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**Working Paper**

## The impact of the global financial crisis on public expenditures on education and health in the economies of the former Soviet Union

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# CASE Network Reports

## The Impact of the Global Financial Crisis on Public Expenditures on Education and Health in the Economies of the Former Soviet Union

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## **Abbreviations**

AIDS	Acquired Immune Deficiency Syndrome
BSc	Bachelor of Science
CA	Central Asian countries
CCA	Caucasus and Central Asia
CEE	Central and Eastern Europe
CIS	Commonwealth of Independent States
EC	European Commission
ECA	Europe and Central Asia
EU15	EU members before 2004 enlargement
EU NMS	New Member States of the European Union
FR	Fertility rate
FSU	Former Soviet Union
GDP	Gross Domestic Product
GER	Gross enrolment ratios
GG	General government
GNI	Gross National Income
HALE	Healthy life expectancy at birth
HEI	Higher education establishment
HFA-DB	WHO's European health for all database
IMF	International Monetary Fund
IMF GFS	IMF's Government Finance Statistics online database
ISCED	International Standard Classification of Education
LB	Local budgets
LCU	Local currency unit
MHI	Mandatory health insurance
MS	Master of Science
n/a	Non-available
NER	Net Enrolment Ratio
OECD	Organization for Economic Cooperation and Development
PHE	Public health expenditure
PIRLS	Progress in International Reading Literacy Study
PISA	Program for International Student Assessment



PPP	Purchasing power parity
PSF	Per student financing
PTR	Pupil-teacher ratio
PVE	Primary vocational education
PvtHE	Private health expenditure
RB	Republican budget
SDR	Standardized death rate
SEE	South-Eastern Europe
TB	Tuberculosis
TIMSS	Trends in International Mathematics and Science Study
U5MR	Under five mortality rate
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPE	Universal primary education
USD	US dollar
VET	Vocational education and training
WDI	World Development Indicators
WHO	World Health Organization
Yoy	Year-Over-Year

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## **Abstract**

This paper provides an overview of public expenditures on education and healthcare in Belarus, Georgia, Kyrgyzstan, Moldova, Russia, Ukraine and some other countries of the former Soviet Union before and during the global financial crisis. Before the crisis, the governments of these countries were substantially increasing spending on education and health. The crisis adversely affected the FSU countries and worsened their fiscal situation. The analysis indicates that during the crisis, despite the fiscal constraints, public education and health expenditures have mostly been maintained or increased in almost all of these countries. However, the crisis situation was not taken as an opportunity to address these countries' key education and healthcare problems related to demographic changes, insufficient per capita expenditure levels, the low efficiency of public spending and the insufficient quality of services. These issues form an ambitious reform agenda for these countries in the medium- and long-term.

# 1. Introduction

This paper has been prepared in the framework of the project “The Impact of the Global Financial Crisis on Public Service Delivery in the Economies of the Former Soviet Union,” which is supported by the Local Government and Public Service Reform Initiative of the Open Society Institute. This project aims to analyze the attitude of the governments in the countries the former Soviet Union (FSU) towards financing key public services in education and health under the conditions of the global economic crisis. The project covers six FSU countries: Belarus, Georgia, Kyrgyzstan, Moldova, Russia, and Ukraine. For each of these countries, a separate report has been prepared by the project team. In addition to the six country reports, this paper provides a regional overview of common trends and country-specific factors influencing the general economic and fiscal situation and the performance of the education and health sectors in these countries. Where relevant and possible (from the point of view of data availability), this overview also covers some other FSU countries.

The financial crisis strongly affected the FSU region in 2008-2009, during which it experienced either a recession or a considerable slowdown in growth. The crisis also adversely affected government budget revenues, so governments had to adjust their expenditures to falling revenues. Under such conditions, public expenditures on education and health could have suffered unavoidable cuts. Whether or not this actually happened is the central question this project aims to answer.

All seven papers prepared under this project have a similar structure and are based on the same methodological approach. This approach implies a comparison of absolute and relative indicators of public education and health financing in the countries before and during the global economic crisis. For the purposes of this study, 2008 is considered the last pre-crisis year, and 2009 is the year when the crisis was felt in all countries of the region (see more on the definition of pre-crisis and crisis periods in Chapter 2). The changes in the political, economic and social environment affecting public finance in the country, even if unrelated to the crisis, have also been taken into account in order to identify the net impact of the crisis. The issues of the quality of education and health services and service delivery efficiency are also addressed in the paper.

In order to avoid incomparability of data, we use statistical information provided by international organizations such as the IMF, World Bank, UN Population

Division, WHO, UNESCO etc. In some cases, when data from these sources were incomplete or inconsistent, data from national statistical offices or country-specific publications such as the IMF country reports were also used. All data presented in the report are up-to-date as of mid-April 2011.

The authors would like to express their gratitude to Haik Zakrzewski, who provided administrative and logistical support in the implementation of this project at CASE, and Paulina Szyrmer, who copy-edited the final version of this study.

The paper has the following structure: Section 2 discusses the general economic and fiscal situation in the analyzed countries in the pre-crisis period and during the crisis. Section 3 provides an analysis of education system financing before and during the crisis and Section 4 looks at the developments in health financing. Section 5 summarizes key findings of the paper and discusses the policy implications of the analysis.

## **2. Fiscal Situation**

The main purpose of this chapter is to provide a comparative perspective of the macro-fiscal situations in the six FSU countries studied: Belarus, Georgia, Kyrgyzstan, Moldova, Russia and Ukraine, in order to determine the fiscal space for government spending on education and healthcare. Additionally, we consider some institutional, demographic, structural and other important characteristics of the analyzed region, which may influence the main subject of our analysis.

### **2.1. Basic characteristics of the region**

The analyzed countries represent both common and specific characteristics which are, on the one hand, a result of their common Soviet heritage, and, on the other, a matter of cultural, religious, geographical and other differences. In this section, income, demographic, institutional and some other characteristics of the analyzed countries are used as benchmarks for further analysis.

#### **2.1.1. Institutional characteristics and the transition progress**

All analyzed countries are former Soviet republics, i.e. their “market memory” is more or less the same: all of them except Moldova spent more than 70 years under a central planning system<sup>1</sup>. All of them gained/ regained independence in 1991–1992; however, Russia as the successor and dominant republic of the former USSR, can be treated as being independent in the Soviet period.

The deficit of “market memory” and the relatively fresh independence experience has influenced the speed of transition in all of these countries, especially in the 1990s. As of the end of 2010, the transition progress in most of these countries looked quite similar: the average in terms of EBRD transition indicators was around 3 for all countries except Belarus (its average ratio was less than 2+). However, the recent record of structural reforms in the region was quite limited:

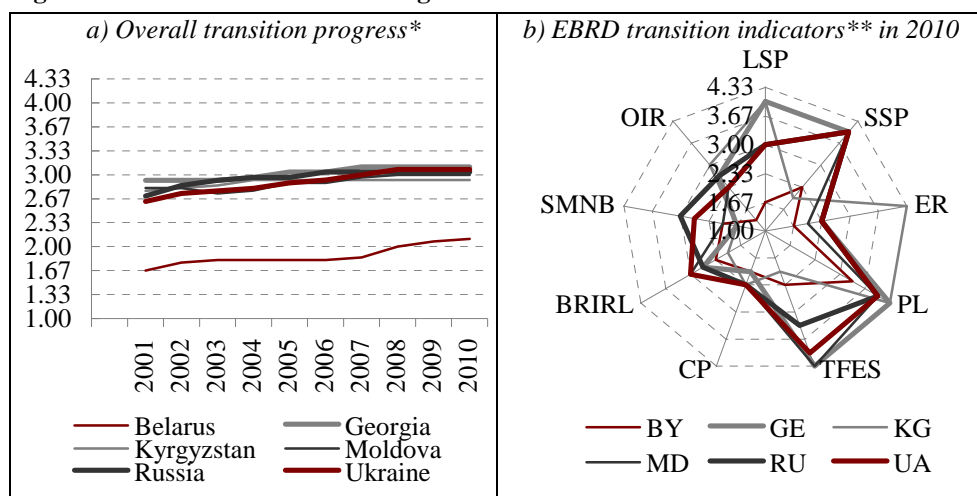
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<sup>1</sup> Moldova spent 51 years; based on De Melo et al. (1997).

according to the EBRD, Belarus was the only country that continued reforms in 2000s. Its rating increased in 2007-2010, while the scores of other countries remained unchanged (Kyrgyzstan – since 2004, Russia – since 2006, Georgia and Moldova – since 2007, Ukraine – since 2008) (see Figure 2.1a).

Among the analyzed countries, Russia implemented the most comprehensive reforms: its EBRD scores for 9 transition indicators vary from 2+ to 4, and the standard deviation for these indicators in 2010 was about 0.63. Ukraine has similar characteristics, while other countries have some values with a score of 2 or even 2-. Overall, all countries except Belarus succeeded in privatization (both large- and small-scale), price and foreign trade/exchange liberalization, while other components of their economic systems require further reforms (see Figure 2.1b).

**Figure 2.1. Economic Transition Progress**



\* Simple average of 9 EBRD transition indicators (ranging from 1 – analogue of planned economy – to 4+ (4.33) – “standards and performance typical of advanced industrial economies”).

\*\* LSP – large scale privatization; SSP – small scale privatization; ER – enterprise restructuring; PL – price liberalization; TFES – trade & forex system; CP – competition policy; BRIRL – banking reform & interest rate liberalization; SMNB – securities markets & non-bank financial institutions; OIR – overall infrastructure reform.

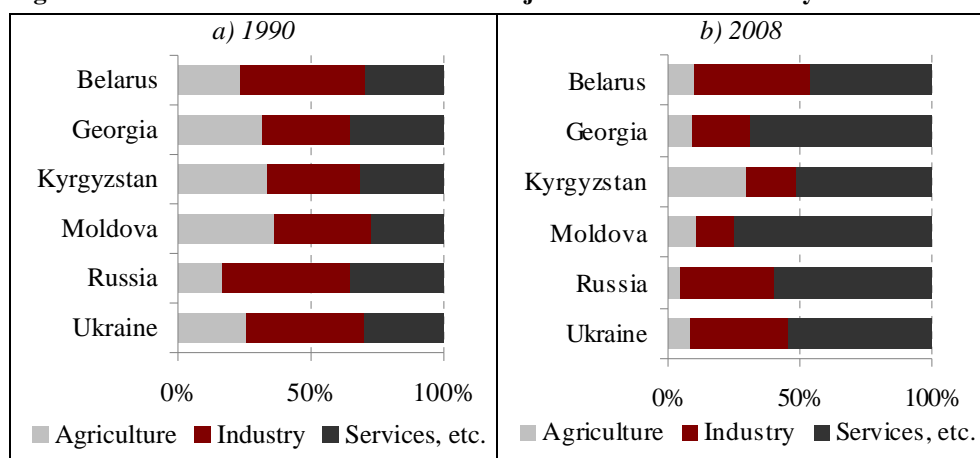
Source: own estimates based on the data from the EBRD Transition Indicators Database.

Another measure of economic transition – change of economic structure – shows more similarities than differences among countries. For example, the share of the services sector compared to the last year of the Soviet period increased everywhere. However, deindustrialization did not happen in the case of Belarus, and the share of the agricultural sector in Kyrgyzstan was reduced only slightly (see Figure 2.2).



These differences reflect some country-specific features, such as minimal progress in large-scale privatization in Belarus (which inherited many large industrial enterprises from the Soviet era which remain in government hands and continue ineffective production processes) and large labor migration and inflows of remittances in Moldova and Kyrgyzstan (which are spent largely on domestic services).

**Figure 2.2. GDP structure: Value added in major sectors of the economy**



Source: WDI-GDF database.

**Table 2.1. Ease of doing business rankings**

	Belarus	Georgia	Kyrgyzstan	Moldova	Russia	Ukraine
<b>Old classification</b>						
2005 (DB 2007) – 175*	124	112	104	88	97	132
2006 (DB 2007) – 175	129	37	90	103	96	128
2007 (DB 2009) – 181	115	21	99	92	106	144
2008 (DB 2010) – 183	82	16	80	108	112	146
2009 (DB 2010) – 183	58	11	41	94	120	142
change, 2005-09	66	101	63	-6	-23	-10
change, 2008-09	24	5	39	14	-8	4
<b>New classification</b>						
2009 (DB 2011)	64	13	47	87	116	147
2010 (DB 2011) – 183	68	12	44	90	123	145
change, 2009-10	-4	1	3	-3	-7	2

\* Total number of countries.

Source: Doing Business database and reports.

Structural changes in the region did not necessarily coincide with an improvement in the business climate. The yearly “Doing Business” report, a joint ranking

produced by the World Bank and IFC, allows for a comparison of the business climate in the analyzed countries from the point of view of formal procedures and regulations. Georgia is the only country ranked among the top-20 countries of the world; additionally, it is one of the fastest reformers in the region (see Table 2.1) and in the world as a whole. Other fast reformers, Belarus and Kyrgyzstan, are not yet among the global leaders, while doing business in the remaining three countries, Moldova, Russia and Ukraine, became more difficult during the analyzed period.

### **2.1.2. Income and poverty**

In terms of per capita income, the region includes countries in low, lower-middle and upper-middle income groups (according to World Bank Atlas Method). In 2009, the gap between the poorest (Kyrgyzstan) and richest (Russia) economies exceeded 90% (i.e. Kyrgyz per capita GNI amounted to 10% of that in Russia). PPP-based poverty headcount ratios (USD 2 a day) also differ among the countries of the region: according to this indicator, Belarus, Russia and Ukraine are free or almost free of extreme poverty, while others have significant (up to 1/3 of population) shares of poor people defined according to this poverty line. The reasons behind higher or lower poverty rates are also different: the low poverty rate in Russia is caused by a relatively high average income, while in Belarus and Ukraine, income redistribution plays an important role. High poverty rates in Kyrgyzstan originated mainly from its low average income, while those in Georgia and Moldova can largely be explained by high levels of inequality (the abovementioned indicators are summarized in Table 2.2).

**Table 2.2. Selected income, poverty and inequality indicators**

	<b>Belarus</b>	<b>Georgia</b>	<b>Kyrgyzstan</b>	<b>Moldova</b>	<b>Russia</b>	<b>Ukraine</b>
Income group (Atlas Method) <sup>1</sup>	Upper middle	Lower middle	Low	Lower middle	Upper middle	Lower middle
GDP per capita, current international USD	12741	4765	2269	2853	14927	6347
Poverty headcount ratio at USD 2 a day (PPP) (% of population) <sup>2</sup>	0.0	32.6	29.4	12.5	0.1	0.5
Income share held by lowest 20% <sup>3</sup>	9.2	5.3	8.8	6.8	6.0	9.4
Gini index <sup>3</sup>	27.2	41.3	33.4	38.0	42.3	27.5

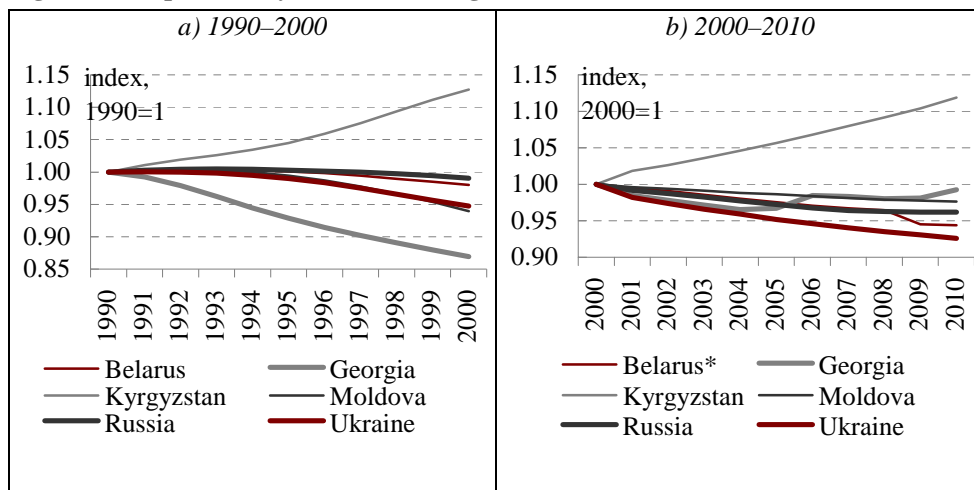
<sup>1</sup> Data for 2009; <sup>2</sup> data for 2008 except Kyrgyzstan (2007) and Ukraine (2005); <sup>3</sup> data for 2008 except Kyrgyzstan (2007).

