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THE ROLE OF FDI IN THE ECONOMIC DEVELOPMENT OF TRANSITION COUNTRIES

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Abstract

FDI are considered a key instrument in the process of transforming the former centrally planned economies and stimulate economic growth in the transition period. Economic theory suggests that FDI are an important factor for the economic growth of the host-country, while according to empirical research in general, there is a positive correlation between FDI and the economic growth, but the causality direction is not clear: FDI inflow stimulates economic growth, but in the same time FDI inflows grow with the country's economic development. Therefore, the objective of research in the paper is the relationship between FDI and economic growth in SEE and CIS countries. The relationship between the FDI and the economic growth in transition countries is examined by linear regression correlation of the relevant variables, covering the period from 2004 to 2011. Through the Pierce coefficient and the coefficient of determination, the interaction between the relevant variables and the dependence intensity is examine, and in this context general conclusions are drawn about the effects of FDI in the SEE and CIS countries. At the same time, the beta-coefficient is used to examine the value of the change in each variable separately, in order to make a more detailed analysis of the results obtained. In order to determine the direction of causality between the FDI and the economic growth of the country, research is carried out the influence of the transition indicators on the FDI inflow in the SEE and CIS countries from 2004 to 2011.

Keywords: Foreign Direct Investment, Transition Countries, Economic Development

1. Introduction

FDI can be catalysts of development processes, but they cannot be the only drivers of economic growth. There is no literature which finds that FDI are the only prerequisite for the economic growth in transition countries. Between the FDI inflow and the success in the transition reforms there is, an inseparable relationship. FDI are an important factor for economic growth, but FDI inflow is determinate by economic development of the host-country.

FDI have positive impact on transfer of technology, increased employment and productivity, competition and export, with effect on economic development of the country. In transition countries, FDI are a key instrument for the structural reforms and development of market institutions. At the same time, FDI are major factor for economic growth in the transition period. In this context, the statistic analysis of linear correlation confirms that the influence of FDI on the economic growth in SEE and CIS countries in the period from 2004 to 2011 depends on the progress in reform in the transition period, thus actually resulting in differences in the FDI effects between countries.

2. FDI and the Economic Growth: Theoretical Aspects and Empirical Research

The relationship between FDI and the economic growth is the subject of many research studies, from a theoretical aspect to empirical research.

In contemporary literature the endogenous growth theories are generally acceptable conceptual framework explaining the relationship between FDI and the economic development. FDI as a channel for the transfer of technology and knowledge can influence the growth rate in the long run only through technological advances or through development of human capital. According to endogenous growth theories, FDI can generate economic development only if they represent a channel for the transfer of technology and knowledge. (Romer, 1986). FDI will generate economic growth only if the country has reached a certain level of human capital (Borensztein *et al.* 1998).

In transition countries the positive effects of FDI on the economic growth are not influenced by human capital only, because they have a relatively skilled labor force, but lag behind in terms of technology development (Campos and Kinoshita, 2002).

Recent studies of the correlation between FDI and the economic growth emphasize that FDI effects are determinate of the absorbent capacity of the local companies (Dunning, 1994). In this context the FDI impact on the economic growth depends on the specific characteristics of the host-country and thus actually resulting in differences in the FDI effects between countries.

Economic theory suggests that FDI are an important factor for the economic growth in the host-country, while according to empirical research in general, there is a positive correlation between FDI and the economic growth, but the causality direction is not clear: on the one hand, the FDI inflow stimulates economic growth, on the other hand the FDI inflows grow with the country's economic development. The FDI inflow stimulates growth because FDI positively affect those factors that play an important role in promoting economic growth: capital accumulation, technological development and labor force. Also, economic growth attracts FDI (growth driven by foreign direct investments), as improving the economic performance will result in an increase in both domestic and foreign investment (UNCTAD, 1999).

