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Transition, Structural Divergence, and Performance

Eastern Europe and the former Soviet Union over 2000-2007

Giovanni Andrea Cornia*

March 2010

Abstract

During the socialist era the communist regime attempted to reduce development differentials among states and social classes. In contrast, during the last 20 years, the economies in transition experienced considerable divergence in the economic, social, demographic and political areas. As a result, these countries can now be grouped into four structurally different clusters alternatively dependent on manufactured exports, high- and low-tech services, commodities exports, and migrant remittances. Between 2000 and 2007, the cluster with the fastest growth was not that which most reformed its economy and institutions, but that of commodity exporters where, however, life expectancy improved far less than in other clusters.

Keywords: structural transformation, divergence, performance, country clusters
JEL classification: P2, P21, P36, O4

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1 Introduction: transition and divergence in Eastern Europe and the former Soviet Union

The countries in transition which have emerged from the socialist bloc of Eastern Europe and the former Soviet Union (EE-FSU)[1] have always been very different. Their heterogeneity has distant origins and finds its roots in dissimilar endowments of natural resources, geographies and cultural developments over several centuries. Yet, during the socialist era public policy explicitly attempted to reduce differentials in levels of development among states, regions within states, and social classes. Such an 'equalization of outcomes' agenda was pursued by compressing the wage distribution, socializing the profits of state-owned enterprises, subsidizing key consumption items, and providing universal pensions, family benefits, and free de jure (if not de facto) health and education.[2] In turn, cross-country differences were reduced by the use of 'socialist prices' (often equal to one tenth of world prices) in trade among the socialist economies, generous transfers from the USSR budget to poorer Soviet republics (equal, for instance, to a third of Uzbekistan's GDP in 1991), and the funding of major infrastructural projects directly from Moscow. The development pattern was also very similar. While differences in natural endowments affected somewhat the division of labour among the socialist economies (by emphasizing, for instance, manufacturing in Central Europe, oil extraction in Siberia and cotton cultivation in Central Asia), everywhere the emphasis was placed on industry, large enterprises (*kombinati)*, and science and technology.

The evidence about convergence in economic and social outcomes during the socialist era points to a complex picture. In a study covering 1945-95, Cornia and Danziger (1997) find a clear convergence in infant mortality rates (IMR) across socialist countries between 1950 and 1970 and a more limited one in the subsequent years. Convergence in levels of life expectancy at birth (LEB) was achieved in the region till the late 1960s, after which the rate of improvement diminished sharply and the speed of convergence declined. Considerable convergence in the quantity (if not in the quality) of schooling was also observed. In the economic field there was a strong similarity in the growth rates of the Net Material Product till the end of the 1970s, as all countries grew at planned rates of 4-5 per cent. By definition, however, convergence in growth rates was not accompanied by convergence in the levels of NMP per capita. During the last decade of the socialist experiment the situation was reversed as there was divergence in NMP growth rates, as the richer Central European countries (Hungary, Czechoslovakia and Poland) grew more slowly than the poorer states of the USSR. This trend suggests that some convergence in NMP/c was achieved during this period. However, a study

[1] The 25 countries analyzed include: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Russian Federation, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. Lack of data did not allow including Bosnia I Herzegovina, Serbia and Montenegro. All regional or cluster averages are unweighted.

[2] Access to goods and services varied across regions, particularly in the FSU, as the urban areas and towns along the main rail lines were better covered than remote towns and rural areas. Also, access to health and higher education often entailed the payment of 'voluntary contributions' that discriminated against the poor and less well connected.

testing for a common growth path in the ex-communist bloc (Estrin et al. 2001) finds little evidence of convergence in NMP per capita within the bloc, a result which questions the effectiveness of policies to reduce differentials during the socialist era.

Since the onset of the transition, public policy has been inspired by the liberal ideology which attributes a central role to the market in the allocation of resources and limits the state intervention in the economy. Such new policy approach promoted price and trade liberalization, the dismantling of within- and cross-country equalization mechanisms inherited from the socialist era, the adoption of wage policies emphasizing human capital, merit and effort, decentralization, and a shift in welfare policy from the principle of 'equalizing outcomes' to that of 'equalizing opportunities'.

Despite a common emphasis on price liberalization, privatization of housing and small businesses, re-orientation of foreign trade and so on, and similar changes in economic structure (de-agrarization, dismantling of heavy industry, development of services), in the initial phase of the transition, policy approaches differed markedly across countries. Some nations relied on a shock therapy (as in Poland), others opted for a gradual approach, while post-soviet countries (such as Belarus and Turkmenistan) introduced hardly any reform. Thus, the transition represents a large-scale natural experiment, similar in extent and impact only to the decolonization of the 1950s, in which differences in initial conditions, policy approaches, institutional development and external financing lead to vastly different economic and social outcomes. Indeed, output and social conditions deteriorated only up to 1991 in Poland, 1995-96 in most countries, and 1999 in Moldova and Ukraine. While these differences affected the level of output and wellbeing, they did not, however, lead to a visible differentiation in economic structures. In contrast, with a region-wide recovery which started around 2000, the economic structure of the countries in transition began to diverge. The transition has therefore led to a double differentiation among countries sharing similar initial conditions, the first in the 'rate of growth' (over 1989-99) and the second in the 'pattern of growth' (over 2000-07). A final issue explored in this study is whether the differentiation in the pattern of growth affected aggregate growth and social performance.

2 Evidence of divergence among EE-FSU countries: 1989-2007

2.1 Increasingly similar approaches to the transition since mid-to-late 1990s

In the initial years, the approaches to the transition differed substantially. Most countries of Central Europe and the Baltic (Poland ahead of all) opted for a shock therapy, stabilized rapidly their macroeconomy and liberalized swiftly domestic markets and external transactions. In contrast, other countries (such as Uzbekistan) staggered their economic reforms over several years. As a result, till the mid 1990s, the increase in the mean regional value of the EBRD 'overall reform index' was accompanied by an increase in its coefficient of variation (CV) standard deviation (SD)[3] (Table 1). Since

[3] The measures used here to test σ-divergence are the standard deviation, i.e. the square root of the sum of the differences between the values of a variable and its regional mean, divided by the number of country observations at time t, i.e.: $SD = \sqrt{1/n \Sigma (x_i - \mu)^2}$ (where the first symbol on the RHS is the square root). When the values of x_i change considerably up-or down-ward over time, comparisons based on SD are biased. In this case it better to use the coefficient of variation CV = SD/μ which is equal to a

then, the countries which had initially adopted a gradual approach intensified their reform efforts, leading in this way to a gradual convergence in reform approaches—as indicated by the fall of the CV of this variable since 1995. Thus, with the exception of 'post-soviet' Belarus and Turkmenistan and 'gradualist' Uzbekistan, from the middle-late 1990s most countries of the region appear to have adopted similar economic policies.

Table 1: Descriptive statistics of the distribution of the EBRD 'overall economic reform index'

Year	number of countries	mean	median	Min	Max	SD	CV
1989	25	1.13	1.00	1.00	1.78	0.27	0.24
1990	25	1.24	1.00	1.00	2.62	0.46	0.37
1995	25	2.80	2.83	1.40	3.72	0.58	0.21
2000	25	3.12	3.27	1.57	3.87	0.60	0.19
2005	25	3.29	3.43	1.45	3.98	0.64	0.19
2007	25	3.32	3.48	1.45	4.05	0.64	0.19

Source: author's elaboration on EBRD data. The overall reform index varies between 1 (no reform) and 5 (full reform).