Source: WDI-GDF database WEO database (April 2011).

### 2.1.3. Demographic background

Five countries in the region (except Kyrgyzstan<sup>2</sup>) represent similar demographic trends: a declining population, a rapid rate of aging, and low fertility rates. However, if one splits the transition period into two decades, more differences appear. First, the population of Georgia has started to recover: at the end of the last decade, it had almost the same population as at the beginning of the decade. In Russia and Moldova, population decline appears to be stopping and has even turned into a slow growth in Russia. Meanwhile, the populations of Belarus and Ukraine continue to shrink. Moreover, the average annual rates of its decline have increased compared to the previous decade (see Figure 2.3b). Only Kyrgyzstan has continued to grow, with approximately the same rate as in the first transition decade.

**Figure 2.3. Population dynamics in the region in the last two decades**



Note: data is presented as of the beginning of period.

\* In 2009, Belarus conducted a population census, but the data for 2001 – 2008 has not been revised yet.

Sources: (a) World Population Prospects: The 2008 Revision Population Database; (b) IMF WEO Database, October 2010 (data for the beginning of 2010 was taken from national statistical offices).

Decreased fertility seems to be one of the main reasons for population decline: it fell from about 2.1 at the end of the 1980s/beginning of the 1990s to about 1.3 –

<sup>2</sup> The dominant religion may be one of the possible explanations of this phenomenon: Kyrgyzstan is the only country from the analyzed region where Islam is the religion of the vast majority of the population.

1.6 in 2005–2010. Kyrgyzstan also faced a decrease in fertility, but it remained higher than is required for simple reproduction (about 2.6 in 2005–2010). As a result, the share of children in all countries fell dramatically (see Table 2.3). The “Baby-boomers” of the late 1980s/early 1990s are now in the 15–24 age cohort, creating additional demand for post-secondary and tertiary education. At the same time, the share of the elderly population increased (except in Kyrgyzstan), but quite moderately. According to UN forecasts, in the next two decades all of these countries will face a significant increase of the share of the elderly, together with a slow replacement of the working-age group, which will increase economic pressure on the working-age group. Additionally, it is expected that the share of children will remain more or less stable (again, with the exception of Kyrgyzstan), while the share of cohorts in education age will decrease significantly.

**Table 2.3. Selected age groups, % of population**

	Age 0-14			Age 15-24, share			Age 65+, share		
	1990	2010	2030	1990	2010	2030	1990	2010	2030
Belarus	23.1	14.7	13.5	13.8	14.7	10.9	10.6	13.4	19.5
Georgia	24.6	16.7	15.9	15.0	16.2	12.1	9.3	14.3	20.8
Kyrgyzstan	37.6	29.1	22.5	18.1	20.8	17.0	5.0	5.0	9.1
Moldova	27.9	16.6	16.3	14.5	18.0	12.4	8.3	11.1	17.9
Russia	23.0	15.0	15.2	13.3	14.4	11.9	10.1	12.9	19.4
Ukraine	21.5	13.9	15.2	13.6	14.0	11.4	12.1	15.6	20.1

*Source:* own estimates based on the data from World Population Prospects: The 2008 Revised Population Database.

Migration (permanent and temporary) creates additional pressures on the working-age population in four countries of the region: Georgia, Moldova, Belarus and Kyrgyzstan (see Table 2.4). Although good comparable data on temporary labor migration is not available, some indirect evidence can be obtained from remittances data. According to balance-of-payments data from 2008, migrants’ transfers amounted to 31.3% of GDP in Moldova and 24% in Kyrgyzstan, while the International Fund for Agricultural Development (IFAD) estimated them at 31.4% of GDP in both countries in 2006. Other economies of the region also benefit from remittances (see Table 2.4).

In terms of urbanization, the region also demonstrates some diversity. Belarus and Russia are highly urbanized countries and the share of their rural populations is only about 26%, followed by Ukraine (about 30%), Georgia and Moldova (about 50%) and the more rural Kyrgyzstan (65%). According to the data of UN

Population Division<sup>3</sup>, during the last decade, the rural population shrank fastest in Belarus, followed by Moldova and Ukraine, while Kyrgyzstan and Russia kept their shares almost unchanged. However, according to its forecast, during the next decade, urbanization will speed up in all countries of the region, with Moldova as the leader. Overall, the UN Population Division expects that the share of rural populations in the region will fall by 3.2 percentage points (simple average) during the decade of 2010–2020.

**Table 2.4. Selected migration and remittances indicators**

	Migration stock as a % of population in 2010 <sup>4</sup>			Inward remittances flow, % of GDP	
	Emigrants	Immigrants	Difference	2008*	2006**
Belarus	18.6	11.4	7.2	0.7	6.3
Georgia	25.1	4.0	21.1	5.7	20.2
Kyrgyzstan	11.2	4.0	7.2	24.0	31.4
Moldova	21.5	11.4	10.1	31.3	31.4
Russia	7.9	8.7	-0.8	0.4	1.4
Ukraine	14.4	11.6	2.8	3.2	8.0

\* Based on the Balance of Payments methodology; Data on the compensation of employees for Kyrgyzstan and on workers' remittances for Belarus is not available. The total inward flow of remittances in Kyrgyzstan is estimated at 28.6% of GDP (see Mogilevsky (2011) for details).

\*\* Total inward remittances, IFAD estimates.

Source: World Bank (2011); own estimates based on World Bank (2011) and WEO (April 2011) database.

## 2.2. Pre-crisis fiscal developments

### 2.2.1. Defining the beginning of the crisis

The quarterly dynamics of GDP growth (Figure 2.4) indicate that the crisis started in the fourth quarter of 2008 or the first quarter of 2009 in all countries of the region. Georgia's economy started to contract in the third quarter of 2008 as a result of the Russia-Georgia armed conflict in August of 2008. Belarusian official statistics recorded a GDP decline only in the second quarter of 2009. But first quarter growth (1.1% yoy) was largely due to increased inventories and thus the

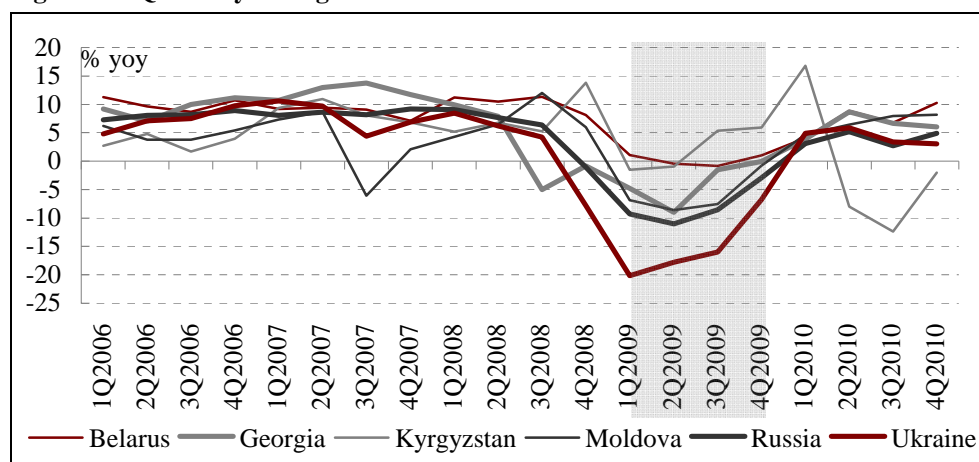
<sup>3</sup> World Urbanization Prospects: The 2009 Revision.

<sup>4</sup> The World Bank has been estimating migrants stock since 1970.

first quarter can still be considered the first quarter of the recession. The recession continued until the end of 2009 (Belarus showed a small growth in the fourth quarter of 2009; Kyrgyzstan started to grow in the third quarter of 2009<sup>5</sup>).

Pre-crisis growth in the analyzed countries lasted from 9 to 14 years, depending on the time of exit from post-communist adaptation output decline. Georgia, Belarus, and Kyrgyzstan started to grow in the middle of the 1990s. They continued growing during the financial crisis of the late 1990s but this did not mean they were not affected by that crisis. Steady recovery in Russia, Moldova and Ukraine started around 2000. In order to have a common period of analysis for the study, the years of 2000–2008 are considered the pre-crisis period, 2009 is considered the crisis year, and 2010 is the year when recovery began.

**Figure 2.4. Quarterly GDP growth rates**



Sources: IFS Database, national statistical offices.

### 2.2.2. General economic environment

On average, during the pre-crisis period (between 2000 and 2008), the real GDP growth rate in the region amounted to 7% per annum – 3 percentage points more than the world average. In the pre-crisis 2008, most countries of the region grew faster than the world economy or economies of the CEE (see Table 2.5), with the exception of Georgia (for the reasons described above) and Ukraine, where a high reliance on private external borrowing caused an earlier beginning of the recession.

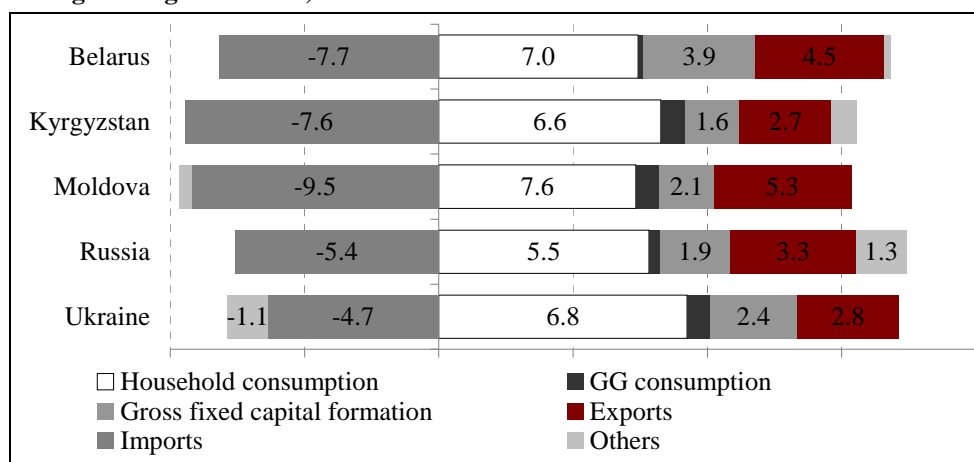
<sup>5</sup> The later recession in Kyrgyzstan (second half of 2010) was caused by the political tensions of April and June of 2010, see Mogilevsky (2011) for details.

**Table 2.5. Real GDP growth rates, % yoy**

	2007	2008	2009	2010
World	5.4	2.9	-0.5	5.0
Major advanced economies (G7)	2.2	-0.2	-3.7	2.8
Euro area	2.9	0.4	-4.1	1.7
Central and Eastern Europe	5.5	3.2	-3.6	4.2
FSU	9.0	5.3	-6.4	4.6
Belarus	8.6	10.2	0.2	7.6
Georgia	12.3	2.4	-3.8	6.4
Kyrgyz Republic	8.5	7.6	2.9	-1.4
Moldova	3.0	7.8	-6.0	6.9
Russia	8.5	5.2	-7.8	4.0
Ukraine	7.9	1.9	-14.8	4.2

Source: WEO database (April 2011).

Rapid economic growth in all countries<sup>6</sup> was driven by consumption and exports (see Figure 2.5), although the contribution of investment in some cases (Belarus) was also substantial. In its turn, consumption was fueled mainly by an increase in wages/social transfers (like in Belarus, Georgia, Russia or Ukraine) and/or a significant inflow of migrant remittances (Moldova and Kyrgyzstan). Fast growth in Russia supported the exports of other countries in the region (except Georgia, which largely benefited from growth in other oil-exporting countries).

**Figure 2.5. Contributions to GDP growth in 2000–2008 (percentage points from annual average GDP growth rates)**

Source: own estimates based on the data from WDI-GDF database.

<sup>6</sup> There is no data on aggregate demand real growth rates available for Georgia, either from national statistics or international databases.

Among country-specific factors, one can point to the improvements in business environment and governance achieved by President Saakashvili's administration in Georgia. These reforms ensured FDI inflow, the development of domestic business, and increased tax collection, which allowed the government to increase social transfers<sup>7</sup>. For a long time, Belarus benefited from a Customs Union with Russia and lower prices on imported Russian oil and gas. This allowed the authorities to boost investment (mainly construction) and increase the population's incomes. Kyrgyzstan reaped the fruits of re-exporting Chinese goods to Russia and other countries of the region and from a significant inflow of labor migrant remittances (as did Moldova). In Ukraine, the political cycle influenced economic performance significantly, as on the eve of several big political events (presidential, parliamentary and local elections), the authorities pushed wages and social transfers up (since 2004, wages had been growing faster than labor productivity). Also, in the first years after the Orange Revolution, Ukraine faced increased FDI inflow, but later populist policies worsened the business climate in the country. Finally, Russian growth was led mainly by increasing exports of natural resources and a redistribution of part of the oil revenues.

### **2.2.3. Pre-crisis fiscal performance**

In the period of rapid pre-crisis growth, general government (GG) revenues grew even faster than GDP: between 2005 and 2008, Georgia led with a 58.2% revenues increase in real terms<sup>8</sup> (real GDP went up by 25.9%), while Moldova and Ukraine experienced “slow” growth of about 22–25% (accompanied by a GDP growth of 16–18%). Russia was the only country in which, according to WEO data, the tax burden fell, as real GDP grew faster than real GG revenues. In the other countries, the tax burden (measured as the share of GG revenues in GDP) increased for this period by 3.8% of GDP (simple average). Government size before the crisis varied from a relatively low 30% of GDP in Georgia and Kyrgyzstan, through a moderate 40–44% in Moldova, Russia and Ukraine to a high 50% in Belarus (see Table 2.6).

However, the reasons for this rapid revenue increase differed significantly across the countries. Belarus benefited from windfall profits from refining Russian oil (as it was exempted from Russia's export duty) and from an increase in its own

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<sup>7</sup> However, social spending in Georgia remained low, as the significant increase started from a very low base.

<sup>8</sup> Hereinafter: deflated by GDP deflator.



export duties. Georgia implemented a successful tax reform<sup>9</sup> and from the increased inflow of grants from international organizations and foreign governments. Moldova and Ukraine faced increased indirect tax revenues thanks to the rapid growth of consumption accompanied by better collection of these taxes. In Kyrgyzstan, one of the major reasons for revenue increase was the increase in tax collections due to the very rapid growth of taxes on imports (financed by remittances and other inflows) and some improvement in collection of direct taxes (grants from international organizations were another growing revenue source). Finally, according to the GFS data, Russian general government revenues grew thanks to “miscellaneous and unidentified revenue<sup>10</sup>” and “voluntary transfers other than grants”<sup>11</sup>, while revenues from energy exports and other main sources grew at more or less the same rate as GDP.

**Table 2.6. Size of the general government (% of GDP)**

		2005	2006	2007	2008	2009
Belarus	Revenues	47.4	49.1	49.5	50.6	45.7
	Expenditures	47.2	47.4	47.2	47.2	46.1
	Balance	0.2	1.7	2.3	3.4	-0.4
Georgia	Revenues	24.4	26.7	29.3	30.7	29.3
	Expenditures	22.2	23.3	28.4	32.7	35.8
	Balance	2.2	3.4	0.8	-2.0	-6.5
Kyrgyzstan	Revenues	24.7	26.4	30.3	29.9	32.3
	Expenditures	28.5	29.1	31.0	28.9	33.4
	Balance	-3.8	-2.7	-0.6	1.0	-1.1
Moldova	Revenues	38.6	39.9	41.7	40.6	38.9
	Expenditures	37.0	39.8	42.0	41.6	45.2
	Balance	1.5	0.0	-0.2	-1.0	-6.3

<sup>9</sup> Tax reform was implemented in 2005: total number of taxes was reduced from 22 to 6, their rates were also changed. Tax code change was supported by governance reform that allowed increasing transparency and decreasing corruption, creating additional incentives to reduction of informal activity (see Labadze et al. (2011) for details). According to the estimates of Schneider, Buehn and Montenegro (2010), in 2007 (1.5 years after tax reform) the level of informality, although fell by 3% of GDP (see Table 2.7), remained one of the highest in the world.