In economic literature the FDI impact on economic growth in transition countries is subject of research in only a few studies. Campos and Kinoshita (2002), examining the FDI impact as a channel of technology transfer in the 25 countries of CEE and the CIS, in the period from 1990 to 1998, suggest that FDI have a significant positive impact on the economic growth in the countries surveyed. The results show that external liberalization index (0.46), political stability (0.36) and FDI growth rate (0.32) have the highest coefficient of correlation with the economic development. Aleksynska *et al.* (2003) shows that FDI positively affect economic growth in countries in transition, with a 1 % FDI increase raising the growth rate by 0.51%. At the same time, the survey indicates that there is a high correlation between FDI and the human capital, with a correlation coefficient of 0.99, as is the case between FDI and the domestic investment, with a correlation coefficient of 0.96. Apergis *et al.* (2004), examining the relationship between FDI and the economic growth in 27 transition countries for the period 1991 to 1999, indicate that in the countries with high income and successful privatization, FDI are in significant correlation with the economic growth. Darrat *et al.* (2005), examining the effects of FDI on the economic growth in seventeen countries in transition and six MENA countries in the period from 1989 to 2002, indicate the existence of interdependence between FDI and the success in implementing structural reforms in the transition period. According to the research, in the countries of CEE, the present EU member states, there is a positive correlation between FDI and the economic growth, while the MENA countries and the countries still faced with a period of transition, the correlation is statistically insignificant.

3. FDI and Economic Development in the Transition Countries

3.1. Data and Methodology

The relationship between FDI inflow and the economic development in transition countries is examined through linear regression correlation. The impact of FDI inflow on the economic growth is examined through linear correlation between FDI inflows as a percentage of GDP and the GDP growth rate. FDI as a percent of GDP is an independent variable, while the GDP growth rate is a dependent variable.

The influence of progress of transition on FDI inflow in SEE and CIS countries is examined through linear correlation between FDI inflows as a percentage of GDP and EBRD transition indicators in the period from 2004 to 2011. The value of transition indicators is an independent variable, and FDI as a percent of GDP is a dependent variable. The linear correlation is analyzed with the aid of Pierce coefficient of linear correlation and the coefficient of determination. The analysis also covers the beta-coefficient, which indicates the value of the change between the relevant variables of the linear correlation.

The statistical analysis refers to the SEE and CIS countries, covering the period from 2004 to 2011. The statistical analysis is done on the basis of data from UNCTAD and EBRD (Appendix Table A1, A2 and A3). The descriptive data from the analyzed correlations are displayed in Table 1 and through scatter plots (Figure 1 and 4).

3.2. Results

The results from the linear correlation, between FDI inflows as a percentage of GDP and the GDP growth rate in the SEE and CIS countries indicate that there is a statistically insignificant positive correlation between the FDI inflows and the economic growth in the period from 2004 to 2011.

The Pierce coefficient value (r=0.360) indicates an existence of positive correlation between FDI inflow and the GDP growth rate in transition countries during the analyzed period.

The coefficient of determination value (p=0.140) indicates that the link between the FDI inflow and the GDP growth rate is not statistically significant.

The beta-coefficient value (β =0.36) indicates that the increase of FDI by one percent of GDP increases the GDP growth rate by 0.3 percent.

Table 1. Statistic analysis data, p<0.05

	Pirson coeff. (r)	Coeff. of determination (p)	Beta-coefficient (β)
GDP growth rate	0.360	0.140	0.36
Transition Indicators	0.337	0.313	0.45
Enterplenaureship	*0.131*	*0.606*	*0.41*
Market and Trade	*0.176*	*0.484*	*0.45*
Financial Institutions	*0.251*	*0.313*	*0.67*
Infrastructura	*0.278*	*0.265*	*0.72*