2.2 Macroeconomic stabilization: initial cross-country divergence followed by convergence

The effect of gradual convergence in reform approaches alluded to above are particularly evident in the field of macroeconomics. While macro outcomes differed substantially in the early phase of the transition (with most Central European and Baltic economies recording better results than the countries of South Eastern Europe and the CIS), over the medium term performance in this area has slowly converged, as the laggards gradually improved their indicators since the mid 1990s, possibly as a result of the emphasis placed by governments and IMF on stabilization and of the requirements to be fulfilled by countries aspiring to enter the EU. As a result, as shown in Table 2, the average budget deficit/GDP, government debt/GDP, and inflation declined steadily since 1995.[4] Only the mean current account deficit/GDP (as well as its minimum and maximum values) rose in 2007 because of the surge in the world prices of food and fuel which affected unfavorably the importing countries of the region. Table 2 suggest also that there was considerable convergence in budget deficits/GDP, debt/GDP and inflation. Only the current account/GDP shows an ambiguous trend during the last few years, as its mean, min and max values rose, while the SD rose. However, the CV rose between 1995 and 2000, but broadly fell since then.

standardized SD. While CV is preferable in most cases, it utility declines when the mean (μ) tends to zero, a fact which raises markedly its value. In this case it is better to use the SD.

[4] The data for 1990 refer to a small number of countries and cannot be compared with those of the following years.

Table 2: 1990-2007 descriptive statistics of the cross country distribution of macroeconomic indicators

Variable	Year	number of countries	Mean	Median	Min	Max	SD	CV
General government deficit/GDP*	1990	9	-2.03	-1.10	-8.15	3.10	4.01	1.97
	1995	25	-4.75	-3.84	-17.30	0.40	4.34	0.91
	2000	25	-3.22	-2.95	-12.27	3.20	3.62	1.13
	2005	25	-0.69	-1.23	-7.82	8.10	3.38	4.93
	2007	25	-0.18	-0.59	-6.19	5.72	3.19	17.30
General government Debt/GDP	1990	1	95.10	95.10	95.10	95.10	…..	…..
	1995	21	36.26	20.51	7.36	118.74	33.45	0.92
	2000	24	47.68	44.02	4.70	122.27	31.25	0.66
	2005	24	31.90	32.63	4.52	85.94	19.06	0.60
	2007	24	25.31	21.46	3.49	65.84	16.41	0.65
Current account balance/GDP	1990	6	-2.4	-2.3	-8.3	1.9	4.0	1.67
	1995	25	-5.8	-4.2	-18.3	2.2	6.3	1.10
	2000	25	-2.6	-3.7	-14.6	18.0	6.2	2.37
	2005	25	-3.0	-2.6	-12.4	13.6	6.8	2.29
	2007	25	-5.4	-6.4	-22.9	28.8	12.4	2.28
Inflation	1990	6	129	26	-0.2	585	228	1.77
	1995	25	183	39	2.0	1005	263	1.43
	2000	25	18	9	-0.8	168	33	1.77
	2005	25	6	6.	0.5	13	4	0.65
	2007	25	7	7	1.9	16	4	0.55

Notes: *as the mean of General government deficit/GDP tends to zero, its cross-country variability has to be assessed on the basis of the SD (see footnote 4).

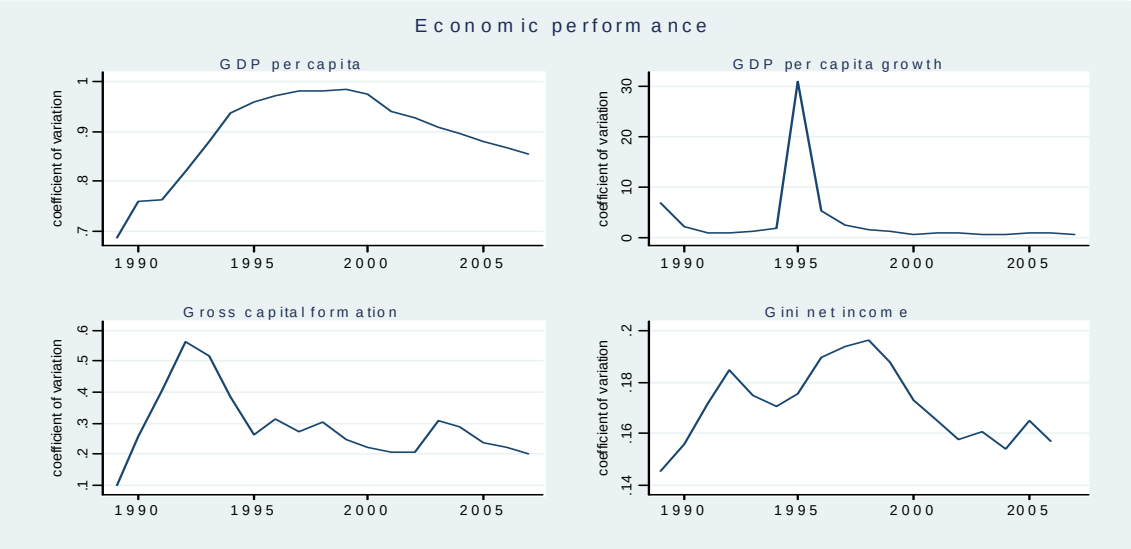
Source: author's elaboration on IMF-GFS data.

2.3: Economic performance: cross-country divergence followed by hysteresis

Despite increasingly similar policy approaches adopted since the mid late 1990s and the convergence observed for most indicators of stabilization, the economic performance of EE-FSU countries diverged sharply in the initial part of the transition (roughly 1989-95 or 1989-99),[5] as the transformational recession affected less severely the Eastern European countries and Uzbekistan than those of the FSU. During this period the GDP/c, its annual growth rate, the investment rate and the Gini index of income inequality deteriorated sharply but at different speeds and for different durations, causing in this way a clear divergence in economic performance, as indicated by the increase in the CV of these four variables during the initial years of the transition (Figure 1).

[5] In Eastern Europe, the duration of the transformational recession that began in 1989 varied from a minimum of two years in Poland, to three to four in most of the rest, and between eight and ten years in Bulgaria and Romania, where an initial recovery was derailed by a currency crisis and other shocks. In the countries of the FSU the transformational recession started mostly in 1990 (except for Latvia, Kyrgyzstan, Turkmenistan, and Uzbekistan where it began in 1991), while the recession generally ended in 1996-98, though the Baltic and Caucasus countries, Belarus and Uzbekistan returned to growth in 1993-95. In contrast, Moldova and Ukraine bottomed out only in 1999.

Figure 1: 1989-2007 trend in the coefficient of variation of GDP/C, its growth rate, the investment rate and the Gini coefficient of disposable income, 25 countries, 1989-2007



Source: author's elaboration on WDI data. Note: the sharp rise of the CV of the growth rate of GDP/c is due to the fact that its 1995 regional mean was close to zero (-0.2). Yet, an increase in its dispersion is confirmed also by the SD which rose from 5 to 7.2 between 1990 and 1995, to decline to 4.0 in 2000.

There is a huge literature on the factors explaining the differences in the extent and duration of the transformational recession. The initial analyses suggested that countries which adopted a shock therapy and quickly liberalized domestic and external transactions performed better than those following a gradual reform path. This view was best summarized in the 1996 *World Development Report* which noted that 'Consistent policies, combining liberalization of markets, trade and new business entry with reasonable price stability, can achieve a great deal even in countries lacking clear property rights and strong market institutions' (World Bank 1996: 142).