<sup>10</sup> GFS manual defines this line as ‘items that might appear here are sales of used military and other goods that were not classified as assets, sales of scrap, non-life insurance claims against insurance corporations, non-life insurance premiums of government-operated insurance schemes, payments received for damage to government property other than payments from a judicial process, and any revenues for which adequate information is not available to permit their classification elsewhere’.

<sup>11</sup> According to the GFS manual, ‘this category includes gifts and voluntary donations from individuals, private nonprofit institutions, nongovernmental foundations, corporations, and any other source other than governments and international organizations’.

		2005	2006	2007	2008	2009
Russia	Revenues	41.0	39.5	39.9	39.2	35.1
	Expenditures	32.8	31.1	33.1	34.3	41.4
	Balance	8.2	8.3	6.8	4.9	-6.3
Ukraine	Revenues	41.8	43.2	41.8	44.3	42.2
	Expenditures	44.1	44.6	43.8	47.4	48.5
	Balance	-2.3	-1.4	-2.0	-3.2	-6.2

Source: WEO (April 2011) database.

Increases in revenues accompanied by fast GDP growth and the appreciation of local currencies against the USD allowed for a significant reduction of gross GG debt in all countries but Ukraine<sup>12</sup>: between 2005 and 2008, GG fell by 6.5% of GDP in Georgia and Russia, by 10% of GDP in Belarus, 16% of GDP in Moldova and by 37.5% of GDP in Kyrgyzstan (Ukrainian debt went up by 3% of GDP)<sup>13</sup>.

Evidently, the fast growth of revenues allowed for increasing expenditures; however, expenditure growth was slower than revenues growth in Belarus and Kyrgyzstan; in other countries expenditures grew faster than revenues. As a result, before the crisis, these two countries faced a fiscal surplus, while the others accumulated moderate deficits (except Russia, but its surplus was reduced by half for that period).

The increase in expenditures was accompanied by changes in their structure, which was also country-specific. Belarus and Ukraine mostly increased expenditures on economic affairs. Belarus decreased (in relation to GDP) the outlays for general public services, education and social protection<sup>14</sup>. Russia drastically expanded spending on general public services, while Georgia significantly increased financing on defense and public order and safety<sup>15</sup>. In Moldova, the highest expenditure increases concerned health, social protection and education. As a result, before the crisis one could see three types of GG expenditures structures (see Figure 2.6b): (1) in Belarus, economic affairs, housing and utilities dominated, and social protection was more important than other three aggregated expenditure lines; (2) in Georgia and Russia, the biggest share belonged to the general public

<sup>12</sup> In smaller countries the debt grew slower because their borrowing opportunities were reduced due to already high indebtedness (the case of Kyrgyzstan, where IFIs for some time switched from loans to grants) or political reasons (for a long period of time the communist government in Moldova could not negotiate appropriate conditions with IFIs).

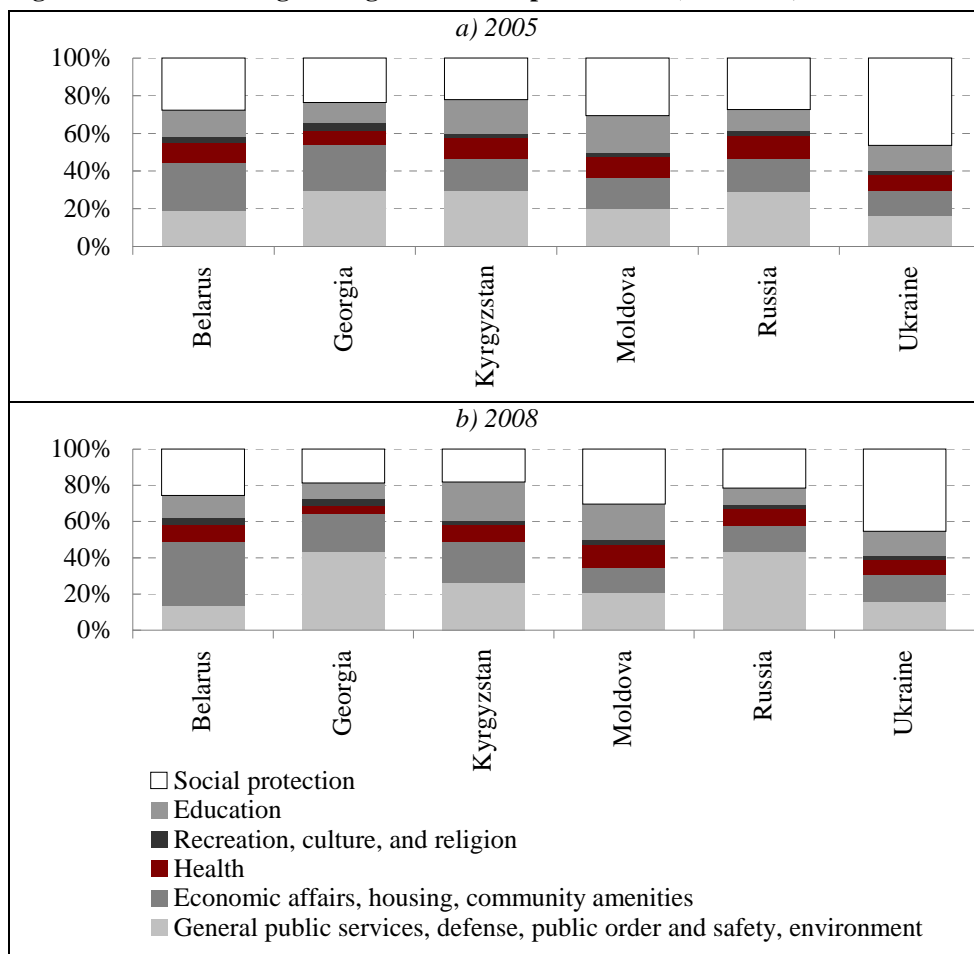
<sup>13</sup> According to the data from WEO database (April 2011).

<sup>14</sup> Social protection includes pension expenditures, unless otherwise indicated.

<sup>15</sup> The classification is as follows: general public services, defense, public order and safety, economic affairs, environmental protection, housing and community amenities, health, recreation, culture and religion, education, social protection.

services, defense, public order and safety, environmental protection. The government spent relatively little on education and health, and approximately equal expenditures were allocated to social protection and economic affairs; (3) in Moldova and Ukraine, social protection expenditures were the most important, while others were relatively equal (however, social protection outlays in Ukraine in 2008 amounted to a record 20.6% of GDP, while in other countries of the region, they did not exceed 12.5% of GDP).

**Figure 2.6. Structure of general government expenditures<sup>16</sup> (% of total)**

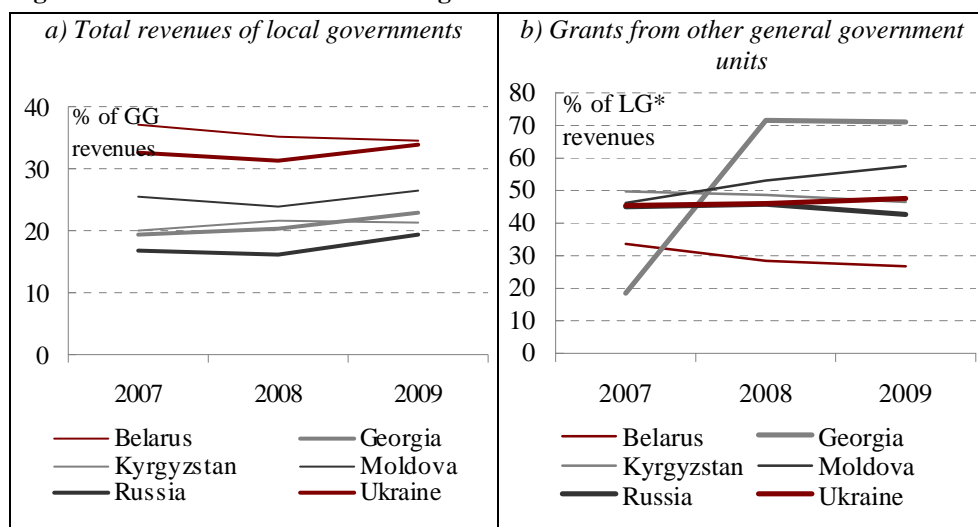


Source: own estimates based on the data from GFS database, except Kyrgyzstan – own estimates based on the data from the Ministry of Finance of Kyrgyzstan.

<sup>16</sup> Data of functional classification of expenditures for Kyrgyzstan is not available from international databases.

Public finance management is heavily centralized in the analyzed countries: only in Belarus and Ukraine is the share of local governments in GG revenues around 35%, while in other countries it fluctuates around 20-25% (see Figure 2.7a). Taking into account the revenues of local governments without transfers from the central budget, their shares in total GG revenues are even lower: around 6% in Georgia, 11% in Kyrgyzstan, Moldova, and Russia, 18% in Ukraine and 25% in Belarus. Georgia radically increased centralization in 2008: the share of central government grants in local government revenues increased from about 20 to more than 70% (Figure 2.7b), i.e. the majority of taxes were collected at the central government level.

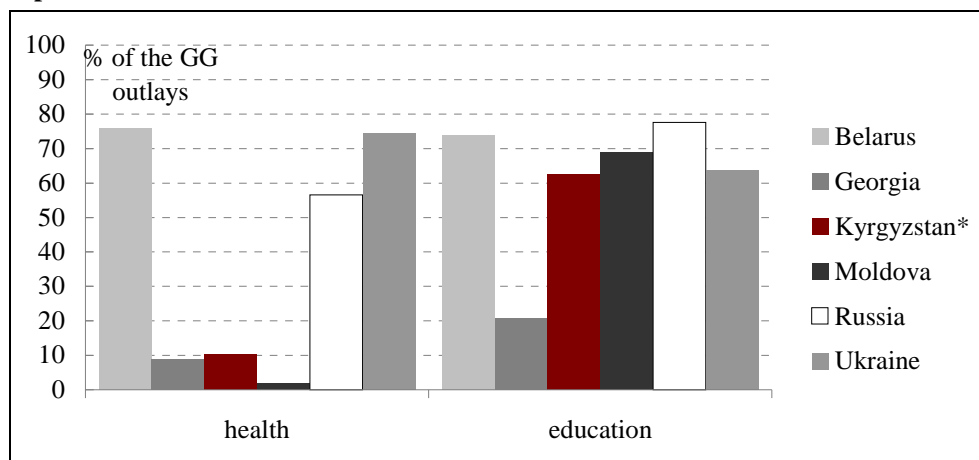
**Figure 2.7. Selected indicators of local government finance**



\* LG – local governments.

Source: own estimates based on the data from GFS database and IMF country reports for Kyrgyzstan.

Despite the small role of local budgets in revenue collection, the financing of education and healthcare in some countries mostly comes from this source. This practice was widespread in the beginning of the 2000s, but currently, three countries of the region (Georgia, Kyrgyzstan and Moldova), finance healthcare mainly from the central budget. Education in all countries but Georgia is still financed mostly at the local level (see Figure 2.8).

**Figure 2.8. Share of local government expenditures on education and health in total GG expenditures for these items in 2009**

\* for Kyrgyzstan, only 2006 data is available.

Source: own estimates based on the data from GFS database and Ministry of Finance of Kyrgyzstan.

Before the crisis, most countries of the region had relatively balanced or surplus budgets (only Ukraine runs a permanent deficit, see Table 2.6). Two countries of the region, Russia and Belarus, saved a large portion of their surpluses in stabilization funds<sup>17</sup> that accumulated windfall profits from exports of energy and other commodities. Resources from these funds were supposed to be used for smoothing out expenditures in the case of a worse external environment and a reduction of windfall revenues.

#### 2.2.4. Pre-crisis imbalances and vulnerabilities

Incomplete reforms and a weak business environment in the region correlate with low degrees of democratization. According to Freedom House's "Freedom in the World", political regimes in the region are either "not free" (Belarus, Russia) or "partly free" (the rest) with a tendency towards improvement (Moldova, Kyrgyzstan, Georgia) or worsening (Ukraine). On top of this, Transparency International considers all countries of the region but Georgia highly corrupt (Transparency International (2010)). All of these distortions result in a high share of informality: according to the estimates of Schneider, Buehn and Montenegro (2010), in 2007, the shadow economy amounted to, on average, 40–60% of GDP in these

<sup>17</sup> See Sinitsina (2011), Shymanovich and Kruk (2011).

countries (see Table 2.7)<sup>18</sup>. However, the high share of informal economy (partially accounted for in the GDP) means that economic growth/decline may not be mechanically replicated by the dynamics of government revenues.

**Table 2.7. The share of the shadow economy (% of GDP)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average*	Place**
Belarus	48.3	48.1	47.9	47.6	47.0	46.1	45.2	44.2	43.3	46.4	133
Georgia	68.3	67.3	67.2	67.2	65.9	65.5	65.1	63.6	62.1	65.8	150
Kyrgyzstan	41.4	41.2	40.8	41.4	40.5	39.8	40.1	39.8	38.8	40.4	108
Moldova	45.6	45.1	44.1	44.5	44.6	44.0	43.4	44.3	--	44.5	127
Russia	47.0	46.1	45.3	44.5	43.6	43.0	42.4	41.7	40.6	43.8	122
Ukraine	52.7	52.2	51.4	50.8	49.7	48.8	47.8	47.3	46.8	49.7	140

\* Simple average for 1999–2007 (Moldova – 1999–2006). \*\* Among 151 countries.

Source: Schneider, Buehn, Montenegro (2010).

Another characteristic of the region relates to political business cycles in most analyzed countries, which influenced expenditures behavior during the crisis in Kyrgyzstan (presidential election in 2009), Moldova (parliamentary election in 2009), Ukraine (parliamentary elections in 2006 and 2007, presidential election at the beginning of 2010), and Belarus (presidential elections at the end of 2010). In addition to their expansionist fiscal policies, Kyrgyzstan and Ukraine loosened their monetary policy before the crisis, which led to an acceleration of inflation in these countries in 2008 (see Figure 2.12). In Belarus, Kyrgyzstan, and Ukraine, politically motivated loose fiscal and monetary policies led to increasing current account deficits.

Similar imbalances appear in all analyzed countries except Russia: while in 2005, only Moldova and Georgia recorded current account deficits (8 and 11% of GDP, respectively), in 2008, Russia remained the only country with a current account surplus; in other countries, current account deficits ranged from 7–9% of GDP (Ukraine, Kyrgyzstan and Belarus) to 16% in Moldova and 23% in Georgia.

An additional source of vulnerability came from the limited diversification of both export and budget revenues. Moldova and Kyrgyzstan largely relied on migrant remittances, and any negative shock on the Russian labor market reduced the

<sup>18</sup> This data is somewhat contradictory to doing business rankings (Table 2.1): in 2007, Georgia took a lead in terms of ease of doing business and low corruption in the region, but at the same time it was one of the outsiders in terms of the share of shadow economy. However, compared to the year of budget reform (2005), the informal economy in this country fell by 3% of GDP – one of the best results in the world.

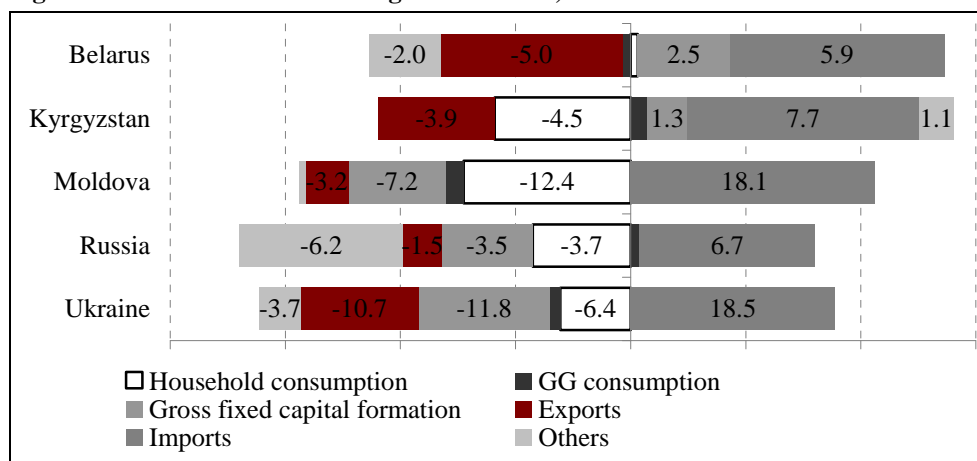
size of remittance inflow. The exports of most countries depended on commodities prices. In Russia and Belarus, the share of export duties in total GG revenues was very substantial (in 2008, they amounted, respectively, to 14% and 12% of GG revenues).