Source: own calculations

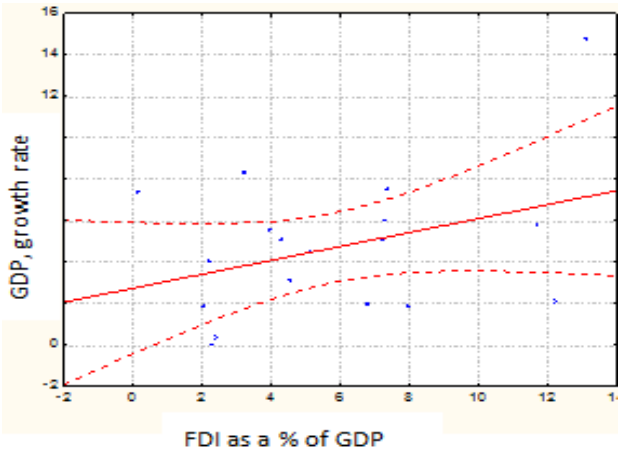


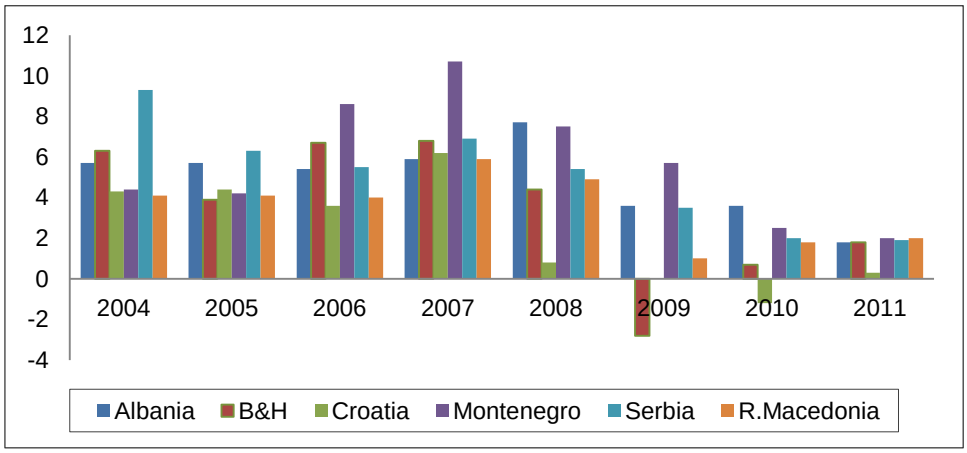
Figure 1. Correlation between the share of FDI inflows to GDP and the GDP growth rate in SEE and CIS countries, 2004- 2011
Source: own calculations

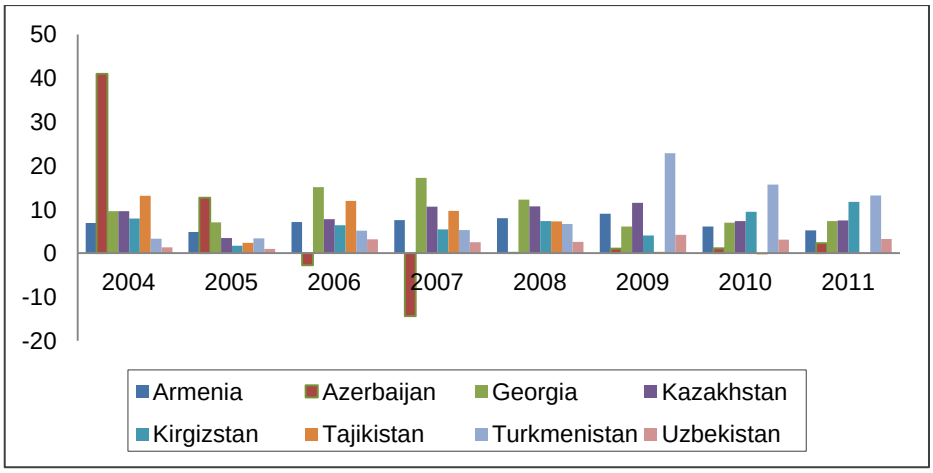
Undoubtedly, FDI have a positive impact on the economic growth in transition countries, but we also need to consider the feedback, the influence of the progress in transition into the FDI inflow[1].According to economic literature FDI can be a catalyst for economic development processes, but, does the host-country be able to transform FDI into economic growth depends primarily on the economy's absorbent capacities. In the context of transition period, FDI impact on the economic growth depends on the implementation of economic and structural reform and thus actually resulting in differences in the FDI effects between countries.