Yet, subsequent analyses (Roland 2000; Cornia and Popov 2001; Popov 2005) emphasized the role of initial distortions, wars, the collapse of state institutions, and the supply shocks entailed by too rapid changes in relative prices following price liberalization in highly distorted economies.[6] Indeed, a large share of the variation in the extent of output collapse appears to be explained by the magnitude of the distortions in industrial structure and trade patterns inherited from the socialist era, i.e. by the weight of the military sector, extent of over-industrialization, underdevelopment of the service sector, under-openness of the economy, and share of exports to socialist countries. This

[6] There are several explanations of why a gradual transition may lead to a better performance than a shock therapy; see Roland (2000) for a survey. These explanations emphasize among others: the weakening of the state and its inability to enforce production quotas under the system of dual pricing; the absence of competitive product markets due to the monopolistic nature of privatized SOEs; the 'disorganization' entailed by the disruption of the supplier-producer and producer-retailer linkages inherited from the socialist era, and the high costs or rebuilding these linkages (Blanchard and Kremer 1997). In turn, Popov (2005) argues that with rapid price liberalization, the ability to reallocate resources from the 'non-competitive sector' (i.e. that with the highest price distortions during socialism) to the 'competitive sector' is limited by the low saving and investment capacity of the country, as a rapid contraction of former sector reduces the overall output, saving and investment capacity of the country. The upper limit to the speed of reallocating resources from non-competitive to competitive industries is thus basically determined by the net investment/GDP ratio.

explanation emphasizes the difficulties caused by market imperfections (such as limited capital and labour mobility, and poorly develop banking and housing market) in restructuring the supply-side of the economy and reallocating labour from the declining to the competitive sector during a period of depressed investments. The divergence in growth rates was due also to differences in institutional capacity of the state, i.e. its ability to collect taxes to fund 'a minimum state' capable of ensuring law and order, protection of property rights, contract enforcement, basic social services and so on.

Since the late 1990s, the entire region experienced a considerable growth rebound which lasted till the onset of the food–fuel–financial crisis of 2007-09. Such rebound was driven by factors other than those that influenced performance during the transition, and can thus be analyzed with the usual tools of conventional growth theory. Indeed, it could be expected that several years of economic liberalization lead to efficiency gains and a better economic performance, while the impact of pre-transition distortions faded away, institutional capacity improved and macroeconomic policy remained reasonable. During this period, all countries of the region recorded, with rare exceptions, fast rates of growth. As a result there was considerable 'σ-convergence' (i.e., in growth rates) but not, as predicted by most growth models, 'β-convergence' (i.e., in levels of GDP/c). In this case, the available evidence suggests the presence of hysteresis as the relative and absolute difference in GDP/c declined only modestly from the peak reached between 1995 and 2000. In many countries, the recovery recorded since the late 1990s was to an important extent a 'growth rebound' which made use of unused capacity rather than of an increase in the capital stock, as suggested by the only limited convergence in investment rates (Figure 1). In other words, investments recovered in some countries but not in others, and their cross country distribution remained in mid-late 2000s more polarized than in the early-mid 1990s (ibid.). Similar considerations apply to the Gini coefficient of the distribution of net household income per capita, which rose by about ten points during the first decade of transition, to stabilize since then at the same level, while its CV declined only in part.

It must be emphasized that while in the 2000s the recovery involved the entire region, its drivers started to increasingly differ across countries. Thus, contrary to the fairly uniform approach followed during the era of central planning, economic liberalization has lead to a diversification in economic structures (see section 3).

2.4 Demographic changes and long-term growth

Long-term growth in the economies in transition will be influenced also by the future labour supply (which depends on birth, death, and migration rates) and population ageing, as measured by the old age dependency rate. As many economies of the region are at the moment net exporters of labour, or as those which have a net immigration balance (such as Russia) will be unable to solve their population problem by further increasing immigration, long-term growth will increasingly depend on trends in births and deaths. In this regard, Table 3 shows that until 1995 the decline in fertility rate affected only part of the region (as shown by the increase in the CV). The drop in fertility spread subsequently to all other countries (as shown by the decline in the CV). During the last 3-4 years the fertility rate has climbed imperceptibly in several countries. Yet the birth losses recorded between 1989 and 2005 will reduce labour supply over the next 15 years and beyond in the entire region, with the exception of Central Asia. In part of the region, the initial phase of the transition was also

characterized by a surge in male mortality rates (especially for the 25-39 age group), while starting from 1995 it slowly returned to the 1989 level (Table 3). Yet, as indicated by the rapid rise in the CV and SD, adult mortality in the region increasingly diverged, as several countries of the FSU (such as Russia, Ukraine, Belarus) continued exhibiting abnormally high adult mortality rates while the Eastern European countries showed steady improvements. Such countries will thus be affected by further decreases of their working age population. Finally, with the exception of the countries of Central Asia, most economies in transition (particularly the Eastern European ones) recorded a rise in average old age dependency ratio and in its cross-country variance (ibid).

Table 3: Descriptive statistics of the cross country distribution of key demographic indicators, 1990-2007

Variable	Year	Number of countries	Mean	Median	Min	Max	SD	CV
Fertility rate	1989	18	2.27	2.04	1.52	4.18	0.72	0.32
	1990	25	2.42	2.04	1.46	5.09	0.91	0.38
	1995	25	1.96	1.58	1.23	4.52	0.88	0.45
	2000	25	1.70	1.39	1.10	4.00	0.68	0.40
	2005	25	1.66	1.42	1.20	3.53	0.58	0.35
	2007	25	1.70	1.42	1.20	3.35	0.55	0.32
Mortality rate for pop. 25-39 (per 100,000)	1989	25	188	193	98	264	47	0.25
	1990	25	193	189	104	276	50	0.26
	1995	25	239	213	105	484	105	0.44
	2000	25	201	177	90	457	100	0.50
	2005	25	198	148	77	514	120	0.60
	2007	….	….	….	….	….	….	….
Old age dependency ratio (60+/15-59)	1989	25	21.8	24.2	11.4	30.9	6.6	0.30
	1990	25	22.3	24.6	11.5	31.7	6.7	0.30
	1995	25	23.6	26.6	10.7	34.7	7.3	0.31
	2000	25	24.7	27.9	10.4	34.7	8.1	0.33
	2005	25	24.7	25.8	9.1	35.9	8.9	0.36
	2007	25	24.4	26.4	8.5	36.8	9.2	0.38