Thus, before the crisis, the challenges faced by most of the analyzed countries were broadly similar: weak institutions, a large informal economy, and external imbalances. In some countries, room for economic policy maneuvers was limited by changing political cycles. In others, sources of vulnerability such as a high reliance on revenues from energy commodities exports or remittances could hardly be addressed quickly.

### 2.2.5. Economic and fiscal developments during the crisis

The crisis influenced the economies of the region through a drastic reduction of exports and domestic demand (see Figure 2.9). As a result, imports also fell as a result of lower domestic demand and depreciating local currencies. Belarus and Kyrgyzstan were the two exceptions – investment in these countries increased, allowing for an earlier recovery (see Figure 2.4). Moreover, these two countries were able to increase production for the domestic market (estimated as domestic demand minus imports): in 2009, its contribution to GDP growth amounted to 6.2 and 6.4 percent in Kyrgyzstan and Belarus, respectively, while in other countries of the region it was negative.

**Figure 2.9. Contributions to GDP growth in 2009, %**

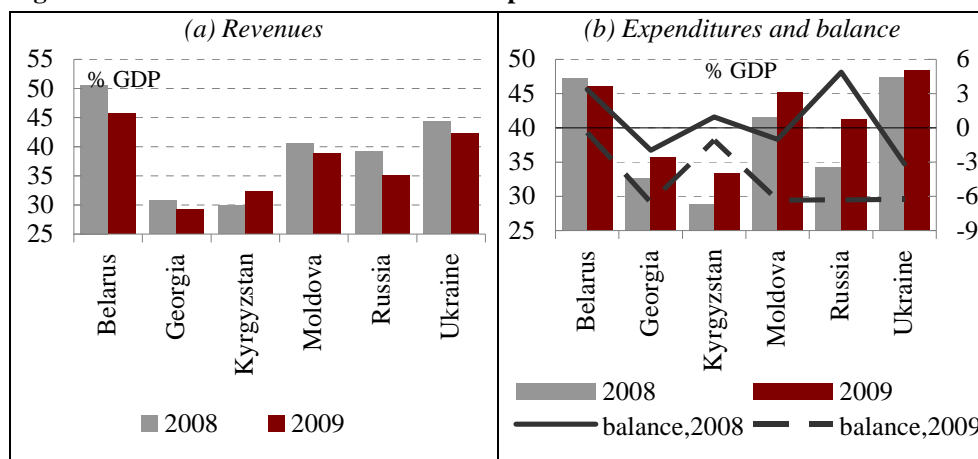


Source: own estimates based on data from the WDI-GDF database.

In 2009, the recession in the analyzed countries was deeper than in the global economy: Ukraine recorded the largest decline, followed by Russia, Moldova and Georgia, while Kyrgyzstan and Belarus demonstrated small increases in GDP for the whole year (see Table 2.5). The decline in Russia added to the region-specific factors of deeper recession: among other things, it caused a decrease in migrant remittances (which had the greatest effect on Moldova and Kyrgyzstan) and a cut in exports of investment goods from Belarus and Ukraine to Russia.

GDP decline (or significant growth deceleration) was one of the important factors behind the contraction of general government revenues: in real terms, they fell in all countries except Kyrgyzstan and Russia.<sup>19</sup> Moreover, revenues fell faster than GDP (with the same exceptions, see Figure 2.10a). Falling imports appeared to be one of the factors behind this phenomenon; although it contributed positively to GDP growth (from an accounting perspective), it decreased fiscal revenues from foreign trade and indirect taxation.

**Figure 2.10. Reaction of GG revenues and expenditures to the crisis**



Source: WEO (April 2011) database.

Tax revenues became the most negatively affected by the crisis' impact while social contributions did not suffer at all, at least in relation to GDP (see Table 2.8). Among tax revenues, taxes on corporations and other enterprises as well as taxes on international trade and transactions suffered the most due to the reduction of profit

<sup>19</sup> In 2009, Kyrgyzstan faced a significant inflow of grants from foreign governments and international organizations; general government revenues in Russia remained unchanged in real terms thanks to an increase in 'miscellaneous and unidentified revenue'.



and contraction of foreign trade. In Belarus, tax revenues fell by 7.6% of GDP<sup>20</sup>. Georgia's tax system appeared to be the most resilient to the crisis: tax collection fell by just 0.5% of GDP, while the major reduction in revenues was the result of reduced grants from foreign governments<sup>21</sup>. Kyrgyzstan, on the contrary, compensated for losses in tax revenue with a substantial inflow of foreign grants. Russia and, to some extent, Belarus were able to increase sources of "other revenue"<sup>22</sup>.

**Table 2.8. Crisis impact on GG revenues (% total revenues)**

	2008	2009	change	2008	2009	change
	<b>Belarus</b>			<b>Moldova</b>		
Taxes	72.4	63.6	-8.8	60.3	55.1	-5.2
Social contributions	21.5	24.3	2.9	25.8	29.4	3.6
Grants	0.0	0.0	0.0	4.0	4.8	0.8
Other revenue	6.1	12.0	5.9	9.9	10.6	0.8
	<b>Georgia</b>			<b>Russia</b>		
Taxes	81.2	83.4	2.2	53.3	43.3	-10.0
Social contributions	0.0	0.0	0.0	11.0	11.6	0.6
Grants	10.5	7.4	-3.2	0.0	0.0	0.0
Other revenue	8.3	9.3	1.0	35.7	45.2	9.5
	<b>Kyrgyzstan</b>			<b>Ukraine</b>		
Taxes	63.9	55.7	-8.2	55.0	53.1	-1.9
Social contributions	12.9	13.2	0.3	30.3	30.9	0.6
Grants	6.3	16.1	9.8	0.0	0.2	0.1
Other revenue	17.0	15.1	-1.9	14.7	15.9	1.2

*Source:* own estimates based on GFS data, except Kyrgyzstan, which is the result of own estimates based on IMF (2010) and WEO (April 2011) database.

GG expenditures behaved counter-cyclically in all countries of the region except Belarus<sup>23</sup> (see Figure 2.10b). All countries increased social protection expend-

<sup>20</sup> Belarus appeared to be a 'special case', because before the crisis, the government had introduced additional duties for the biggest exporters, mainly exporters of oil products. When oil prices fell drastically in 2009, the profitability of oil refineries shrank, and the government lost this revenue source.

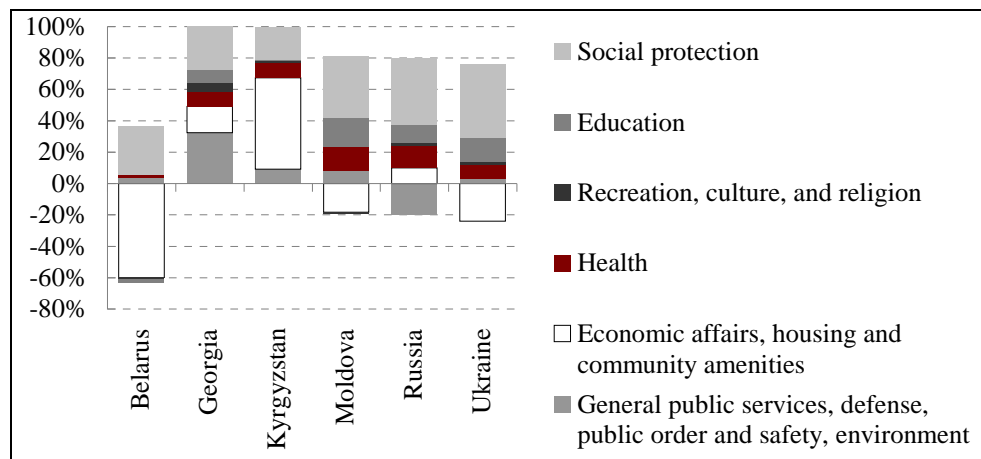
<sup>21</sup> However, this decrease was caused by the high base of 2008, when Georgia received a lot of foreign grants after its armed conflict with Russia.

<sup>22</sup> In Belarus, 'other revenue' grew thanks to the 'sales of goods and services' item and the 'incidental sales by nonmarket establishments' sub-item; in Russia all increase was related to 'miscellaneous and unidentified revenue'.

<sup>23</sup> Again, the special case of Belarus was related to the financial settlement scheme between the government and the oil refineries: a large portion of 'economic affairs outlays' were directed as a subsidy to oil suppliers. The decrease in oil prices caused not only a reduction in revenues from export duties, but also lower expenditures on these subsidies. Expenditures other than economic affairs increased in 2009 by 0.9% of GDP.

itures, and almost all (except Belarus) increased expenditures on education and health<sup>24</sup> (see Figure 2.11). Three countries (Georgia, Russia and Kyrgyzstan)<sup>25</sup> increased spending on economic affairs (others reduced them). Russia cut general public services outlays and increased defense spending, while Georgia did the opposite.

**Figure 2.11. Changes in the structure of general government expenditures in 2009, % of total**



Source: own estimates based on the data from GFS and WEO (April 2011) databases, except Kyrgyzstan – own estimates based on the data from the Ministry of Finance of Kyrgyzstan.

The reduced revenues and growing expenditures led to an emergence or increase of fiscal deficits in all countries (see Figure 2.10b) and an increase in the public debt (see Table 2.9). The debt-to-GDP ratio additionally deteriorated as a result of the GDP decline and the depreciation of national currencies. GG debt increased mainly through external borrowing because domestic sources were extremely limited. Companies also increased their borrowing – gross external debt grew faster than general government debt in all countries except Moldova.

<sup>24</sup> International data sources provide different data on health expenditures. In Section 2, we use the GFS database, as it contains the whole functional classification of GG outlays. In section 4 (health), the WHO database is used, as it provides more detailed and comprehensive data on health expenditures. For overall health outlays, numbers are somewhat different and in some cases the direction of change is different too (e.g., in Ukraine, the IMF data shows an increase in health expenditures, while WHO data shows no change).

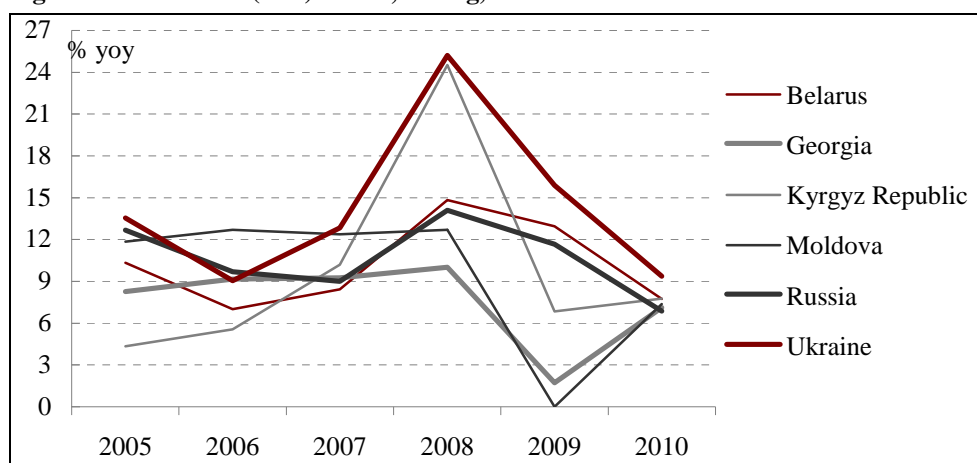
<sup>25</sup> See Mogilevsky (2011) for details.

**Table 2.9. Debt behavior in 2009, % of GDP**

	Belarus	Georgia	Kyrgyzstan	Moldova	Russia	Ukraine
GG gross debt (foreign and domestic)						
2008	11.5	27.6	48.5	21.6	7.9	20.5
2009	20.0	37.3	58.4	31.6	11.0	35.3
Change	8.6	9.7	9.9	10.0	3.1	14.8
External debt stocks (including private)						
2008	20.2	26.4	48.0	57.2	24.1	51.7
2009	34.8	39.4	63.3	63.0	30.9	82.0
Change	14.5	13.0	15.4	5.8	6.8	30.3

Sources: GG gross debt – WEO database (April 2011); external debt stocks – own estimates based on WDI-GDF database.

After the pre-crisis inflation surge in 2008, inflation fell in all the countries in 2009, mostly as the result of much tighter monetary conditions (caused by the global financial crisis and massive capital outflow) and the decrease of global commodity prices (see Figure 2.12). It seems that domestic monetary policies had a limited impact on inflation trends in both 2008 and 2009.

**Figure 2.12. Inflation (CPI) before, during, and after the crisis**

Source: WEO database (April 2011).

The overall macroeconomic and fiscal impact of the crisis can be summarized as follows. First, the recession in the region caused a natural reduction of the tax base and, hence, a reduction of GG revenues. Second, as the recession in each country resulted from a combination of economy-specific factors, it had various impacts on individual revenue sources. For instance, the same reduction of total exports led to much bigger losses in tax revenues in countries that heavily relied on

export taxes (like Russia and Belarus). On the other hand, countries with a bigger share of informal economy recorded a smaller reduction of tax revenues. Third, all countries preferred to keep GG expenditures the same as previous levels and, as a result, had deteriorated fiscal balances. The deficits were financed mainly via external borrowing. Also, all countries depreciated their currencies against the USD, which not only increased their debt/GDP ratios, but also increased the tax base of some taxes. The structure of expenditures also changed, but apart from the increase in spending on social protection, there was no common trend for all countries of the region. Health and education expenditures (as a ratio to GDP) either remained almost unchanged (Belarus) or were increased slightly (other countries).

## 3. Education

The purpose of this chapter is to analyze government policies and budget spending on education, as well as the outcomes of these policies, and to provide extended coverage of the crisis' impact on the sector's financing and performance. In the analyzed countries, the crisis impact appeared to be diverse and was determined by the (1) government policy; (2) fiscal space (severity of the crisis' impact on GG revenues) and (3) reform progress in the sphere of education.

### 3.1. Education systems and education policy in the 2000s

#### 3.1.1. Participation

The analyzed countries inherited a well-developed but expensive system of education from the Soviet period, a system which is more common in countries with much higher levels of GDP per capita. Therefore, the main policy goal during the transition period was to sustain the already achieved level of education. The first decade of transition brought about a decline in funding, arrears in teachers' salaries, a lack of heat and maintenance in many schools, etc., which contributed to a decline in education quality. Differences in education opportunities have emerged; enrollment rates have fallen sharply and public expenditures have shrunk across post-Soviet countries, albeit the scale and pace of deterioration varied greatly. On the contrary, during the 2000s, the FSU countries have accomplished some progress in education. In particular, participation in pre-primary and tertiary education has increased considerably, although wide disparities remain across countries.

In the 2000s, enrolment in *pre-primary* education has increased in all countries under analysis both in absolute and relative terms. Internationally comparable net enrolment ratios<sup>26</sup> (2008) in European FSU countries far exceed the respective figures in the Caucasus and Central Asia (CCA) and are very close to the levels of

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<sup>26</sup> Net Enrolment Ratio (NER) is defined by the UNESCO Institute for Statistics as enrolment of the official age-group for a given level of education expressed as a percentage of the corresponding population.

the EU NMS and some of the EU candidate countries (90% in Belarus and 71-73% in Russia and Moldova).<sup>27</sup> For comparison, in CCA, pre-school NERs are several times lower – 45% in Georgia, 22% in Azerbaijan, 39% in Kazakhstan and 14% in Kyrgyzstan. In the majority of FSU countries, the share of enrolment in private pre-school institutions remains exceptionally low (except for 5% of the total enrolment in Kazakhstan and 4% in Belarus, the level typical for most EU NMS), not exceeding 2% in Russia and Ukraine and 1% in Kyrgyzstan.