The experience of CEE countries, EU members shows that FDI are important factor in a transition period. On the other hand, the positive effects of FDI depend on the structural reforms implementation, market consolidation and country's economic development. Hungary's economic development was supported by the inflow of FDI. In Hungary the political and macroeconomic stability, rapid liberalization and successful privatization resulted with a FDI inflow during the 1990`s. FDI in the early stage of transition contributed to the rapid economic development of the Hungarian economy. On the other hand, in Poland the FDI inflow increased significantly after the stabilization and the economic development of the country. Poland at the beginning of the transition could not provide a large inflow of FDI, but with the economic reforms in the second half of the 1990`s became the country with the largest FDI inflow in CEE. The high growth of foreign capital in this period stems from the improvement of the business climate in the country, along with macroeconomic stability, as well as the intensification of the privatization process. The FDI inflow in Poland in the second half of the 1990`s resulted in economic growth. Opposite of these countries, Slovenia accepted a strategy of building its own transition model with very specific and sensible attitude towards FDI, but has a highest economic growth rate during the 1990`s.

In the context of FDI influence on economic growth in the SEE and CIS countries, the data from Figure 2 and 3 shows, in general, countries with a high rate of growth have the highest inflow of FDI. In the period from 2004 to 2011, Montenegro has the largest share of FDI in GDP of the SEE countries. At the same time, Montenegro has the highest GDP growth rate, until 2008. In recent years the GDP growth rate is highest in Albania. Azerbaijan has the highest growth rate, followed by Georgia, Kazakhstan, Tajikistan, as countries with the largest share of FDI in GDP of the CIS countries.

[1]The impact of the progress of reforms on the FDI inflow in transition countries is also indicated by EBRD (1998) and UNCTAD (2001).





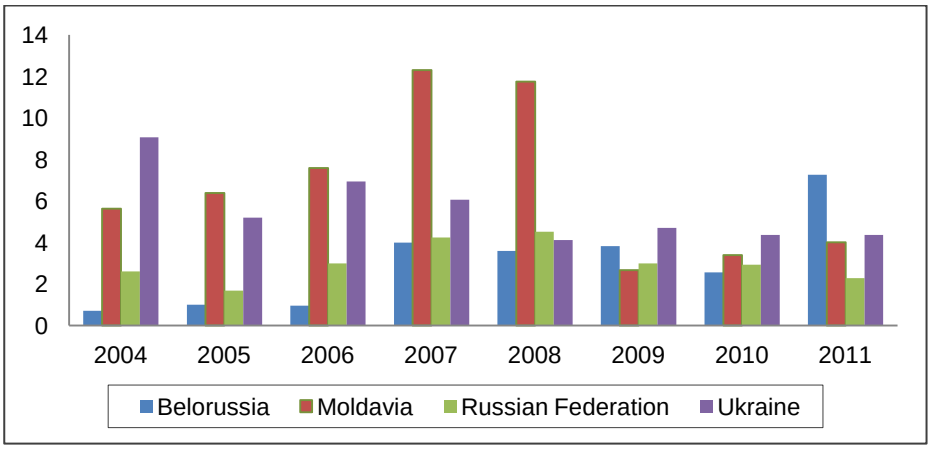
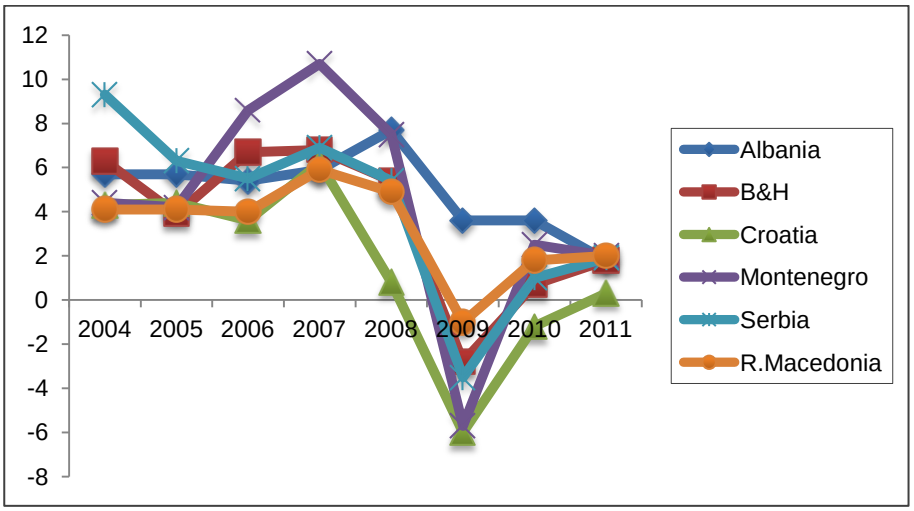
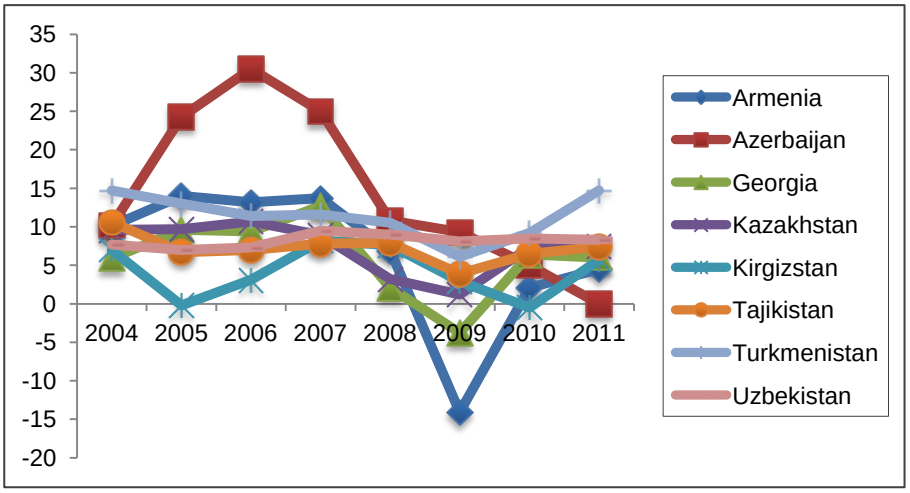