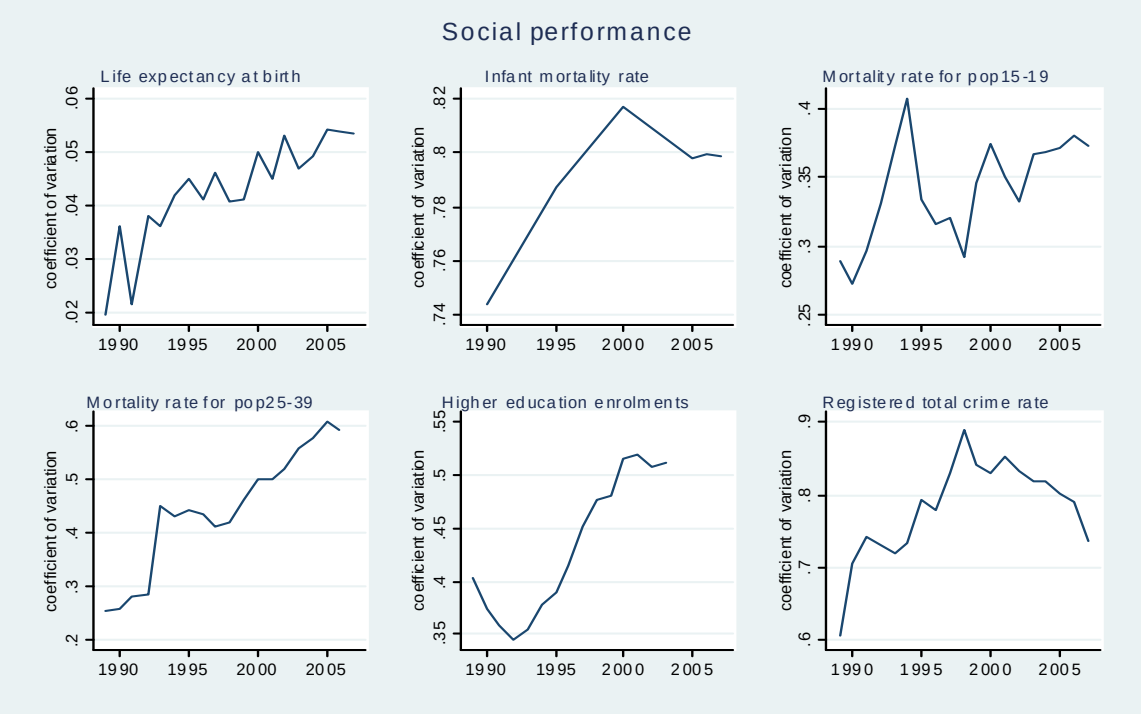
Source: author's elaboration on Transmonee data.

2.5 Divergence and hysteresis in human wellbeing

It is well known that the transition entailed deterioration in several aspects of human wellbeing, particularly during the years of the transformational recession. Yet, since the mid-late 1990s, the regional life expectancy at birth (LEB) and other social indicators recorded a clear rebound. However, such improvements resulted from two mutually offsetting trends; i.e., gains recorded in Eastern Europe and the Caucasus and losses or continued stagnation in the rest of CIS. As a result, the CV of LEB and the mortality rate of the 15-19 years old shows a steady divergence during the first years of transition followed by hysteresis or further divergence in the subsequent years (Figure 2). In contrast, an initial cross-country divergence followed by hysteresis is evident in the case of IMR, enrolment rates in tertiary education, and overall crime rate. All in all, Figure 2 points to a systematic divergence over 1989-2007 in all the aspects of human wellbeing

considered, with large rises in the cross-country dispersion of several indicators of wellbeing during the transformational recession, followed by further divergence or hysteresis during the growth years of the last decade. Such trend is contrary to what is suggested by economic theory in countries experiencing rapid growth, and runs contrary the trends observed between 1950-89.

Figure 2: 1989-2007 trend in the coefficient of variation (CV) of selected social indicators



Source: author's elaboration on Transmonee data.

2.6 Divergence in political structures

Many indexes are used to measure the extent of democracy. They all suffer from measurement bias but offer some information on the evolution of political systems in the countries considered. The indicator selected in this study is 'the rule of law index' which ranges between -2.5 (no rule of law) and 2.5 (complete rule of law) and is available from 1996 onward. In this regard, the data in Table 4 show a slow improvement in such index for the region as a whole between 1996 and 2007. But it shows also a steady increase in its CV from 2000 to 2007, suggesting that after a generalized improvement in the rule of law, political institutions in the region started to diverge. The Central European countries built strong democratic regimes characterized by fair and free elections and a 'just society' characterized by the rule of law and state institutions able to collect taxes, ensure property rights, enforce contracts and take responsibility for the universal provision of basic social services. A second group of countries (some of the states of the FSU and the Balkan) evolved into 'illiberal democracies' (Zakaria 1997) i.e. regimes characterized by only partially free and fair elections, limited rule of law, scant protection of individual rights, a weak administration unable to ensure the respect of property rights, contracts enforcement and a modicum of social welfare. Finally, Central Asia and Belarus can be characterized as authoritarian regimes lacking fair and free elections, with no rule of law and the

frequent recourse to authoritarian measures by the executive. Given the emphasis placed by the literature on the importance of democracy, rule of law and state institutions for economic and social development, the above data suggest that the divergence in political institutions observed since 2000 might have affected negatively investment climate, output and human wellbeing in part of the EE-FSU.

Table 4**:** Descriptive statistics of the cross country distribution of the rule of law index, 1996 2007

year	Number of countries	Mean	Median	Min	Max	SD	CV
1996	25	-0.24	-0.21	-1.23	0.87	0.65	2.68
2000	25	-0.36	-0.60	-1.40	1.00	0.75	2.10
2005	25	-0.30	-0.50	-1.40	0.81	0.72	2.43
2007	25	-0.27	-0.50	-1.28	1.00	0.72	2.63

Source: author's elaboration on Worldwide Governance Indicators.

2.7 Summing up

The prior analysis has argued that the EBRD overall policy reform index diverged in the years of the transformational recession but converged in the subsequent period, meaning that the policy approaches to the transition became increasingly similar. However, despite this, during the growth years of 2000-07 there was a limited reconvergence for most of the 13 economic and social indicators included in Table 5, as in 11 cases there was either hysteresis of further divergence.

Table 5: Summary of the changes in regional mean and dispersion of key performance indicators, 1989-2007

	Transformational recession 1989/90-2000 (or 1989/90-95)		Years of recovery (late 2000-2007)	
	trend in regional mean	trend in cv	trend in regional mean	trend in cv
GDP/c	Decline 2479→ 1917 (1995)	Divergence	Increase 1917 → 3639	Hysteresis
Growth rate GDP/c	Decline 0.8 →- 0.2 (1995)	Divergence	Increase -0.2 → 8.6	Convergence
Investment/GDP	Decline 32.3→ 22.6	Divergence	Increase 22.6 → 28.9	Hysteresis
Gini of disp. Income	Increase 23.6 → 32.4	Divergence	Increase 32.4→ 33.1	Hysteresis
TFR	Decline 2.42 → 1.70	Divergence	Constant 1.70 → 1.67	Convergence
Death rate 25-39	Increase 188→239 (1995)	Divergence	Decline 239 → 198	Divergence
Old age dependency ratio (60+/(15-59)	Increase 21.8 → 24.7	Divergence	Constant 24.7 → 24.4	Divergence
LEB	Decline 70.4 → 68.7 (1995)	Divergence	Increase 68.7 → 71.2	Hysteresis
IMR	Decline 33 → 24	Divergence	Decline 24 → 17	Hysteresis
Death rate 15-19	Increase 77 → 85 (1995)	Divergence	Decline 85 → 59	Divergence
Enrolment in tertiary education	Increase 18 → 31	Divergence	…..	…..
Overall crime rate	Increase 851 → 1590	Divergence	Increase 1590 → 1769	Divergence
Rule of law	Decline- 0.24 (1996)→-0.36	Convergence	Increase -0.36→- 0.27	Divergence

Source: author's compilation on the basis of the data reported in the prior tables and figures.

This increasing regional heterogeneity does not deny that club-convergence might have taken place within homogeneous clusters (see next section). For instance, Matkowski and Prochniak (2006) found β-convergence over both 1993-99 and 1999-2005 among the EU Accession Countries (five Central European and three Baltic). The convergence was particularly marked during the latter period. According to these authors, this was the result not only of decreasing return to capital in richer economies but also of structural and regional policy introduced by the EU to reduce the development gap in

the region. Yet, while club-convergence might have occurred in some cases, the general picture is one of a widespread process of divergence within the region.