The major barriers to participation in pre-school programs are distance (e.g. in remote villages or settlements lacking adequate infrastructure facilities) and inadequate financing at the municipal level, resulting in a pronounced shortage of free or subsidized places in kindergartens. In Russia, for example, 1.68 million children, or almost a third of the respective age group, were on the waiting list for obtaining a place in pre-school institutions as of January 1st, 2010 (Mizulina (2010)). The acute shortage of such institutions in many countries (Ukraine, Belarus, Kazakhstan) is one of the reasons for the continued high poverty levels among women, particularly in single-parent families or families with many children, as young mothers are often compelled to abandon their jobs completely or to change employment in favor of low-paid, unskilled jobs allowing for more flexible work hours. This situation forces many young or “potential” mothers to make a tough choice between having children or pursuing professional development (ISGP (2008)).

In *primary education* (ISCED level 1, usually grades 1 – 4)<sup>28</sup>, as a result of the prevailing demographic trends, the past decade brought about a considerable decrease of the respective age cohorts in all analyzed countries (see Figure 3.1). Still, all countries maintained relatively high rates of school participation as measured by gross enrolment ratios (GER)<sup>29</sup>, and were close to the respective levels demonstrated by the EU NMS. In the decade of the 2000s, the CCA recorded steady progress towards universal primary education (UPE) by increasing GER, sometimes over 100% due to the inclusion of over-aged and under-aged pupils because of early or late entrants, and grade repetition. This could be seen as improvement over the 1990s, when armed/ethnic conflicts and transformation shocks severely affected the population. During the same period, in the European FSU countries,

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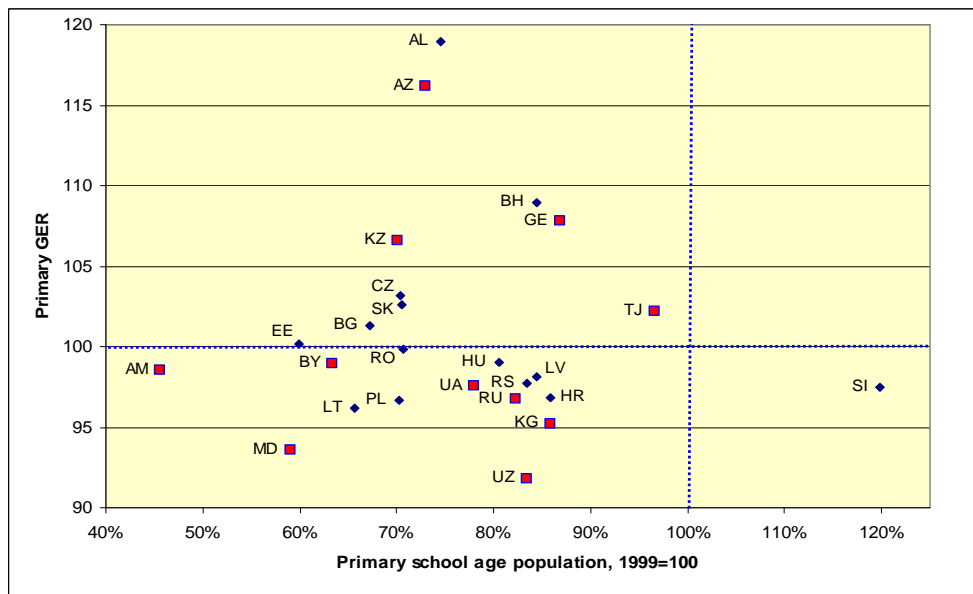
<sup>27</sup> The pre-primary NER figures are not strictly comparable as national statistics differ in their coverage of the respective age groups – e.g. from 3 to 6 years in most FSU countries but from 3 to 5 years in Belarus and Ukraine.

<sup>28</sup> In Georgia, primary education lasts for six years starting from age six.

<sup>29</sup> UNESCO defines GER as total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school year. For the tertiary level, the population used is the five-year post-secondary school age group.

these indicators decreased slightly from over 100% to the standard average European rates.

**Figure 3.1. Gross enrolment rates in primary education (latest year available) and changes in primary school age population, 1999=100**



Source: UNESCO Institute for Statistics.

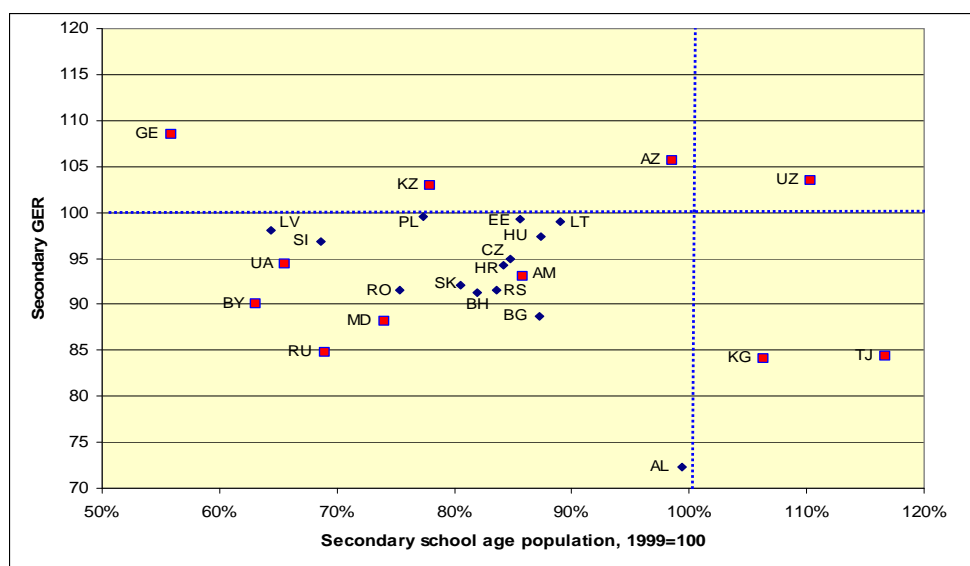
As concerns the NER (an indicator with a rather low country coverage in the UNESCO database), the analyzed countries displayed varying trends during the decade. By the end of the 2000s, NERs ranged from 83.4% in Kyrgyzstan and 87.7% in Moldova (2008) to 98.7% in Georgia. The available data allows us to conclude that since the beginning of the decade, the NER decreased somewhat in Ukraine (from 90.8% in 2002 to 88.6% in 2009), in Kyrgyzstan (from 86.7% in 2000 to 83.5% in 2009), in Moldova (from 90.0 in 2000 to 87.5 in 2009) and underwent a considerable decrease in Armenia (from 90.6 in 2001 to 84.1 in 2007). The falling primary enrolment levels in the poorer countries of the region can be partly explained by the unofficial migration of children whose parents were working permanently abroad, and/or by the financial difficulties that many families were facing in terms of sending their children to school. Three FSU countries – Tajikistan, Moldova and Georgia – have displayed insufficient progress in achieving the UN Millennium Development Goal of universal primary education and are unlikely to achieve this goal by 2015 (UNDP (2008)).

On the other hand, an increase of the NER was registered in Belarus (from 93.3% in 2001 to 94.4% in 2008, with a noticeable reduction in the middle of the decade), in Georgia (from 91.4% in 2004 to 99.6 in 2009), in Kazakhstan (from 87.2% to 89.0% in 2009), and in Azerbaijan (from 89.5 in 2000 to 96.0% in 2008), while in most of the EU NMS it is close to 95%.

According to UNESCO estimates, almost all children who enroll in primary school in the countries under review complete their primary schooling. Still, geographic isolation, extreme poverty, social exclusion, disability and conflicts do have an effect. According to various estimates, 5% to 7% of the FSU primary school age children remained out of school in 2007 (UNESCO (2010)). Getting all children into and through primary education requires a much stronger focus on marginalized children. It is also possible that the global financial crisis may have reversed some of the positive trends.

In terms of *general secondary education* (ISCED levels 2 and 3), Figure 3.2 shows that during the past decade, almost all FSU countries (except for the three in the CCA region) experienced a considerable decrease in their school age populations, with the most substantial reduction demonstrated by the European FSU countries and Georgia. In the majority of FSU countries, GER for secondary education, being generally close to the maximum, remains at a slightly lower level compared to EU NMS.

**Figure 3.2. Gross enrolment rates in secondary education (latest year available) and changes in secondary school age population, 1999=100**



Source: UNESCO Institute for Statistics.



In the 2000s, secondary GER has grown in the majority of FSU countries, except for Ukraine and Russia, where a reduction was registered. As concerns disaggregation between the two levels of secondary education (lower vs. upper secondary), the trends vary between countries. In Kazakhstan and Kyrgyzstan, enrolment in lower secondary education increased, but declined somewhat at the upper secondary level. In Russia and Ukraine, the GER declined both in lower and in upper secondary education. By the end of the decade, the lower secondary GER surpassed 100% in a number of countries (113.5% in Belarus, 104.3% in Kazakhstan, and 100.9% in Azerbaijan), while in Russia and Moldova, this indicator fell to below 90%. Interestingly, in some countries, the GER at the upper secondary level does not differ much from enrolment at the lower secondary level, being just 2 - 5 pp lower (Russia, Ukraine). Meanwhile in Belarus, Armenia, Kazakhstan, Kyrgyzstan and Turkmenistan, this difference exceeds 10 pp. On the contrary, in Georgia and Azerbaijan, the GER for upper secondary education exceeds that of the lower secondary level.<sup>30</sup>

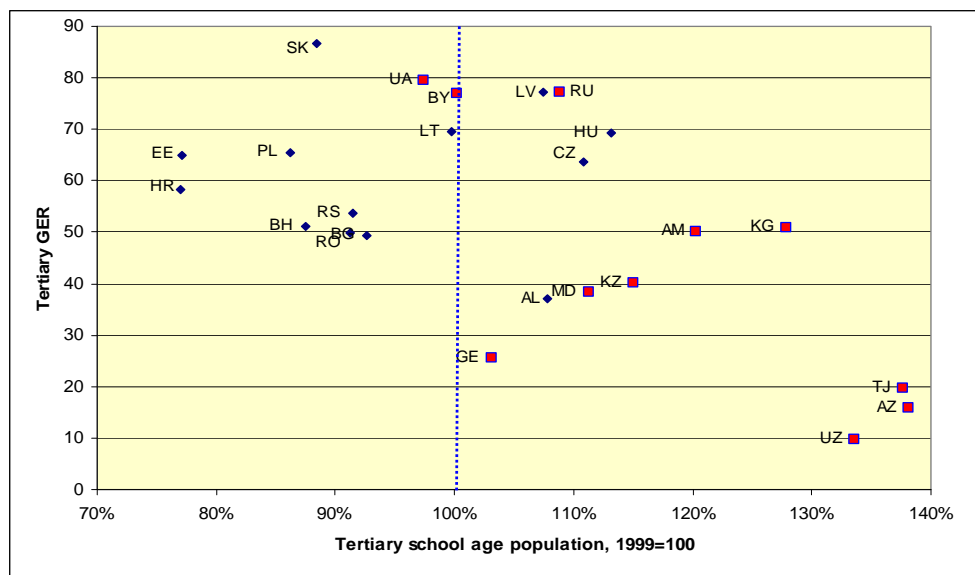
*Vocational education and training (VET).* Technical and vocational education programs can strengthen the transition from school to employment, offer second chances, and help combat marginalization. VET is offered through a wide array of institutional arrangements, public and private providers, and financing systems. The available statistics do not allow for a direct comparison of the enrolment numbers in various forms of vocational education between countries. Still, empirical evidence suggests that during the transition, VET, particularly its PVE segment, had shrunk following the collapse of the state enterprises' potential to provide training for a specialized workforce. For example, in Moldova, half of the vocational schools were closed, mainly in smaller towns, while in Chisinau, the number of PVE students declined threefold (ETF (2010)). In Georgia, the number of PVE students was reduced by about 7 times since 1989; in Kyrgyzstan, this decline was about 40% with an accompanying shift towards shorter (one-year) programs. With declining investment, obsolete equipment, old curricula and aging teaching staff, this sector is losing its attractiveness to students. A partial exception is Belarus, where enrolment in secondary specialized education increased by 16% since 1990, while that of vocational training declined by one fourth but started to grow again in the late 2000s due to increased government funding.

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<sup>30</sup> In Georgia, in the course of the reform of vocational education, the general educational component was removed from the program of initial and secondary professional education. This caused a number of pupils to return to general public schools from vocational institutions to finish secondary education. This is the main reason why the enrolment in upper secondary level exceeded that of lower secondary.

*Tertiary education.* During the past decade, the considerable increase in the tertiary school age population (ISCED 5 and 6) in Russia, Moldova as well as in CA was accompanied by growth in tertiary enrolment ratios (see Figure 3.3). In most countries, this increase was fueled by evidence that a university degree offered a greater chance of employment in the labor market. The tertiary GER grew from 53.4% in 2000 to 77.0 % in Belarus (2009), from 55.2% to 77.2% in Russia (2008), from 48.9% to 79.4% in Ukraine (2008), from 23.6% to 50.1% in Armenia (2009), from 28.2% to 41.1% in Kazakhstan (2009) and from 34.7% to 50.8% in Kyrgyzstan. During the same period, a tertiary GER reduction was registered only in Georgia (from 38.0% to 25.5% in 2009) and in Azerbaijan. As a result, tertiary enrolment in European FSU countries (except Moldova) currently exceeds that of most of NMS and is close to the EU15 level, while in Tajikistan and Uzbekistan, it is on par with enrolment in India.

**Figure 3.3. Gross enrolment rates in tertiary education (latest year available) and changes in tertiary school age population, 1999=100**

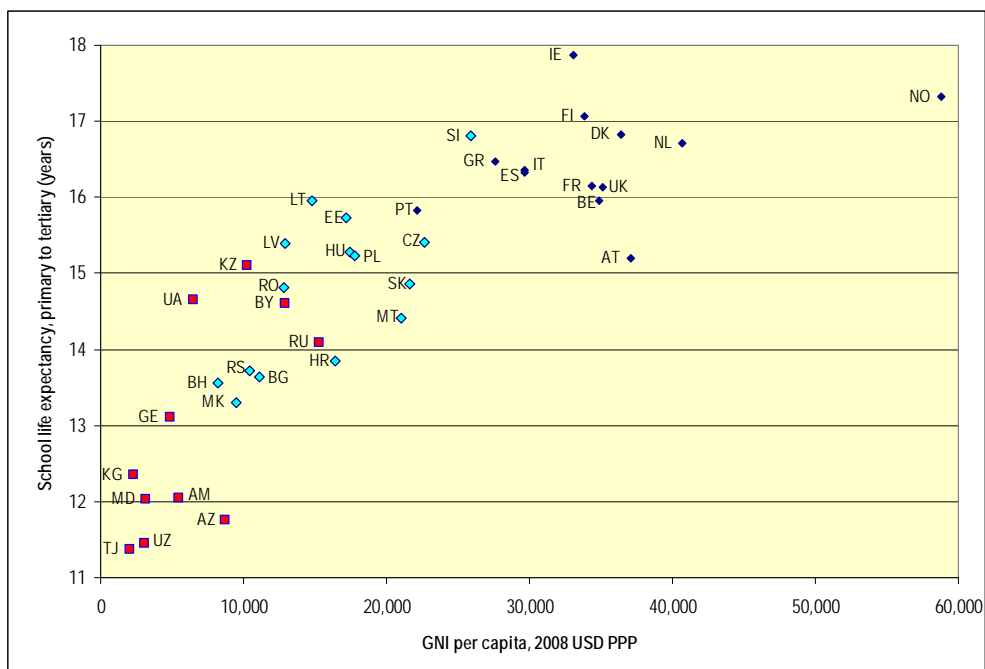


Source: UNESCO Institute for Statistics.

Apart from demographic factors, the upsurge of tertiary GER in most countries was associated with the expansion of private higher education institutions (HEI) and the growing proportion of students enrolling on fee-paying conditions: the major factors were the removal of artificial restrictions on HEI admission, coupled with increasingly lenient eligibility requirements and more affordable tuition fees (often going hand in hand with declining education quality).

FSU countries have moved away from having the same starting age of compulsory education during the Soviet period (7 years old); primary education now begins at the age of 6 in Belarus, Russia, Ukraine, Azerbaijan and Georgia, and at the age of 7 in the remaining countries. Compulsory education ends at the age of 14 in Belarus, Armenia and Georgia, at the age of 15 in Moldova, Russia, Kyrgyzstan, Tajikistan and Turkmenistan, at the age of 17 in Azerbaijan, and at the age of 18 in Uzbekistan. Thus the duration of compulsory education varies from 8 years in Armenia through 9 years in Belarus, Moldova, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, 10 in Russia, 11 in Azerbaijan, Kazakhstan and in Ukraine, to 12 years in Uzbekistan. The 3A upper secondary level of education begins at the age of 15 in most of the countries, except for Moldova, Kyrgyzstan, Tajikistan and Uzbekistan, where it starts at 16.

