6	20.8
Nord-Vest	3.8	5.6	2.8	5.1	13.5	16.8
Centru	8.5	10.7	7.0	8.8	22.6	30.2
Nord-Est	4.5	6.0	3.5	5.0	14.0	16.2
Sud-Est	7.2	7.5	6.1	6.7	21.7	21.8
Sud-Muntenia	6.8	8.0	6.5	8.0	19.4	23.6
Bucureşti-Ilfov	3.4	4.0	2.5	3.6	17.4	16.9
Sud-Vest Oltenia	6.5	6.8	4.6	4.7	21.7	20.3
Vest	5.7	6.0	4.5	4.5	20.4	19.7
SLOVENIA	4.4	5.9	4.8	5.8	10.4	13.6

continued table 10

	Total		Females		5–24 years old	
Vzhodna Slovenija	5.2	6.8	6.2	7.4	12.2	15.5
Zahodna Slovenija	3.4	4.8	3.3	4.0	8.5	11.6
SLOVAKIA	9.5	12.0	10.9	12.8	19.0	27.3
Bratislavský kraj	3.4	4.6	3.4	3.8	6.5	9.7
Západné Slovensko	6.4	9.9	8.5	11.5	12.0	22.6
Stredné Slovensko	13.1	14.6	14.1	15.4	25.3	32.5
Východné Slovensko	13.2	15.9	15.3	17.0	26.9	34.4

Source: *Unemployment rate in EU27 in 2009* (2010, p. 2–4).

Between 2008 and 2009, unemployment rose in 90% of the 271 NUTS 2 regions in EU 27 (table 10). In Central and Eastern Europe regions, an unemployment rate increased in all regions, including the unemployment rate of females and people at the age of 15–24 years, as presented in table 10. An unemployment rate of 4.4% or less in 2009 was only in two regions in Czech Republic (Prague and Střední Čechy), one in Bulgaria (Yugozapaden), Romania (Bucureşti-Ilfov) respectively. In 2009 female unemployment rates varied from 3.6 to 17 %. At regional level, the female unemployment rate was lowest in 2009 in Bucureşti-Ilfov (3.6%). The rate was the highest in the Slovakian region of Východné Slovensko (17%). Regional differences in the unemployment rate for young people are also striking. In the CEE in 2009, the lowest rates for young people were recorded in the Czech Republic region of Prague (9.4%), and Bulgarian region of Yugozapaden (10%), and the highest in the Latvia (33.6%), Észak Magyaroszág (35%), Észak Alföld (32.7%) and Podkarpackie (32%) and Réunion (49.6%).

The deeper analysis conducted by Jiří Blažek (2009, p. 33–34) at the NUTS3 level showed that there was a moderate impact of the crisis upon the capital cities. The financial sector in these cities did not massively engage itself in buying risky financial instruments like the banks in western cities so the capital cities in the EU10 region were hit by the crisis only indirectly. Despite this general trend, the capital cities of the Baltic states, i.e. Tallinn, Riga and especially Vilnius were hit significantly.

There are also some other similarities in the regional patterns of the crisis´ impacts among CEE countries. Firstly, in case of the Czech Republic, Slovakia and Slovenia, the crisis induced differentiation among until recently well performing regions. Generally, there were two basic types of until recently well performing functions in these countries – metropolitan regions but also some of the regions with smaller urban centres. While metropolitan regions mostly remained affected only moderately, the crisis manifested itself strongly in the formerly successful regions with smaller urban centres.

Secondly, another common feature for CEE regions is a limited or relatively limited appearance of impacts of the crisis in the peripheral, agricultural regions due to their limited openness to global economy. This is especially the case of Poland, Romania and partly also Lithuania.

Thirdly, the crisis was observed firstly in more developed regions and only later in less developed and less open regions. This pattern arrived in Hungary, Estonia and also in the Czech Republic. For example in Hungary, where the crisis appeared in less developed and often peripheral regions rather than in more developed regions, the impacts were much more profound than in more developed western and central regions. It proves that more developed regions have better opportunities during the recovery than peripheral and rural regions with limited options for re-specialization.