3 Structural change and the birth of structurally different country clusters

3.1 Broad trends in structural changes in the region

With systemic changes in asset ownership, price formation, allocation of resources and external economic relationships, all transition economies experienced radical structural changes. Gone was the emphasis on state agriculture, forced industrialization, heavy industry, large *kombinati*, limited labour mobility and uniform approaches to development. Five major structural changes were observed in all countries, regardless of their initial level of income,[7] factors endowment and geographical location. The first was 'de-agrarization' (Landesmann 2000), i.e. a decline in the share of agricultural value added and employment to levels similar to or lower than those of market economies with similar GDP/c (Table 6). It must be noted, however, that over 1991-93 Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Kyrgyzstan, Romania, Tajikistan, Turkmenistan, and Uzbekistan, i.e. all countries with a low GDP per capita, experienced a process of 're-agrarization', as agricultural output declined less markedly than manufacturing and labour moved from urban to rural areas in countries which carried out egalitarian land reforms. This phenomenon was however transitory and the temporary shelter offered by agriculture was abandoned when service sector jobs became available and people had the opportunity to migrate. As a result, since the mid 1990s agricultural output and employment dropped also in low-income countries in transition, as well as in countries such as Moldova, Ukraine, Russia and Kazakhstan which count on a strong comparative advantage in agriculture.

The second common structural transformation was 'deindustrialization'. All industrial branches, particularly manufacturing and energy generation suffered an absolute fall in the employment and output level, particularly in countries where the 'initial distortions' (a high share of employment and output in heavy industry and the armament sector) was greatest. Here too there were exceptions to the general rule, particularly in countries of group 3 (Table 6) where the share of manufacturing value added remained broadly constant or even rose. Indeed, after a minor drop over 1989-92, the output and employment share of manufacturing remained constant in Hungary, Slovenia and the Czech Republic while it rose in Slovakia which has become a major production platform for multinationals operating in the automotive and other sectors. These economies have also shown important structural changes in the field of foreign trade as suggested by the type of goods exported, countries of destination, and export/GDP ratios.[8] This sub-group appears to have dwelled on its old expertise in manufacturing production. In contrast, in the rest of group 3, the share of manufacturing declined sharply, for instance from 23 to 16 per cent in Estonia and from 28 to 11 per cent in Latvia.

[7] In 1989 GDP/c (2000 prices), varied from US$500 in Tajikistan to around US$8,000 in Slovenia.

[8] Over 1989-2007, export/GDP ratios rose respectively from 45 to 80% in the Czech Republic, 36 to 80 in Hungary, 20 to 40 in Poland and a staggering 28 to 86 in Slovakia.

Table 6: Changes in selected structural economic indicators over 1991/2-2006

Countries*	Years	Share of VA in agriculture	Share of VA in manufacturing	Share of VA in transport & communication	Share of VA in 'other services'	Energy consumption per capita
1. 8 countries with a 1989 GDP/c < 1250 $ (2000 prices)	1991/2	32.5	26.3	4.7	16.4	1560
	1995	35.2	18.8	6.8	17.2	1242
	2000	27.2	15.4	8.2	20.7	1201
	2006	21.9	13.7	9.0	20.3	1320
2. 8 countries with a 1989 GDP/c > 1250 and < 3000 $ (2000 prices)	1991/2	21.9	25.5	7.3	20.6	3221
	1995	18.0	20.2	10.0	23.2	2518
	2000	13.2	19.7	11.9	26.2	2266
	2006	9.8	18.4	11.6	30.2	2661
3. 9 countries with a 1989 GDP/c > 3000 $ (2000 prices)	1991/2	8.5	26.6	9.7	29.9	2884
	1995	7.6	22.6	9.5	34.2	2721
	2000	5.3	21.4	10.3	37.0	2660
	2006	4.4	20.6	10.3	37.5	3006

Note: *The three groups include the following countries: group 1: Albania, Armenia, Azerbaijan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan; group 2: Belarus, Bulgaria, Georgia, Kazakhstan, Makedonia, Romania, Russia, Ukraine; group 3: Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia.

Source: author's elaboration on UNCTAD's data.

The third structural change—related to the decline of the heavy industry and change in the relative price of energy—is a substantial decline in energy consumption per capita (Table 6) which fell by roughly a third in group 1 and 2 and a tenth in group 3. While this fall was expected during the first years of transition, it then lasted also during the subsequent years, though a modest trend reversal took place in 2006. Fourth, in all economies in transition there was a substantial expansion of services. This catching-up was, however, partially due to statistical reclassifications and outsourcing of service activities previously undertaken within the industrial sectors (Landesmann 2000). The sub-sector which caught up most rapidly was 'transport and telecommunication' which saw its share of GDP reach 9-12 per cent (Table 6). An additional observation concerns the rapid growth (especially among countries of group 3) of 'other services' which includes banks and other financial institutions, real estate, business services (such as accounting, legal, software, consulting), personal services (private health, nursing, entertainment, and so on) and tourism. This was true in particular in countries lacking an established manufacturing tradition, such as the Baltic countries and South Eastern European. Particularly in these countries, the employment and output gains in 'other services' almost completely compensated for the employment and output losses in industry and agriculture. These countries generally specialized in the modern branches of the 'other services' sector, though in some cases they developed service activities with a low value-added.

Finally, the liberalization of the labour market led to a substantial transfer of labour across sectors, informal employment, fast job turn-over and—with the liberalization of labour movements and a reduction in work opportunities during the 1990s—mass migration first towards Russia and subsequently towards the EU. In some of group 1 countries, labour migration reached substantial proportions. Though the literature suggests that migration does not lead to long-term growth (IMF 2005)—including because of the low fertility rates of some of the countries from which it originates (e.g.

Moldova and Ukraine)—in several EE-FSU countries migrant remittances have become a major source of subsistence and short-term growth. The latest figures (that underestimate their true value) show in fact that in 2006-07 migrant remittances accounted for between 13 and 25 per cent of GDP in Albania, Armenia, Kyrgyzstan and Moldova, and for a staggering 36 per cent in Tajikistan.

3.2 Cluster analysis

As suggested by the above descriptive analysis, different patterns of specialization emerged in the region during the last decade. Particularly during the recovery and growth phase of late the 1990s to 2007, there was substantial structural diversification within the region, a trend opposite to the forced convergence observed during the socialist era. Thus, though all EE-FSU countries recorded during this period a growth of GDP of 5-10 per cent, the drivers of such growth differed remarkably. To identify the clusters of economies which have emerged in the region since the onset of the transition, and especially since 2000, a hierarchical cluster analysis was carried out for 1996 (the first year with complete data), 2000 (mid way into the transition) and 2006[9] (the last year with complete data) using four scale-unstandardized clustering variables little correlated with each others, i.e.: (a) 'net manufacturing exports/GDP' which identifies the economies characterized by a dominant manufacturing sector; (b) 'share of 'other services'/GDP' which identifies economies which developed an advanced or informal services sector;[10] (c) 'net exports of fuels and ores/GDP' which characterizes those economies whose main growth engine is the export of primary commodities; (d) the 'sum of Official Development Assistance (ODA) and migrant remittances on GDP'. As noted, in the initial phase of the transition some of the poorest countries relied in a major way on ODA while from the end of the 1990s increased labour mobility raised substantially their share of migrant remittances on GDP.