**Figure 3.4. Expected years of schooling, primary to tertiary (latest year available) against GNI per capita, 2008 USD PPP**



Source: UNESCO Institute for Statistics

To compare the education systems of individual countries, looking at a complementary indicator of expected years of schooling may be useful. The indicator below shows the number of years of schooling that a child entering school can

expect to receive if prevailing patterns of age-specific enrolment rates were to stay the same throughout the child's life.<sup>31</sup>

As Figure 3.4 suggests, expected years of schooling are correlated with national per capita GNI ( $r^2=0.69$ ), and the countries under review are generally characterized by lower values of this indicator as compared to the majority of EU NMS. Relatively higher school life expectancy is characteristic for Kazakhstan, Ukraine, and Belarus, which are comparable to Slovakia, Poland and Romania, as well as for Russia, which is only slightly ahead of SEE countries. During the past decade, some of the laggard countries demonstrated a rapid growth of school life expectancy, e.g. Tajikistan (15.3%), Georgia (12%), Azerbaijan (9.6%) and Armenia (9.5%), while the largest gains were seen in Kazakhstan (21.7%) and Ukraine (13.4%).

### **3.1.2. Education quality**

*Availability of teachers.* In order to achieve good learning outcomes, countries need to ensure that sufficient school space is provided, school systems function effectively, and there are enough teachers to ensure the appropriate quality of education. In particular, how teachers are deployed across schools says a lot about the efficiency and effectiveness of school systems. The widely used pupil-teacher ratio (PTR) indicator could be considered, depending on the circumstances, as a proxy for measuring both education quality and its efficiency. In 2008, the average primary (and secondary) student-teacher ratios amounted to 39 (32) in South and West Asia, 23 (17) in Latin America, and 14 (13) in North America and Western Europe (UNESCO-UIS (2010)). Several FSU countries, especially the European ones, are characterized by lower PTRs (particularly in secondary education) as compared to OECD countries (see Figure 3.5), reflecting inefficient resource allocation.

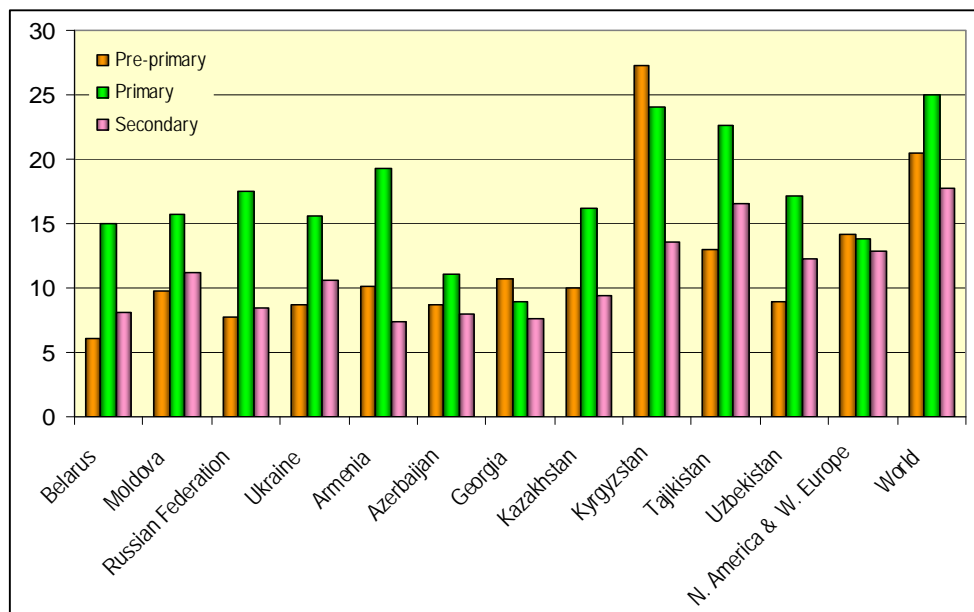
In the decade of the 2000s, the prevailing PTR trends were largely determined by demographic processes, i.e. a decrease of pupil cohorts, which was not always accompanied by a proportional reduction in the teacher workforce. In pre-primary education, a PTR decrease was registered only in Kazakhstan and Uzbekistan, while the majority of the analyzed countries demonstrated growth in this ratio. Still, the dispersion of PTR values remained considerable: from 6.1 in Belarus to 27.2 in Tajikistan. On the contrary, in primary education, the prevailing trend was a PTR re-

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<sup>31</sup> This indicator has several limitations for use in comparative studies: e.g. the length of the school year and the quality of education are not the same in every country; the indicator also does not directly take into account the effects of repetition (some countries have automatic promotion while others do not). The coverage of different types of continuing education and training also varies across countries.

duction (in Belarus, Moldova, Ukraine, Azerbaijan, Georgia, Kazakhstan and Uzbekistan). As concerns secondary education, PTR decreased in the European FSU countries and Kazakhstan, and increased in Armenia, Azerbaijan and Uzbekistan.

**Figure 3.5. Number of pupils per teacher (latest year available)**



Source: UNESCO Institute for Statistics.

Apart from demographic trends, low (and declining) PTRs in most FSU countries seem to be related to (1) the slow pace of optimizing school networks and (2) settlement patterns which necessitate maintaining schools with small and unfilled classes in distant rural areas. As a result, teachers experience difficulties in teaching multiple subjects at the early levels of schooling, which has a negative impact on education quality.

*Teachers' qualifications* are another important factor determining the quality of education. While the majority of teachers in high-income countries are trained at the tertiary level, many developing countries have high proportions of untrained or poorly trained teachers. The available statistics (UNDP (2010)) indicate that many of the FSU countries managed to employ a skilled teacher workforce: in 2005-2008 in Belarus, Ukraine, Azerbaijan and Georgia, the share of adequately trained primary school teachers exceeded 95%, while in Armenia it amounted to 77.5% and in Kyrgyzstan to 64.4%. Teachers should not only be well-trained but also well motivated to teach. Unfortunately, the education sphere remains one of the most "underpaid," with average wages being considerably lower compared to

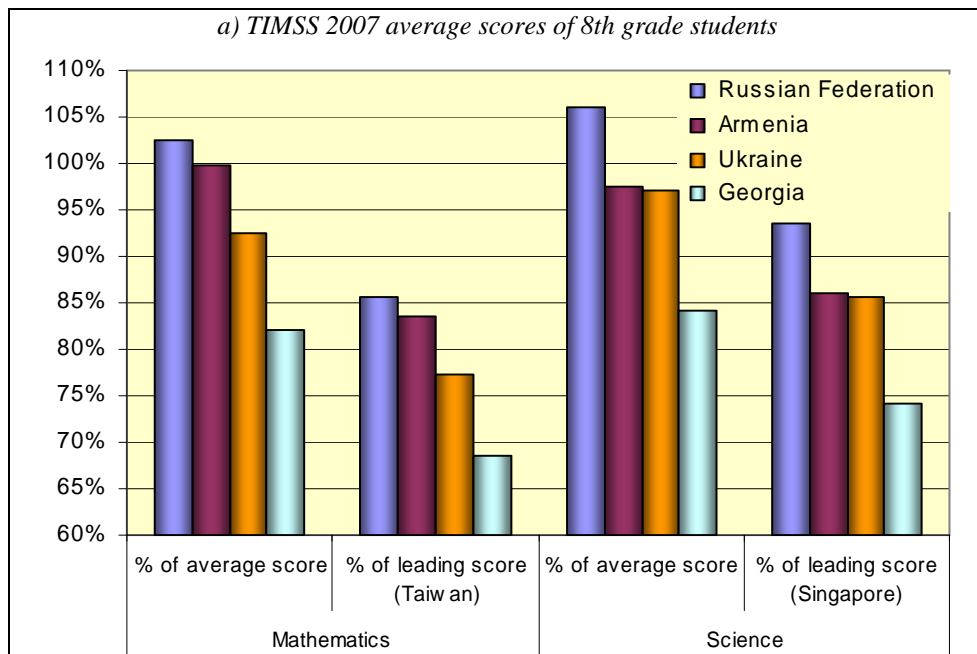
country averages, ranging from 59% in Kyrgyzstan, 66.6% in Russia, 74% in Belarus to 84.5% in Ukraine. This, in turn, discourages more qualified and skilled personnel from working in schools and prevents teachers from further developing their competences (Steiner-Khamsi and Harris-Van Keuren (2008)). Moreover, under budget constraints, especially in a time of crisis and post-crisis recovery, low salaries increase the risk of recruiting less qualified teachers. This, in turn, aggravates one of the painful problems in the analyzed countries: many teachers lack some of the basic competencies, for example, computer skills, in which they often lag behind their students.

To evaluate the countries' education quality in terms of *outcomes*, international programs for the assessment of pupils' scholastic performance such as PISA (Programme for International Student Assessment), TIMSS (Trends in International Mathematics and Science Study) and PIRLS (Progress in International Reading Literacy Study) may be instrumental. Individual countries' results could serve as a measure of efficiency of public spending on secondary education..

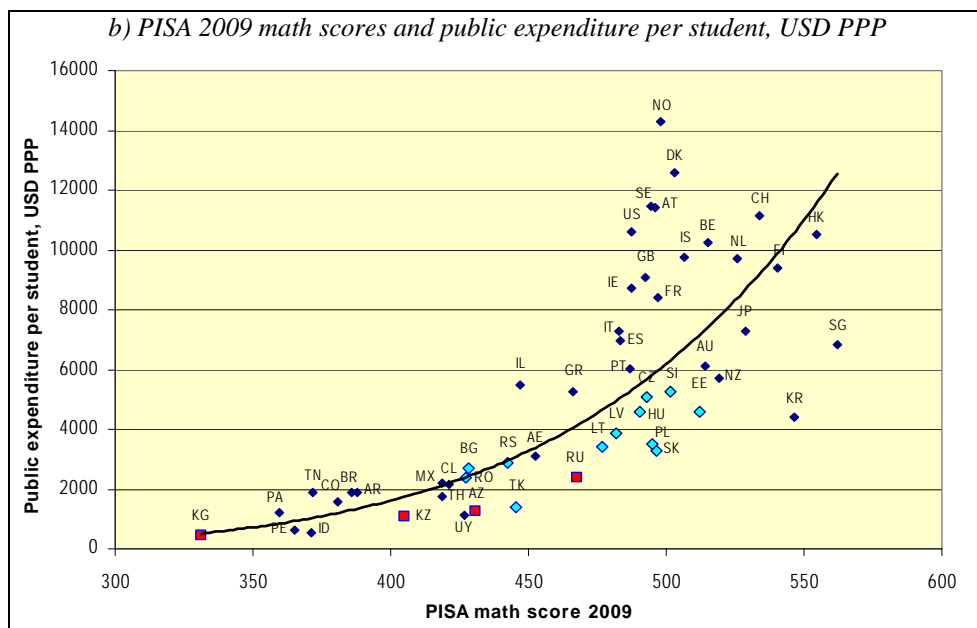
As only seven FSU countries participate in the above-mentioned programs, and only one (Russia) takes part both in PISA and TIMSS, a full cross-country comparison is not possible. Still, judging by educational outcomes in reading, science and problem solving, derived from PISA data for 2003 - 2009, the differences between the OECD average scores and respective scores for Russia, a FSU leader in education, remain significant and do not tend to decrease. In 2009, pupils' results in Azerbaijan and Kazakhstan were the lowest decile of the countries' sample, with Kyrgyzstan (having the lowest public spending per student) closing the ranks. As Figure 3.6b suggests, many participating countries with moderate economic potential achieved higher results. Moreover, all four FSU countries taking part in PISA are located below the trend curve, which is indicative of below average efficiency in terms of resource use.

In TIMSS 2007 tests, FSU countries, and particularly Russia, fared considerably better compared to their PISA scores (Figure 3.6a), with Russia displaying higher than average results both in mathematics and science, and Armenia and Ukraine being close to average. This dissimilarity could most probably be attributed to differences in the design of the assessments themselves, such as PISA's greater focus on applications and TIMSS's greater alignment with school curricula. In general terms, TIMSS seeks to determine "*what students know*" while PISA seeks to determine "*what students can do with their knowledge*". This hypothesis is corroborated by a growing lag (as demonstrated by PISA 2009) between FSU and OECD countries in terms of cognitive competencies to understand, use, and reflect on textual information. This lag is an indication of a fundamental weakness of the post-Soviet education system, namely its focus on memorizing factual and procedural knowledge to the detriment of developing learning skills.

**Figure 3.6. Results of international programs for schoolchildren performance assessment**



Source: TIMSS & PIRLS (2008).



Sources: OECD (2010), UNESCO Institute for Statistics.

As comparable assessments of student performance at the university level do not exist, the quality of tertiary education can only be measured by proxy indicators, one of them being the position of higher education institutions on the world market of educational services. Russia, the major exporter of educational services among FSU countries, controls a negligible share of the world market – from 0.5% to 1.5% by various estimates, with about a third of this portion accounting for students from the “near abroad”, i.e. other FSU countries. Another indicator is the international rating of a country’s leading universities and other HEIs, where the picture looks equally bleak. Among the leading world university rankings, The Times Higher Education World University index<sup>32</sup> includes no HEIs from the FSU in the top 200; the reputable Academic Ranking of World Universities (ARWU) compiled by the Shanghai Jiao Tong University<sup>33</sup> lists only two universities from Russia among the world’s top 500. HEIs from other FSU countries appear only in the Webometrics Ranking, which covers over 20,000 universities across the globe, with the best of them ranking only 1,443rd (Lviv University) and 1,474th (Belarusian State University).<sup>34</sup>

Numerous examples of the low quality of education at all levels are quite common in the mass media as well as in professional discussion in Russia, Ukraine and other FSU countries. The issue is often addressed as one of the most urgent concerns the countries are facing. The existing institutional regulations (uniform state educational standards, licensing of education institutions and state accreditation, introduction of unified state graduation exams) are not proving effective – in part due to design failures, but mostly because of widespread corruption and lobbying. Actual education standards as attested by diplomas from different HEIs are highly differentiated, and this differentiation is growing. The competition for diplomas on the labor market could hardly serve as a test for education quality, since getting an attractive job is often dependent on personal and family connections rather than on professional competences.

### **3.2. Policy reforms in the education sector during the transition**

The most important education reforms in CEE countries were decentralization and liberalization, a redefinition of education quality, strengthened links to the

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<sup>32</sup> <http://www.timeshighereducation.co.uk/world-university-rankings/2010-2011/top-200.html>.

<sup>33</sup> <http://www.arwu.org/>.

<sup>34</sup> <http://www.webometrics.info/>.



labor market, increased cost-efficiency and cost-effectiveness of education, and equity (Rado (2001)). In FSU countries, this agenda was complemented by the need for a transition from a universal Soviet education model to national ones adjusted to particular country specifics, i.e., its financial potential, labor market structure and demand, etc.

*Access equity.* Shortages in government resources in many FSU countries led to a rapid increase of paid education services, i.e., charging tuition fees in public education and encouraging the development of private schools.

As a cross-country comparative dataset on the structure of education expenditures by sources of funding is largely missing, our analysis has to rely primarily on panel surveys, experts' assessments, and anecdotal evidence. The available data demonstrate that household education expenditures constitute a sizable proportion of GDP (and tend to grow) almost everywhere in the FSU – 0.47% of GDP in Azerbaijan in 2005 (World Bank (2010)), 0.79% of GDP in Russia (2009), over 0.8% of GDP in Ukraine (World Bank (2008)) and 1% GDP in Kyrgyzstan (2009). These figures are much higher as compared to the EU average (0.38% of GDP), and even higher than the European maximum (0.7% of GDP in the UK) (EC (2010)).