Summing up, the crisis does not change significantly the main regional structures in the countries of Central and Eastern Europe.

Anti-crisis activities in the CEE countries

Gorzelak (2010, p. 37–39) presented three strategies to cope with the crisis. The first strategy based on using the public money in order to stimulate domestic demand and improve banks' situation, promoting packages needed to maintain workplaces. Instruments used in the first strategy were the realization of large infrastructure project (the drawbacks of the instrument can be the increase in the public sector deficit and in the occurrence of inflation in the longer term). Another instrument of the first strategy was to accelerate spending of external funds, for example European funds. The second strategy was to restore sustainable public finances through savings, employment and wages reduction in public administration, resigning from investment projects. The third strategy focused on raising long-term competitiveness of the economy by eg. increased spending on research and development and supporting private firms' investments in new technologies.

In order to reduce the effects of the crisis CEE countries undertook several different anti-crisis measures mentioned above. External support was applied. All countries use funds from the EU. Hungary and Poland were granted $ 20 billion line of the credit, Latvia was given EUR 7.5 billion of support from the Nordic countries, Estonia received 750 million from the European Investment Bank and the Romanian-EUR 1 billion loan.

CEE countries undertook actions to improve the situation in the labour market through additional trainings in order to prequalify employees (Bulgaria, Slovenia). In Slovenia, small and medium-sized businesses obtained better conditions for economic activity with the support of venture capital.

The Baltic states: Estonia, Hungary, Latvia and Romania have reduced pension and/ or salary. In Bulgaria, the Czech Republic, Poland, Slovakia, Romania, Estonia, Latvia and Lithuania spending was cut and budgets were reviewed. Lithuania increased taxes.

In the CEE countries governments tended to increase the competitiveness of the economy through additional support for companies maintaining employment (Poland), or other support for companies (the Czech Republic and Slovakia). Unfortunately, in many countries no major institutional reforms were launched. Bulgaria, Czech Republic, Hungary, Slovakia and Slovenia set up special crisis emergency bodies. In Poland, the government wanted to have more flexible labor market by reducing the laws of employees.

Slovenia undertook the most future-oriented actions. Subsidies to investments in new technologies and research and development were introduced. Universities are supported and the infrastructure of broadband Internet is developed. Increasing venture capital aims at supporting innovative projects. Slovenia introduced a model of a pro-development activities, while the other countries introduced the ad hoc model of responding to the crisis.

As described above, there is no single commonly used strategy of the response to the crisis in the countries of Central and Eastern Europe. Slovenia most consistently implements the stimulus package, the Baltic states which cut spending in many areas, present the opposite strategy. Other countries apply simultaneously both types of instruments.

Conclusions

National economies can be determined by steady growth. This constant economic progress is cyclical and often expresses itself in the production volumes or in the level of gross domestic product per capita. The economy is also characterized by economic cycles – recurring economic fluctuations (represented by changes in the growth and decline phases). The economic crisis is described by very large and long economic downturn.

The causes and reasons of the economic crisis in different countries are different. The variety of financial and economic environment, economic policy goals, have an impact on various measures needed to overcome the crisis.

The main economic circumstances of the crisis which originated in CEE countries were external causes: export decrease, links with foreign banks, strong capital dependence (the Baltic States, Bulgaria and Romania) and internal reasons: high public deficit and excessive salary growth, credit bubble, currency depreciation, weak institutional system.

At the regional level the crisis does not significantly change the main regional structures and differentiation in the countries of Central and Eastern Europe.

Slovenia seems to be the only country which undertakes the most future-oriented anti-crisis activities. Other countries in Central and Eastern Europe use rather ac-hoc measures, maybe they hope that the reality after the crisis will be similar to the one before the crisis.

All in all, to overcome the challenges of the crisis there are necessary structural reforms which will give a strong foundation for long-term competitiveness in the future.

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