The analysis identified in 2006 four country groups with dissimilar factor endowments, institutions, and growth drivers (Table 7). The first includes some Central European nations (Czech Republic, Hungary, Poland, Slovenia, and Slovakia) plus Belarus and Ukraine, i.e. countries dependent on the export of manufactured goods, supported in most cases by large inflows of FDI and foreign finance. The second includes mixed and predominantly tertiarized economies (the three Baltic, Bulgaria, Romania, Macedonia and Georgia) is somewhat more heterogeneous. The third cluster is constituted by primary commodities exporters (Russia, Azerbaijan, Turkmenistan, and Kazakhstan). Cluster 4 (Albania, Armenia, Kyrgyzstan, Moldova, Tajikistan, Uzbekistan) includes nations initially dependent on foreign aid and which later become suppliers of migrants, becoming in this way dependent for their growth on the inflows of remittances.[11]

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9 To reduce noise, the 1996 value of the variables is set equal to the average of 1995 (where available), 1996 and 1997, that of 2000 to the average of 1999, 2000 and 2001, and that of 2006 to the average of 2005 and 2006.

10 See section 3.1.

11 In a few cases, the official value of migrant remittances was corrected on the basis of information available to the author. In Armenia most migrant remittances are recorded as FDI, as part of this money is used to purchase houses. To correct for this bias, half of the value of FDI was treated as migrant remittances. A similar approach was followed in Georgia and Ukraine. Likewise, the 2006/07 value of remittances in Uzbekistan was estimated at 10 per cent of GDP on the basis of unofficial data communicated to the author in 2008 by the local Chamber of Commerce. In Uzbekistan the rate of

Table 7**:** Descriptive statistics of clustering variables for four groups of economies in transition, 2006

		Net exports of fuel & ores /GDP	(ODA + remittances)/ GDP	Net exports of manufactured goods/GDP	'Other services'/GDP
Cluster 1: exporters of manufactured goods Bel, Czech, Hun, Pol, Slov, Slvk, Ukr.	Minimum	-7.9	0.6	-2.2	26.6
	Mean	-4.7	1.6	2.3	35.4
	Maximum	-1.3	3.3	7.3	45.3
	CV	0.5	0.6	1.3	0.2
Cluster 2: Mixed-tertiarized economies Bul, Cro, Est, Geo Lat, Lit, Rom, Mak	Minimum	-8.8	1.8	-20.8	28.8
	Mean	-3.5	5.1	-16.2	34.2
	Maximum	4.1	9.1	-10.1	40.0
	CV	1.0	0.6	0.3	0.1
Cluster 3: Oil-ores exporters Azer, Kaz, Rus, Tkm	Minimum	21.1	-3.3	-27.0	10.4
	Mean	34.1	0.5	-17.1	23.1
	Maximum	54.4	4.3	-4.5	28.7
	CV	0.5	6.0[12]	0.5	0.4
Cluster 4: Aid-remittances dependent Alb, Arm, Kyrg, Mold, Tjk, Uzb	Minimum	-17.5	9.0	-33.6	15.1
	Mean	-2.7	19.5	-18.2	21.1
	Maximum	5.9	35.8	-10.6	32.3
	CV	3.2	0.5	0.5	0.3
Entire region (25 countries)	Minimum	-17.5	-3.3	-33.6	10.4
	Mean	2.4	6.8	-11.7	29.6
	Maximum	54.4	35.8	7.3	45.3
	CV	6.7	1.3	0.9	0.3

Source: author's calculation on official data.

The country groups are unambiguously identified in the case of clusters 1, 3 and 4, as the minimum, mean and maximum of the relevant clustering variables differ substantially from those of the other groups while their CV is lower than those of the entire region and of the other groups. The only partial exception is cluster 2 (mixed tertiarized economies). While its CV is lower than that of the other groups, its mean is similar to that of cluster 1. This implies that this group is identified on the basis of more than one clustering variable. The attribution of the 25 countries to the four clusters seems in most cases in line with what is known about these economies. However, there were a few surprises. For instance, despite the correction mentioned in footnote 11, data problems may have influenced the assignment of Georgia to the cluster of mixed-tertiarized economies rather than to that of aid-remittances dependent countries.

The analysis shows also that—always using the same clustering criteria—the composition of the clusters changed over time following shifts in economic specialization. Table 8 shows in fact that in1996, i.e. 4-7 years after the onset of the transition, the 'industrial-manufacturing model' inherited from the socialist era was still dominant in 15 of 25 countries analyzed. With the recovery which began in mid 1990s, the growth bonanza of the 2000-07 period, and the rise in world commodity prices,

outmigration rose exponentially in the aftermath of the land reform of 2004-07 which expelled two million peasants from privatized *shirkats*. Finally, in countries with no data on remittances but which are known to have low rates of migration (e.g., the oil producers, Czech Republic and Slovakia) this variable was assigned the value of 0.1%.

12 This value is artificially high as the mean tends to zero. In all these cases the CV is of little use.

there was however, an increasing divergence in growth patterns. As a result, seven countries (identified with one or two stars in Table 8) changed cluster between 1996 and 2000 as a result of a shift away from the manufacturing and mixed economies clusters, while 11 countries changed cluster between 2000 and 2006. Only nine countries on a total of 25 retained in 2006 their initial economic specialization. This number would drop further if considering that of these nine Armenia and Kyrgyzstan relied almost entirely in the initial years of the transition on foreign aid and less on migrant remittances, while the opposite occurred during the 2000s. Summing up, Table 8 confirms that there were many changes in economic specialization, away from the uniform socialist pattern of heavy industrialization and towards more diversified patterns of growth.

Table 8: Evolution over time of four clusters of 25 European countries in transition: 1996, 2000, 2006

	1996	2000	2006
Cluster 1**:** manufactures exporting economies	BEL, BUL, CZE, EST, HRV, HUN, LIT, LVA, MDA, MKD, POL, ROM, SVK, SVN, UKR	BUL, CZE, EST, HRV, HUN, LIT, LVA, MKD, POL, ROM, SVK, SVN,	BEL**, CZE, HUN, POL, SVK, SVN, **UKR****
Cluster 2**:** mixed or tertiarized economies	AZE, KAZ, RUS, UZB,	BEL*, UKR*	BUL*, EST*, GEO**, HRV*, LIT*, LVA*, MKD*, ROM*,
Cluster 3**:** oil-ores exporting economies	TKM	AZE*, KAZ*, TKM, RUS*, **TJK****	AZE, KAZ, TKM, RUS,
Cluster 4**:** remittances and aid dependent economies	ALB, ARM,GEO, KGZ, TJK	ALB, ARM,GEO, KGZ, MDA*, UZB*	ALB, ARM, KGZ, MDA, TJK*, UZB

Note: *indicates the shift over time to a cluster with a lower average GDP/c; **a shift to a cluster with higher GDP/c.

Source: author's calculations on official data.

4 Economic and social performance by cluster over 2000-07

Sections 2 and 3 have shown that the transition led to a marked divergence among the countries of EE-FSU in practically all economic and social fields, and that, with domestic and external liberalization, these countries become increasingly heterogeneous. These four clusters differ not only in terms of economic structures and engines of growth, but also in terms of the economic and social indicators listed in Table 5. Cluster 1 (manufacturing exporters) displays the best indicators in practically all areas: it has the highest GDP/c, lowest inequality, highest public spending (a possible proxy of institutional strength), best rule of law, highest LEB, and lowest mortality rates, old age dependency ratio and crime rates. Strangely enough, however, it has also the lowest growth rate of GDP over 2000-07 and the second lowest investment rate. In turn, cluster 3 (fuel-ores exporters) has the worst indicators in practically all areas but the highest investment and GDP growth rates. In view of all this, this section tests formally whether belonging to a given cluster affects economic performance (measured by the growth rate of GDP/c) and social performance (measured by LEB).

4.1 Country clusters and growth of GDP/c

Despite their limited progress in terms of economic and institutional reforms, and contrary to the expectations of most analysts (Åslund and Jenish 2006), from 2000 to 2007 the CIS countries (coinciding with clusters 3 and 4) recorded a faster growth than those of Eastern Europe (cluster 1). How can this growth paradox be explained? Why did growth lag behind in the fast reformers? More generally, what explains the growth performance of the countries of the region since 2000?