Still, in all analyzed countries, the public sector remains the main provider of education at all levels. Private provision of education services continues to be negligible, with non-public schooling covering only a marginal fraction of enrollees, except for tertiary education. The percentage of private enrolment in pre-school education is noticeable in Belarus (4.4% in 2007), Kazakhstan (4.7% in 2009), and Kyrgyzstan (3.6% in 2009). In primary education, the proportion of private enrolment is considerable only in Georgia (8.7% in 2009), with Armenia (1.8%) next in line. Secondary general enrolment in private sector schools was significant and constantly growing only in Azerbaijan (12.6%) and in Georgia (6.4% in 2009). The same countries, as well as Russia, stand out as having high proportions of privately financed enrolment in upper secondary technical/vocational education: 78% in Azerbaijan, 27.5% in Russia, and 24.5% in Georgia (2009).

In tertiary education, the share of fee-based enrolment in both private and public institutions appears to be much higher compared to other education levels. No comparable statistics are available to provide direct comparisons, but anecdotal evidence suggests that private expenditures in tertiary education have become widespread. The proportion of “contractual” students who pay their own tuition fees in full (both in public and private HEIs) varies from about a half of the total in Ukraine, about two thirds in Russia and 71% in Moldova, to 84% in Kazakhstan (OECD – World Bank (2007)). Very few forms of public support to students and their parents, like grants and subsidies, are available. One of the few exceptions is

Georgia, where about one third of students receive public grants covering from 30 to 100% of their tuition costs.

In theory, fees can increase educational spending per student enrolled and even improve equity by targeting public subsidies to students from poor families. Selective charges on some learning inputs can increase the effectiveness of service delivery. However, in practice, the poor become disadvantaged. Public expenditures on education are usually captured by better-off households<sup>35</sup>, excluding poor families with more children, which constitute a considerable proportion of the poverty profile in the reviewed countries<sup>36</sup>. Inequality in education spending contributes to inequities in education outcomes, and these eventually translate into further inequalities in income, consumption and employment and are often inherited by future generations. Thus ensuring more equity in access to education is closely related to the effectiveness of the pro-poor targeting of direct and indirect grants, subsidies and other forms of financial assistance to students and their families.

The share of private funding is highest at the tertiary level; anecdotal evidence suggests that during the past decade this proportion has been growing in almost all analyzed countries, reaching 75% in Moldova (UNESCO-UIS (2007)) and 38% in Russia (Kuzminov (2010))<sup>37</sup>. Compared to tertiary education, the share of private funding at pre-school and general secondary levels is insignificant, reflecting the marginal importance of private kindergartens and private secondary schools as opposed to public ones. In specialized vocational education, the paid forms of advanced vocational training, mostly short-term programs, complement a severely downsized network of public vocational schools.

*Reform of education structure.* The transition to a market economy in the reviewed countries has led to a significant restructuring of school systems and a decline in the number of vocational institutions and students. It has also led to a break in the interrelations between the unreformed VET institutions and the labor market. Figure 3.7 demonstrates the existence of a significant gap in the proportion of vocational students between the FSU region, on the one hand, and SEE and EU NMS countries, on the other. In several FSU countries, the scarce supply of skilled workers is currently hindering job creation, employment and productivity. In Russia, for example, a severe reduction in the number of technical colleges

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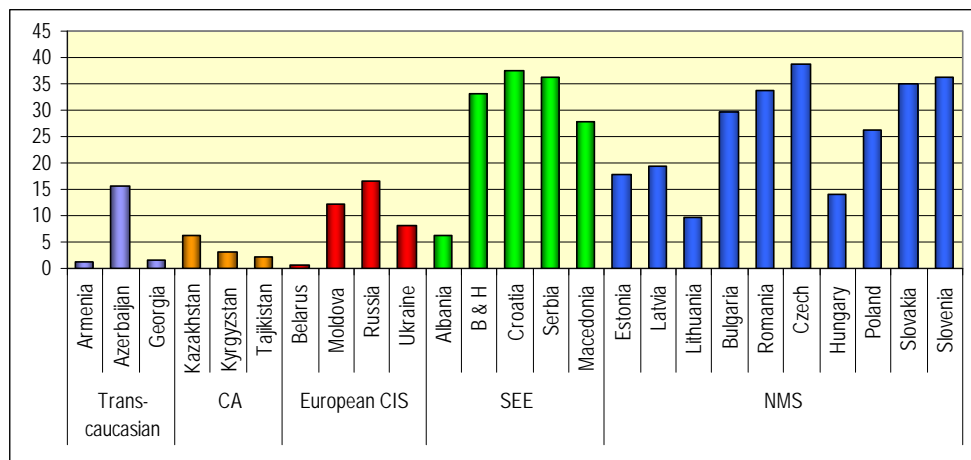
<sup>35</sup> In Russia, for example, the most prestigious and best-funded public schools bring in three times more students from the most affluent families than from the lowest-income families (Konstantinovskiy et al. (2007)).

<sup>36</sup> In Georgia, the poorest students are about 20% less likely to complete secondary school than students in the richest quintile, although primary completion rates are comparable (UNICEF (2009)).

<sup>37</sup> In fact, in Russia this proportion has declined from over 60% in the early 2000s due to a more rapid growth of federal HEI funding as compared to household expenditures.

(from over 5,000 twenty years ago to about 900 today) was substituted by a considerable increase of tertiary graduates, which led to a depreciation of tertiary education skills, with university graduates often taking positions not really requiring this level of education.

**Figure 3.7. Technical/vocational enrolment in ISCED 2 and 3 as % of total enrolment in ISCED 2 and 3 (2009 or latest available year)**



Source: UNESCO Institute for Statistics.

The issue of restoring a wide network of VET institutions is being discussed in Russia with the close involvement of the employers concerned; a new VET strategy based on the decentralization of providers and an increasing role for stakeholders is under discussion in Moldova; in Georgia, two new types of professional education institutions, namely colleges and professional education centers, are being set up (since 2007). In 2006, Belarus launched a government program of VET development that envisaged more integration with secondary specialized and tertiary education, and more flexibility with respect to labor market needs, i.e. links between enterprises and VET schools, including channeling money from enterprises' innovation funds to support VET schools' basic assets.

Integration into the *Bologna process* became an essential part of the reform of tertiary education systems in the majority of FSU countries. Russia joined the Bologna process as a full member in 2003; in 2005, it was joined by Ukraine, Azerbaijan, Armenia, Georgia, and Moldova; in 2010, Kazakhstan also joined this process and Belarus declared the intention to join in 2012. All the countries pursued similar goals – to integrate into the European Higher Education Area, to modernize national university systems by means of cooperation with European universities, to introduce comparable degrees, qualifications and credit equivalency in

order to promote the acknowledgment of national diplomas, to assist national students and specialists in achieving equal status worldwide, and to increase the mobility of students and university lecturers.

The progress to date in adapting European norms and standards varies. For example, Ukraine is reported to have implemented more of the Bologna Process objectives overall, including the European Credit Transfer System (ECTS) and the degree cycles, while Russia has made progress in the diploma supplement, and both countries are at a similar level of quality assurance (Luchinskaya and Ovchynnikova (2011)). However, there are also many implementation shortcomings and obstacles. Transparent quality control systems ensuring the proper implementation of Bologna objectives, such as curricula reforms, are virtually nonexistent. HEIs lack the flexibility and autonomy to adapt the curricula and standards set by national education ministries to Bologna criteria. The hybrid situation, in which some new standards and criteria are introduced but important elements of the old system have been preserved (Gaenzle et al. (2009)), is typical. Both in Russia and Ukraine, universities, as a rule, offer BSc diplomas in the middle of their standard 5 or 6-year *specialist* programs; the transition to a real MS qualification has not been completed yet. More than 90% of all Russian students still choose a specialist degree program despite the introduction of bachelor's and master's programs, since the labor market generally regards BSc diplomas as inferior to traditional education, thus the MS stage remains mandatory for most graduates.

As was shown above, most countries under review still face serious resource misallocation problems, especially in general education, which is has been additionally aggravated in recent years by the decline of school age cohorts. There is a considerable time lag in the reduction of school networks and personnel. The region still has an excessive number of schools, combined with very low student/teacher ratios. In most cases, school management and budget allocation are centralized and based on past trends.

To address these problems, many OECD countries have been adopting the *per student financing* (PSF) approach, which has become a standard practice across Europe. Instead of detailed budgets with fixed categories decided by central governments, local authorities and/or schools are given fixed amounts of financing based on the number of students enrolled in their systems. The assumption is that local authorities and schools have a better understanding of how budgets should be structured, as well as the incentives to allocate them efficiently. The expected outcome is that the same size budgets under local control will produce better quality education.

Yet attempts to introduce PSF in FSU countries have encountered serious difficulties: efficiency, quality and equity improvements are possible, but not guaran-

teed. The practice demonstrates that the PSF scheme is very sensitive to the local environment, i.e. the ability of local authorities to re-allocate resources to/from other areas, or the very high costs of closing schools in some regions which outweigh the benefits. Local governments and education entities lack real budget autonomy and the experience to use flexible financing schemes, etc. Besides the financing formula, the required reform should provide for an expansion of the autonomy of local authorities and/or education units, as well as clear and transparent accountability rules allowing for external monitoring of education quality.

A pilot project on the implementation of the PSF system in three regions of Russia clearly showed that it is impossible to achieve efficiency and quality improvements if the total amount of education funding is inadequate (World Bank (2004)). The institutions which are needed to make the PSF system operational and to ensure school accountability, particularly the school-level Boards of Trustees and the mechanisms to strengthen the role of parents, have to be created and/or strengthened.

A PSF approach in allocating education budgets is either being developed or is currently on the agenda in most FSU countries. To date, the PSF system has been widely introduced only in Armenia (2005) and in Georgia (2007). Pilot PSF schemes on various scales were in operation in Russia (since 1998), Kyrgyzstan (2006), Tajikistan (2005), and Uzbekistan (2008). The issue is being actively discussed in Azerbaijan and Moldova, while in Belarus, Kazakhstan and Ukraine, the process has not yet started or is still in very early stages (Sondergaard (2010)).

### **3.3. Spending trends before and during the crisis**

The share of GDP spent on education is often seen as a measure illustrating the degree of support to this sector. This proportion varies from 2.8% in Armenia and Kazakhstan to 9.6% in Moldova. Surprisingly, major oil exporters (Russia, Kazakhstan and Azerbaijan) demonstrate quite modest shares. In the decade of the 2000s, spending increased in Russia, Moldova, Ukraine, Georgia, and Kyrgyzstan but decreased in Belarus. Still, the region's average remained lower than the EU27 average of 5.1% of GDP in 2001-2006 (EACEA (2010)). However, according to UNESCO data, the median of European FSU countries (5.2% of GDP in 2007) was higher than in EU NMS (median of 4.8% of GDP; from 3.6% in Slovakia to 5.7% in Slovenia). In CA, education spending increased in recent years, but their median (3.4% of GDP) remained lower than in European FSU countries. This is even more relevant for the Southern Caucasus, that have a median share of just

2.7% GDP. During the past decade, Moldova, Ukraine, Kyrgyzstan and Tajikistan recorded considerable growth in public expenditures on education, surpassing GDP growth rates. In CA, this growth resulted, to a great extent, from a growing share of a younger population.

The share of government budget allocated to education varied greatly: from ca. 20% of total expenditure in Kyrgyzstan, Moldova and Ukraine to less than 8% in Georgia (data for 2007). Public expenditures in Russia (about 12% of the consolidated budget) were at the level of EU NMS median, while they were considerably lower in Belarus – about 9%.

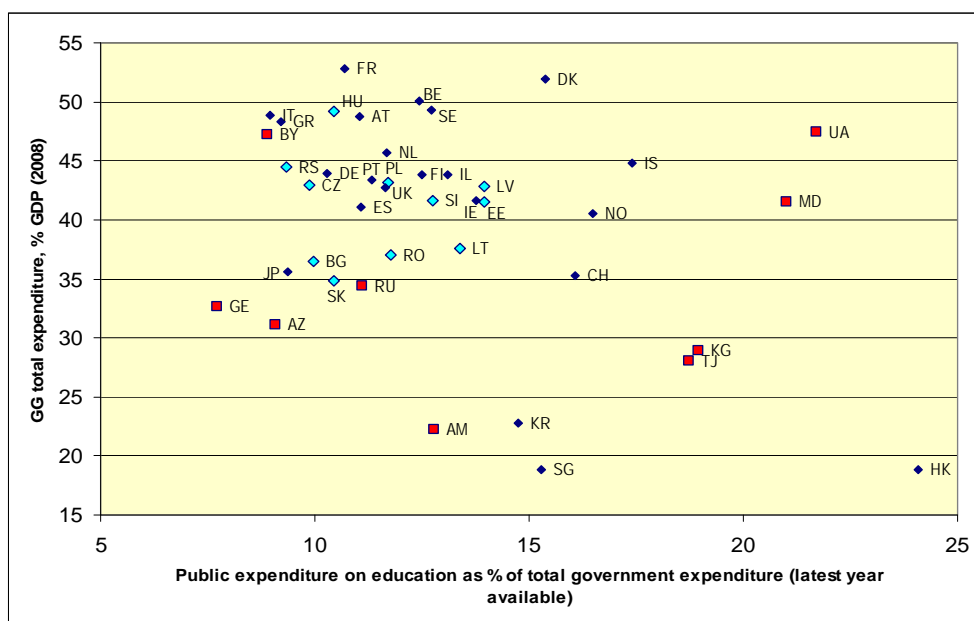
In the 2000s, the size of public education spending evolved in different directions: in Kyrgyzstan, the share of education expenditures in the total budget remained high during the whole decade; in Moldova and Ukraine, the share increased considerably (respectively by 25% and 37%), while in Belarus, spending shrank by almost one third. In Armenia, this share remained almost unchanged throughout the decade (about 12% of the total), while in Azerbaijan, it was reduced by almost 60%, and by the end of the decade it stayed at a relatively low level of 9%. However, the analytical value of this indicator is limited as it does not take into account the number of students and gives no information on unit cost per student.

The share of public expenditure allocated to education can only illustrate “public commitment to education” or “national effort” to finance education (Motivans (2010)). Figure 3.8 presents a comparative picture of such “national efforts” against “size of government”, i.e., the share of GG expenditure in GDP of the analyzed countries. The majority of European countries are characterized by rather moderate shares of public expenditures on education (10-15% of GG expenditures) and large government (40-50% of GDP), while most FSU countries (except Belarus) represent a different pattern. Russia, Azerbaijan and Georgia, while spending similar shares of their budgets on education, have smaller governments. Kyrgyzstan and Tajikistan allocate a higher share of their budgets to education due to a larger proportion of school-age population. Finally, Moldova and Ukraine record both high percentages of education expenditures and a “European size” of governments.

Figure 3.9 presents a cross-national comparison of public expenditure per student (at all levels) as a % of GDP per capita. FSU countries demonstrate diverse levels of public resources input per pupil: Moldova has the leading position (at close to 50% GDP per capita) and is followed by Ukraine, Belarus, and Kyrgyzstan, which are close to the level typical for most CEE countries. Other FSU countries fall considerably behind. On the other hand, if we take into consideration the large differences in development levels between the countries, the overall picture

will look different. An absolute measure of per student expenditures, controlled for differentials in living costs (in USD PPP), allows us to assess the sufficiency of public resources allocated to education. By this measure, only Belarus and Russia are close to the lowest CEE results demonstrated by Bulgaria and Romania, while all other countries fall far behind. These two complementary indicators clearly demonstrate that even though in many of the reviewed countries education expenditures have increased considerably in absolute terms (see Table 3.1), per pupil education funding still remains low by European standards.<sup>38</sup>

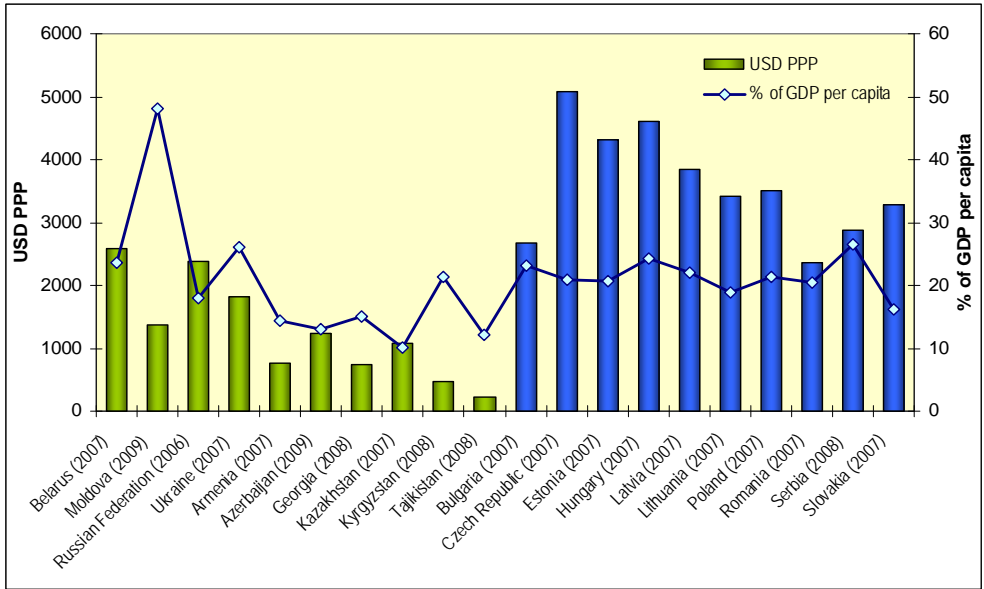
**Figure 3.8. Public expenditure on education as a percentage of total public expenditure vs. general government public expenditures as % of GDP**



Sources: UNESCO Institute for Statistics, IMF WEO database.