Figure 2. Share of FDI inflow in GDP in the SEE and CIS countries, 2004-2011 (%)
Source: According to UNCTAD data, www.unctad.org/stat





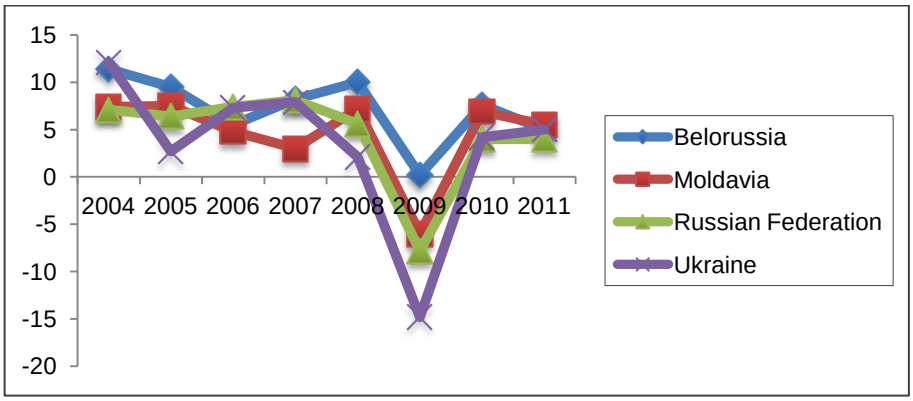


Figure 3. GDP growth rate in the SEE and CIS countries, 2004-2011 (%)
Source: According to EBRD database, www.ebrd.com/economics/data

The linear correlation between FDI inflows as a percentage of GDP and EBRD transition indicators indicate the influence of progress of transition on FDI inflow in the SEE and CIS countries in the period from 2004 to 2011.

The Pierce coefficient value (r=0.337) indicates an existence of positive correlation between the average transition indicator and the FDI inflow in transition countries during the analyzed period.

According to each variable, the highest correlation exists between the FDI inflow as a percentage of GDP and the infrastructure (r=0.278), followed by the financial institutions (r = 0.251), then the market and trade (r=0.176), with the lowest correlation existing between FDI inflows and the enterprise indicator (r=0.131).

The coefficient of determination value (p=0.313) indicates that the correlation between the FDI inflow and the average transition indicator is not statistically significant.

The beta-coefficient value (β=0.45) indicates that the increase of the average transition indicator by one percent increases the FDI share in GDP by 0.45%.