To answer this question, an 'eclectic growth regression' was estimated including among the explanatory variables four sets of factors: (a) the stock of production factors (broadly understood), i.e. the physical capital (computed by means of the permanent inventory method, i.e. summing up the investment/GDP ratios over the previous 8 years, and assuming an amortization rate of 12.5 per cent), public expenditure/GDP (a proxy of the stock of available public goods or, alternatively, a measure of labour supply disincentives) and the rule of law (a proxy of the stock of 'institutional capital');[13] (b) the initial level of development of each country (measured by the GDP/c of 1990-93). As suggested by Solow's unconditional convergence, countries with an initial lower level of development grow *ceteris paribus* faster than more advanced ones. This means that the countries of clusters 3 and 4 are expected ex ante to grow faster than those of cluster 1. However, Solow's unconditional convergence is expected to occur over the long-term (while the period analyzed here covers only eight years), suggesting ex-ante that this variable might be non significant; (c) since the period analyzed was preceded by a catastrophic, if varying, decline in GDP/c, a 'growth rebound effect' was also included among the regressors using as a proxy of this phenomenon the growth rate recorded during the difficult years of 1990-93. Thus, a possible explanation of the variation in growth rates over 2000-07 might be simply that GDP rebounded faster in the FSU countries which had recorded a much larger output contraction in the earlier part of the transition and could therefore count on greater unused capacity; (d) the diverging economic specialization of each country. Thus, four dummies variables were introduced, each of them identifying the four clusters identified in section 3. The dummies take value 1 if a country belongs to a given cluster and zero otherwise. This allows to test whether—in addition to growth factors, growth convergence, and growth rebound—the new economic specializations affected growth over 2000-07.

The regression was carried out on a panel of 25 countries and 8 years (from 2000 to 2007), for a total number of 200 observations, though lack of some data for some countries/years reduced the size of the panel to 168-193 observations, depending on the model tested (Table 9). The Haussmann test indicates that the random effect (RE) estimation procedure is the most suitable for this dataset, as this procedure is consistent with the use of time-invariant variables such as the average GDP/c over 1990-93, and the growth rate of GDP/c over the same period.

The results of model 1 (as well as 4, 5, 7 and 8, i.e., five specifications out of nine) suggest that there is a β-convergence, as poorer countries grow faster than the richer ones. Second, the 'growth rebound' effect is successfully tested in five specifications out of the eight in which such variable appears, though this is effect is always verified at

[13] The stock of human capital was not included as this variable shows little variation across the countries of the region.

a probability level of only 12-18 per cent. As for the standard growth variables the results show that: first, the proxy of the capital stock is always strongly significant (except in model 9 where the investment rate is interacted with the cluster dummies). Second, the government expenditure/GDP ratio is always significantly and negatively associated with the growth of GDP, suggesting that the disincentives effect of high taxation associated to high public expenditure prevails on the positive effects of public goods on growth. The parameters suggest that a rise of ten points in public expenditure/GDP reduced the rate of growth by 0.9-1.0 per cent. This may suggest not so much a negative effect of providing public goods (infrastructure, health, education) but rather the 'crowding out' effect that large income transfers may have on investment. This is only a mere supposition, and more detailed tests are needed to confirm it. Third, the parameter of the variable 'rule of law' is almost never significant, possibly because measurement errors do not permit it to proxy this phenomenon adequately.

Fourth and final, the introduction of cluster dummies (models 4 to 8) suggests that belonging to the cluster of oil-ores exporters raised in a statistically significant way the rate of growth of GDP/c by between 2.1 and 4.6 per cent a year in relation to the pivot cluster of the manufacturing exporters. This is a large effect which is at odds, however, with the theoretical literature which suggests that 'Dutch disease' and distributive distortions tend to reduce the long-term growth of commodity exporters. This result likely reflects the high world prices of metals and energy over 2000-07.

The results in Table 9 also show that belonging to the clusters of 'tertiarized-mixed economies' and 'aid-remittances recipient economies' worsen the rate of growth of GDP/c in relation to the group of 'manufacturing exporters', though this effects is small (0.5 to 2.9 per cent for the first group, and 0.3 to 1.5 per cent for the second, depending on the regression model considered) and statistically non significant. All in all, it appears that,after controlling for the usual growth factors, β-convergence, and growth rebound effects, divergence in economic specialization among originally fairly similar countries did affect growth performance over the medium term. The longer term effects are, however, not so clear as countries endowed with abundant natural resources rarely experience faster growth than countries with other types of specialization (Sachs and Warner 1997).

Table 9: RE-GLS regression results (dependent variable: growth rate of GDP/capita) 2000-07

Regressors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	**.0861****	**.0590***	.0173	.0347	.0177	.0989	**.0770****	.0231	**.1790***
1. GDP/c $_{1990-3}$	**-7.90 e-06****	-4.12 e-06	-5.75 e-06	**-9.09 e-06***	**-6.26 e-06***	-4.29 e-06	**-.00001***	**-6.53 e-06***	-5.24 e-06
2. G.r. GDP/c $_{1990-3}$		**-.1795*^^^**	**-.0731**	**-.1141*^^^**	**-.1566****	**-.1810***	**-.2316*****	-.1050	-.1043
3. Σ Investment/GDP (t-8)-t			**.0007*****	**.0006*****	**.0006*****	**……**	**…….**	**.0006*****	-.0004
4. Gov expenditure/GDP			**-.0010****	**-.0009***	**…….**	**-.0009***	**…….**	**-.0009***	**-.0010****
5. Rule of law (+)			-.0004	.0071	……	…….	**.0196***	…….	.0047
6. Dummy Manufactures exp.				Pivot	Pivot	Pivot	Pivot	Pivot	Pivot
7. Dummy Mixed economies				-.0093	-.0032	-.0116	-.0154	-.0052	**-.1524****
8. Dummy Fuel-ores exporters				.0218	**.0312****	**.0285*^^^**	**.0467****	.0204	**-.2108*****
9. Dummy Recipients aid-rem.				-.0164	-.0052	**-.0295*^**	-.0215	-.0135	**-.1246***
15.Dummy7 * invest/GDP									**.0010****
16. Dummy8 * invest/GDP									**.0017*****
17.Dummy 9 * invest/GDP									**.0007*^^^**
R2	.084	.164	.364	.435	.408	.328	.370	.409	.481
N. of observations	193	193	168	168	192	193	169	192	168
N. countries in panel	25	25	24	24	24	25	25	24	24

Notes: ***, **, *, *^, *^^ indicates that the parameters are not significantly different from zero at the 1%, 5%, 10%, 14%, and 18% probability level.
Source: author's calculations.

4.2 Country clusters and changes in LEB

A second test was carried out to ascertain whether the divergence in economic specialization observed since 2000 affected human wellbeing, proxied here by LEB. As, *ceteris paribus*, GDP/c affects favorably LEB in middle income economies, one would expect that the oil-ores exporters performed better also in this area during the last decade. The opposite should be true for the countries of the clusters of mixed-teritarized economies and aid-remittances dependent countries, as the parameters of their dummies (Table 9) suggested that belonging to these groups had a negative effect on the growth of GDP/c.