In comparison with the analysis of the influence of FDI inflows on the GDP growth rate in the SEE and CIS countries in the period from 2004 to 2011, it can be seen that the progress in transition has a greater influence on the FDI share in GDP. In this context, the results of the analysis confirm the correlation between FDI and economic growth: FDI inflow stimulates the economic growth, while, FDI inflow rises with the country`s economic development. In transition countries the impact of FDI on the economic growth depends on the successful implementation of market and structural reforms during the transition period. Slow progress in transition neutralizes or even surpasses the FDI positive effects on the economic growth.

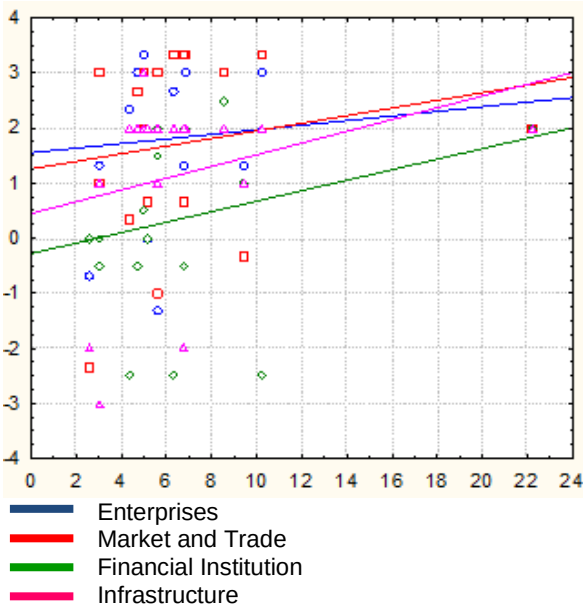


Figure 4. Correlation between the transition indicators and the share of FDI inflows to GDP in SEE and CIS countries, 2004-2011

Notes: FDI as a % of GDP

Source: own calculations

4. Conclusion

FDI effects on the economic growth are conditioned by the economic development of the host-country. In the 1990`s, the transition countries still faced problems arising from the transition, the privatization had not yet been completed, and the implementation of structural reforms went slow, which significantly impacted on FDI inflow. FDI effects on the economic growth are conditioned by the implementation of structural reforms during the transition period and this context FDI effects are determinate from the level of economic development of the host-country. Experience has shown that the economies with higher growth rate have a greater FDI inflow. FDI have a positive impact on the economic growth in transition countries, but we also need to consider the feedback, the influence of the progress in transition on the FDI inflow.

The statistic analyses confirm the correlation between FDI and economic growth: FDI inflow stimulates the economic growth, while, FDI inflow rises with the country`s economic development. According to the results from the linear correlation the progress in transition measured by EBRD transition indicators, has a greater influence on the FDI share in GDP than the influence of FDI inflows on the GDP growth rate in the countries of SEE and the CIS in the period from 2004 to 2011. The statistical analysis indicates that the highest correlation exists between the FDI inflow as a percentage of GDP and infrastructure, followed by the financial institutions, then the market and trade indicator, with the lowest correlation existing between FDI inflows and the enterprise indicator.

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Appendix

Table A1. FDI inflow as percent of GDP in SEE and CIS countries, 2004-2011

	2004	2005	2006	2007	2008	2009	2010	2011
SEE								
Albania	4.73	3.24	3.61	6.15	7.51	8.27	8.92	7.92
B&H	5.05	3.22	4.49	11.94	5.41	1.47	1.37	2.11
Croatia	2.88	4.07	6.96	8.42	8.84	5.29	0.65	2.4
Montenegro		/	/	/	21.25	36.88	18.5	12.3
Serbia		/	/	/	5.53	4.3	3.07	6.85
R. Macedonia	5.87	1.6	6.6	8.49	5.96	2.16	2.31	4.61
CIS								
Armenia	6.93	4.88	7.1	7.59	8.02	8.99	6.08	5.18
Azerbaijan	40.97	12.68	-2.78	-14.37	0.03	1.07	1.09	2.31
Belorussia	0.71	1.01	0.96	3.99	3.59	3.82	2.56	7.26
Georgia	9.6	7.06	15.11	17.2	12.22	6.12	6.98	7.3
Kazakhstan	9.63	3.45	7.75	10.6	10.73	11.48	7.33	7.46
Kirgizstan	7.93	1.73	6.42	5.47	7.33	4.04	9.48	7.72
Moldavia	5.63	6.38	7.58	12.3	11.75	2.67	3.4	4.01
Russian Federation	2.61	1.69	3	4.24	4.52	2.99	2.93	2.29
Tajikistan	13.1	2.36	11.96	9.68	7.28	0.32	-0.26	0.17
Turkmenistan	3.32	3.36	5.13	5.26	6.69	22.83	15.7	13.2
Ukraine	9.06	5.2	6.93	6.06	4.11	4.71	4.37	4.36
Uzbekistan	1.33	1	3.15	2.48	2.55	4.16	3.09	3.22

Source: UNCTAD database, www.unctad.org/stat

Table A2. GDP growth rate in SEE and CIS countries, 2004-2011

	2004	2005	2006	2007	2008	2009	2010	2011
SEE								
Albania	5.7	5.7	5.4	5.9	7.7	3.6	3.6	1.8
B&H	6.3	3.9	6.7	6.8	5.4	-2.8	0.7	1.8
Croatia	4.3	4.4	3.6	6.2	0.8	-6	-1.2	0.3
Montenegro	4.4	4.2	8.6	10.7	7.5	-5.7	2.5	2
Serbia	9.3	6.3	5.5	6.9	5.4	-3.5	1	1.9
R. Macedonia	4.1	4.1	4	5.9	4.9	-1	1.8	2
CIS								
Armenia	10.1	14	13.2	13.7	6.9	-14.1	2.1	4.5
Azerbaijan	10.2	24.3	30.5	25	10.8	9.3	5	0
Belorussia	11.4	9.5	5.5	8.2	10	0.2	7.6	5
Georgia	5.9	9.6	9.4	12.7	2.1	-3.8	6.4	6
Kazakhstan	9.6	9.7	10.7	8.9	3.2	1.2	7.3	7.5
Kirgizstan	7	-0.2	3.1	8.2	7.6	2.9	-0.5	5.7
Moldavia	7.4	7.5	4.8	3	7.2	-6	6.9	5.5
Russian Federation	7.1	6.4	7.4	8.1	5.6	-7.8	4	4
Tajikistan	10.6	6.7	7	7.8	7.9	3.9	6.5	7.4
Turkmenistan	14.7	13	11.4	11.6	10.5	6.1	9.2	14.7
Ukraine	12.1	2.7	7.3	7.9	2.1	-14.8	4.2	5
Uzbekistan	7.7	7	7.3	9.5	9	8.1	8.5	8.3

Source: EBRD database, www.ebrd.com/economics/data

Table A3. Transition indicators in SEE and CIS countries, 2011

	Enterprise			Market and Trade			Financial Institutions		Infrastructure
SEE									
Albania	4-	4	2+	4+	4+	2	3	2-	2+
B&H	3	3	2	4	4	2	3	2-	3-
Croatia	3+	4+	3	3	4+	2+	4	3-	3
Montenegro	3+	4-	2	4	4	2	3	2-	2+
Serbia	3-	4-	2+	4	4	2+	3	2	2+
R. Macedonia	3+	4	3-	4+	4+	2+	3	3-	3-
CIS									
Armenia	4	4	3-	4+	4+	3	4-	3	2+
Azerbaijan	4-	4	2+	4+	4+	2	3	2-	2
Belorussia	3	3	2	4	4	2	3	2-	1+
Georgia	3+	4+	3	4	4+	3	4	3	2+
Kazakhstan	3-	4-	2+	4	4	2+	3	2	2+
Kirgizstan	3+	4	3-	4+	4+	2+	3	3-	2-
Moldavia	4-	4-	3-	4+	4+	3	3+	3	2
Russian Federation	3+	4-	2	4	4	2	3	2-	3-
Tajikistan		4-	2-	4-	3+	2-	2	1	1+
Turkmenistan	2	4-	2	4	4	2	2+	2-	1
Ukraine	2-	2+	2-	3+	2+	2	2+	2	2
Uzbekistan	4-	4	2+	4+	4+	2+	3-	2+	2-

Source: EBRD database, www.ebrd.com/economics/indicators