To test these hypotheses a 'basic LEB regression' was carried out including several of the standard regressors, i.e. log GDP/c, year-to-year changes in the level of the Gini coefficient of the distribution of household income, public health expenditure/GDP, enrolment rates in secondary education[14] (a proxy of the human capital and health knowledge of the families), and child dependency ratio (which is expected to affect negatively LEB). In addition, the four cluster dummies mentioned above were also introduced, while, as an alternative, the dummies were replaced by the yearly values of the clustering variables, i.e. net exports of manufactured products/GDP (CLV1), the share of 'other services on GDP' (CLV2), net exports of fuel and ores/GDP (CLV3), and aid plus inward remittances/GDP (CLV4). These variables allow to test whether belonging to a given cluster improves or worsens the LEB of a country, suggesting in this way whether, ceteris paribus, the recent shifts in economic specialization affected its health status.

The regression results in Table 10 confirm the positive and statistically significant relation between LEB and log GDP/c. They also suggest a weakly significant but important negative relation between LEB and rises in the Gini coefficient of income inequality. In turn, public health expenditure/GDP affects favorably LEB in the basic model, but becomes statistically non significant when introducing the cluster dummies (models 2 to 5) or the clustering variables CLV1 to CLV4 (model 6). The enrolment rate in upper secondary education does not appear significant, possibly for the reasons given in footnote 14, while the child dependency ratio has the expected negative sign (models 4 and 5) but is not significantly different from zero, and becomes inexplicably positive and significant in model 6, contrary to ex-ante expectations.

The above variables were mainly introduced as controls, and the main objective of the test was to assess the impact of diverging economic specialization on LEB, which is used in this study as an overall proxy of human wellbeing. In this regard, the results of Table 10 show unambiguously that, despite a better growth performance, belonging to the cluster of oil-ores exporters entails a cost in terms of lower LEB of 4.2-4.6 years in relation to the pivot cluster of manufacturing exports. In turn, belonging to the cluster of

[14] The appropriate variable to proxy the level of education and health knowledge of households should be the level of education of adult women, but this variable was not readily available. However, as the stock of education in the region is distributed very equally, improvements in health scores are evident only for those who completed tertiary education. This information, however, is readily available in the Transmonee database only until 2005 and, furthermore, these data suffer from comparability problems. This is why it was decided to use instead data on upper-secondary enrolments.

the mixed economies entails no change in LEB in relation to the pivot cluster, while belonging to that of aid and remittances dependent countries entails a statistically non significant but positive advantage of 0.5-1.3 years. Finally, the regression using the yearly values of the clustering variables (CLV) instead of the cluster dummies (model 6) broadly confirms the results just mentioned, i.e. that the oil-ores exporters experienced over 2000-7 a significant disadvantage in LEB, that the manufacturing exporters experienced in contrast a positive advantage, with no significant effects for the other two clusters.

Table 10: RE-GLS regression results, dependent variable: LEB, 2000-07

Regressor	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	**53.7*** **	**54.4*** **	**56.1*** **	**56.3*** **	**56.1*** **	**50.0*** **
1. Log GDP/c	**2.01*** **	**2.11*** **	**2.12*** **	**2.10*** **	**2.09*** **	**2.24*** **
2. Δ Gini 2000-7	**-.0587*^^**	**-.0595*^^**	**-.0590*^^**	**-.0589*^^**	**-.0579*^^**	**-.0680*^^**
3. Public health Exp/GDP	**.485*^^**	.0654	…..	…..	.0100	.441
4. Enrolm. rate in upper 2ary		…….	-.0167	…..	-0.124	-.0059
5. Child dependency ratio		…….	…….	-0.332	-.0159	**.0739** **
6. DummyC1 (manuf export)		Pivot	Pivot	Pivot	Pivot	…..
7. DummyC2(mixed econ)		.0654	-0.063	-.0386	.0468	…..
8. DummyC3 (oil-ores exp)		**-4.63*** **	**-4.59*** **	**-4.61*** **	**-4.19** **	**…..**
9. DummyC4 (aid+remittan)		1.067	.578	1.317	1.171	…..
10. CV 1 (manuf exp)/GDP						**.0264***
11. CV 2 (mixed econ)/GDP						.0119
12. CV 3 (oil-ores exp)/GDP						**-.0297***
13. CV 4 (aid –remitt)/GDP						.0020
R2	0.560	0.796	0.793	0.782	0.791	0.642
N. of obs.	135	134	134	134	134	134
Number of countries in panel	25	24	24	24	24	24

Notes: ***, **, *, *^, *^^ indicates that the parameters are not significantly different from zero at the 1%, 5%, 10%, 14%, and 18% probability level.

Source: author's calculations.

5 Concluding remarks

This study has argued that—contrary to the trends observed during the 45 years of socialist rule (or at least of the first 30)—transitional recession and economic and political liberalization in the EE-FSU have lead to a marked cross-country divergence in practically all economic, social and political dimensions. Limited re-convergence or hysteresis was instead observed during the years of the widespread recovery of the 2000s. As a result, the countries of the region constitute now a far more heterogeneous group than twenty years ago. The study has also shown that with the internal and external liberalization of the last twenty years, four main country clusters have emerged, with similar economic structures and growth drivers within each clusters, but with major differences across clusters. Subsequent regression analysis points to unexpected

results. Indeed, after controlling for a host or relevant factors, the cluster with the fastest growth is not the one which recorded the fastest progress in reforming its institutions or with the lowest initial GDP/c but that of oil-ores exporters. This trend has been observed, however, over a relatively short period of time, while economic theory suggests that primary commodity exporters generally grow more slowly over the long term than other types of economies. In addition, the better economic performance of this cluster was accompanied by a statistically loss of over four years of LEB in relation to the countries specialized in the export of manufactured goods.

References

Åslund, A., and N. Jenish (2006). 'The Eurasian Growth Paradox'. *Institute of International Economics Working Paper* No. 06-5, Institute of International Economics: Washington DC:

Blanchard, O., and M. Kramer (1997). 'Disorganization'. *Quarterly Journal of Economics*, 112(4): 1091-126.

Cornia, G.A., and V. Popov (2001). '*Transition and Institutions*'. Oxford University Press: Oxford.

Cornia, G.A., and S. Danziger (1997). '*Child Poverty and Deprivation in Industrialized Countries: 1945-1995*'. Oxford: Clarendon Press.

Estrin, S., G. Urga, and S. Lazarova (2001). 'Testing for Ongoing Convergence in Transition Economies: Central and Eastern Europe, 1970-1998'. *Journal of Comparative Economics*, 29(4): 677-91.

IMF (2005). 'Globalization and External Imbalances'. *World Economic Outlook*, April. IMF: Washington DC.

Landesmann, M. (2000). 'Structural change in the transition economies, 1989-1999'. *Vienna Institute for International Economic Studies Research Report* No. 269, Vienna Institute for International Economic Studies: Vienna.

Matkowski, Z., and Mariusz Prochniak (2006). 'Real Economic Convergence in the EU Accession Countries'. Paper presented to the 9th Bi-annual Conference of EACES, www.bus.bton.ac.uk/eaces/papers/5e3.pdf.

Popov, V. (2005). 'Shock Therapy Versus Gradualism Reconsidered'. *CEFIR/New Economic School Working Paper* No. 68, New Economic School: Moscow.

Roland, G. (2000). '*Transition and Economics: Politics, Markets and Firms*'. MIT Press: Cambridge MA.

Sachs, J., and A. Warner (1997). 'Natural Resource Abundance and Economic Growth'. Centre for International Development and Harvard Institute for International Development, www.cid.harvard.edu/ciddata/warner_files/natresf5.pdf.

World Bank (1996). 'From Plan to Market'. *World Development Report*. World Bank: Washington DC.

Zakaria, F. (1997). 'The Rise of Illiberal Democracies'. *Foreign Affairs*, 76(6): 22-43.