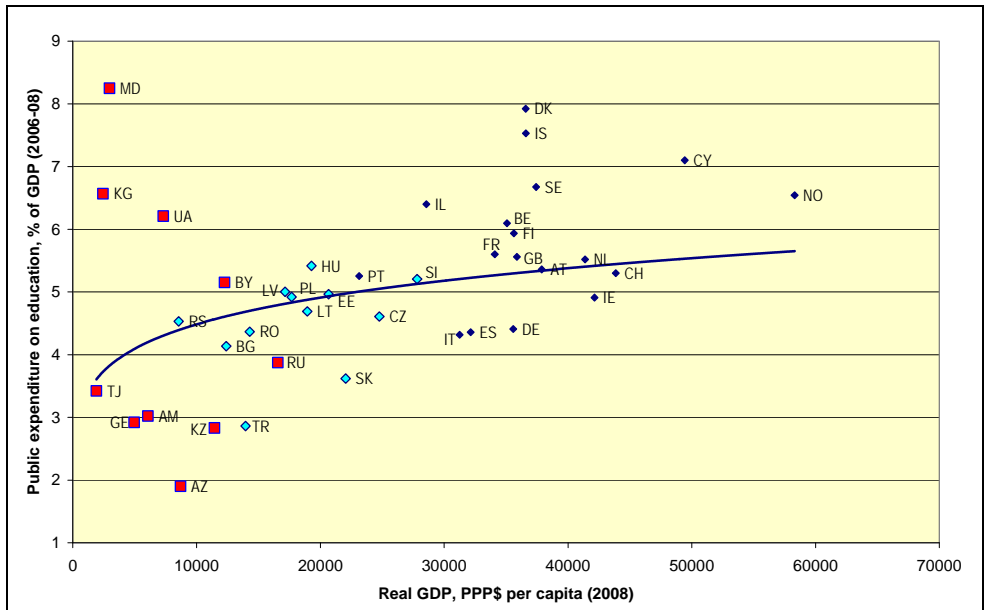
<sup>38</sup> To control for differences in the age structure (in younger societies with a large number of students it is more difficult to reach a comparable level of education expenditure as opposed to aging societies), we could compare Azerbaijan and Kyrgyzstan to countries with similar (“young”) demographic structures, like Colombia and Malaysia. In terms of per student education expenditure relative to per capita GDP (16.4% in Colombia and 15.0% in Malaysia), both fare slightly better than Azerbaijan, but considerably worse than Kyrgyzstan or Moldova. In absolute terms, however, per student public education spending in Azerbaijan is 84% of that in Colombia and 59% of that in Malaysia; for Kyrgyzstan, the respective percentages are just 32% and 22%.

**Figure 3.9. Absolute and relative measures of public resources allocated to all levels of education per student/pupil in FSU and CEE countries (latest available year)**



Sources: UNESCO Institute for Statistics, IMF WEO database.

**Figure 3.10. Public expenditures on education and real GDP per capita**



Sources: UNESCO Institute for Statistics, IMF WEO database.



Figure 3.10 plots the level of public education expenditure as a share of GDP against the level of economic development measured by GDP per capita in terms of PPP. Compared to other European countries with similar GDP per capita levels, Russia, Kazakhstan, Azerbaijan and Tajikistan are below the trend line while Moldova, Kyrgyzstan and Ukraine noticeably outperform their peers. Belarus occupies a position slightly above the trend line.

Table 3.1 shows that although in the mid-2000s, a growing trend in public expenditure per student was observed in the region, it was not necessarily transmitted down to all education levels in every country. For example, in Belarus, Kazakhstan and Tajikistan, public expenditures per student in tertiary education decreased, probably being substituted by household expenses. In Azerbaijan, tertiary education continues to absorb more public resources per student than basic or secondary levels. In Moldova, spending rates per student are nearly the same across all levels of education. The reverse proportion (lower spending for tertiary education) is true for Kazakhstan, Armenia, Georgia and Belarus.

**Table 3.1. Public expenditure per student by level of education, USD PPP**

Country	Year	All levels	Primary	Secondary	Tertiary	Country	Year	All levels	Primary	Secondary	Tertiary
Belarus	2005	2213.9			2369.0	Moldova	2005	785.8			
	2006	2660.2			2833.8		2006	891.2			961.4
	2007	2578.7			1984.8		2007	1060.2	881.9	1069.7	1087.5
	2008						2008	1199.4	1028.3	972.0	1167.2
	2009				1914.0		2009	1362.3	1204.5	1143.0	1308.2
Russia	2005	2033.5			1492.1	Ukraine	2005	1642.1			1817.0
	2006	2390.6			1747.1		2006	1896.2			1955.0
	2007						2007	1824.9			1761.5
Armenia	2005	497.3				Georgia	2005	434.1			
	2006	578.9					2006	601.0			
	2007	759.5					2007	617.0			
	2008		638.0	1093.0	397.7		2008	742.5	713.9	747.2	550.0
Azerbaijan	2005	423.3	268.4	429.5	438.0	Kazakhstan	2005	674.1			488.7
	2006	505.3	319.0	490.0	545.0		2006	886.9			826.0
	2007	564.9			585.1		2007	1088.4			857.9
	2008	738.6			807.2		2008				
	2009	1241.3			1492.7		2009				
Kyrgyzstan	2005	296.9			377.1	Tajikistan	2005	171.8			200.8
	2006	357.2			403.9		2006	181.4			169.9
	2007	465.3			452.4		2007	197.7			195.5
	2008	468.5			381.7		2008	217.4			390.9

Sources: own calculations based on UNESCO Institute for Statistics database and per capita GDP PPP from IMF WEO database.

A considerable share of public education spending in most countries is directed towards primary and secondary education which hypothetically could help improve basic indicators of education attainment. Pre-primary and primary education together comprise from around 11-12% of overall GG expenditures on education (in various years) in Ukraine to 15-17% in Belarus and Russia and up to 19-21% in Moldova. More than 55% of overall education expenditures are spent on secondary education in Moldova and Russia; in Belarus this share is somewhat lower (around 50%), while in Ukraine it hardly exceeds 40%. As for tertiary education, Ukraine is the leader in relative funding proportions (around 30%); in Moldova and Russia, the respective shares are considerably smaller (17%), and in Belarus they account for only 10% of the overall public education funding. This is in line with the government policy directed at more commercialization in tertiary education in Belarus and Russia, which reduces pressure on public expenditure.

The proportions of spending for different levels of education within each country have been evolving over time in response to policy changes. For example, Belarus and Moldova increased their absolute and relative funding of pre-primary education during the pre-crisis years. In Belarus, this was the result of the government's desire to meet the social standard in terms of the amount of places in pre-school institutions (85% of pre-school age children); in Moldova, it was a response to the under-financing of this level of education in the previous period.

*Education expenditure structure by funding sources.* Inadequate funding from public sources has been reflected in the increase in private expenditures<sup>39</sup> on education in the analyzed countries. It was also stimulated by policies encouraging private sector involvement in the provision of education services as well as the expansion of fee-based services provided by public educational institutions. Unfortunately, international statistical sources provide very scarce comparable data on private education funding in the reviewed countries. In most cases, these data cannot be obtained from national sources either, since apart from official tuition fees, these expenditures also include various formal and informal payments, such as fees for extracurricular activities, sponsorship ("charity") contributions, charges for board, school security, uniforms, repairs, furniture and equipment, unspecified "school needs", as well as spending for private tutors (often representing a disguised bribe for admission), gifts to teachers, etc., all of which are common in the FSU region.

In addition, national treasuries fail to provide information on all sources of funding. In Russia, for example, expenditures by commercial and non-commercial entities on education are not included into the total amount of education expenditures. Still, according to the Russian Federal Treasury, the proportion of private expendi-

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<sup>39</sup> Private expenditures include tuition fees (and all other payments) by households, businesses and non-profit associations.

tures in funding secondary education was close to 15% in 2008, and the volume of fee-based education services reached 0.79% of GDP. UNESCO assesses total expenditure from private sources in all levels of educational institutions at 0.5% of GDP in Moldova, 0.2% in Azerbaijan, and 0.8% GDP in Kazakhstan.

Private funding sources are more widespread in tertiary education; and thus universities have become less dependent on government budgetary resources. National household budget surveys provide data on the growing role of education expenditures in family budgets, which negatively affects the equality and accessibility of education. Besides, the perceived connection between private and public spending is still weak, and public money spent on education is still considered in public opinion to be “free money”. This results in strong social pressure on governments to continue free educational services which is proving to be increasingly unrealistic due to fiscal constraints.

In some lower-income FSU countries, *international aid* is another important source of education funding<sup>40</sup>. In 2006, donor aid accounted for 10% of total education spending in Moldova, 13% in Kyrgyzstan, and nearly 20% in Georgia. The raw data on aid in constant 2006 USD also suggest that foreign aid could play a significant role in Armenia (USD 38 mn in 2006), Uzbekistan (USD 26 mn in 2006) and Tajikistan (USD 18 mn in 2006). In most countries, donor aid goes primarily to support post-secondary education. This is true for the European FSU countries (excluding Moldova in 2006) and the Caucasus (excluding Azerbaijan in 2005). On the contrary, CA received a higher proportion of donor aid directed at basic and secondary education (UNESCO (2009)). In Kyrgyzstan, the donor-funded Public Investment Program finances capital investments (new construction and school repairs, textbooks and learning materials, etc.) and the re-training of teachers in pre-schools and primary and secondary schools.

In view of fiscal constraints, the importance of foreign aid in supporting the education sector in low-income FSU countries cannot be overestimated. In the absence of international aid, these countries will face problems in protecting spending on education. Still, according to UNESCO, while overall aid is rising, several major donors are falling far short of their pledges (UNESCO (2010)).

*Recurrent vs. capital expenditures.* Expenditures of public-sector educational institutions fall into two broad categories – current and capital. Current expenditures include wages and costs related to staff and other current expenditures such as maintaining buildings and purchasing educational materials and operational resources. Current expenditures represent more than 90% of total spending by

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<sup>40</sup> Due to data limitations, we can provide only a few examples of the relative importance of this source.

public institutions at all education levels in all countries for which comparable data is available (Table 3.2). As far as the tertiary level, the share of current expenditures is a bit lower, although it exceeds 84% in all countries. Spending on personnel overshadows all the other categories.

**Table 3.2. Public expenditures on education, economic classification, % of total**

Country	Year	Primary, secondary and post-secondary education (ISCED levels 1-4)				Tertiary education (ISCED levels 5-6)			
		Capital	Total current expenditure	Other current expenditure	Salaries	Capital	Total current expenditure	Other current expenditure	Salaries
<b>EUROPEAN FSU</b>									
Belarus	2004	<i>5.1</i>	<i>94.9</i>	<i>27.7</i>	<i>67.3</i>	5.5	94.5	40.1	54.4
	2005	<i>5.1</i>	<i>94.9</i>	<i>25.5</i>	<i>69.5</i>	5.8	94.2	38.9	55.3
	2006	<i>5.3</i>	<i>94.7</i>	<i>23.9</i>	<i>70.8</i>	11.6	88.4	35.1	53.3
	2007					8.7	91.3	37.5	53.8
	2009					5.8	94.2	21.0	73.1
Moldova	2006					0.0	100.0	33.3	66.7
	2007	<i>8.3</i>	<i>91.7</i>			12.7	87.3	31.8	55.4
	2008	10.9	89.1	29.5	59.6	13.9	86.1	31.2	54.9
	2009	6.5	93.5	25.7	67.8	4.9	95.1	34.4	60.8
<b>CAUCASUS</b>									
Azerbaijan	2002	<i>1.4</i>	<i>98.6</i>	<i>30.5</i>	<i>68.1</i>	0.4	99.6	41.8	57.7
	2003					0.5	99.5	36.2	63.2
	2005	<i>2.8</i>	<i>97.2</i>	<i>27.7</i>	<i>69.6</i>	1.4	98.6	38.2	60.4
	2006	<i>2.0</i>	<i>98.0</i>	<i>24.5</i>	<i>73.5</i>	0.6	99.4	40.5	58.9
	2007					0.9	99.1	46.5	52.6
	2008					1.7	98.3	47.8	50.5
	2009					2.2	97.8	41.2	56.7
<b>CENTRAL ASIA</b>									
Kazakhstan	2002	<i>3.7</i>	<i>96.3</i>	<i>30.2</i>	<i>66.1</i>	20.1	79.9	39.9	40.0
	2004	<i>4.4</i>	<i>95.6</i>	<i>31.2</i>	<i>64.5</i>	22.5	77.5	38.9	38.6
	2005	<i>6.2</i>	<i>93.8</i>	<i>13.7</i>	<i>80.1</i>	17.5	82.5	28.4	54.0
	2006					14.0	86.0	44.4	41.6
	2007					15.4	84.6	43.3	41.3
Kyrgyzstan	2005					6.9	93.1	32.4	60.8
	2006					7.3	92.7	28.5	64.2
	2007					10.5	89.5	23.8	65.7
	2008					13.3	86.7	20.8	65.9

Note. Figures in italics are UIS estimates.

Source: UNESCO Institute of Statistics database.

The share of salaries tends to grow over time in all countries and across all levels of education. This trend was particularly evident in 2009, when protecting salaries from a dramatic fall became a policy priority. In Moldova, this was done at the cost of capital expenditures, while in Belarus and Kyrgyzstan, it was at the cost of other current expenditures.

Capital expenditures represent a considerably smaller portion of overall spending. Their proportion is 4-5 percentage points higher in tertiary education (as compared to other levels). Kazakhstan and more recently, Kyrgyzstan, are exceptions, as their higher capital expenditures reflect more substantial investment in infrastructure. In most countries, an increase in educational expenditures has not been translated into increases in their capital component: the large share of wage and utility expenditures leaves little funds for other education-enhancing inputs such as textbooks or training materials, as well as for capital outlays such as laboratories, computers, internet connection and the like. Moreover, expenditures for maintenance and repair of educational facilities and capital outlays are declining due to the pressure of increasing recurrent spending. Just a few countries (like Moldova and Kazakhstan) tend to maintain (or even increase) the proportion of capital investments.

At the same time, in most countries, average wages in education remain considerably lower than national averages; this fact is often explained by the persistence of excessive numbers of school staff. Delays in restructuring school networks and personnel reduction will not allow for the necessary shifts in the structure of funding in favor of capital expenditures. On the other hand, the slow growth of real wages during the crisis has increased pressure to prioritize this spending item and delay capital investments until “better times”. Moreover, budget constraints have put capital expenditures in education at the top of the list of potential spending cuts.

*Levels of funding.* The division of spending responsibilities among various levels of government differs across FSU countries. The management of financial resources is comparatively more centralized in Georgia, where school funding is provided mostly by the state budget. Regional budgets are the main source of financing pre-primary, primary and secondary education in Belarus, Moldova, Russia, Ukraine, and Kyrgyzstan. Financing tertiary education is predominantly the responsibility of the central budget in most countries, while the responsibility for VET funding is usually split between the regional and central levels, depending on the size of the country.

In the majority of countries, due to considerable budget centralization, the resources of sub-national budgets are, however, very limited and they must depend on considerable transfers from central budgets. The largest transfers between the central levels and regional/local levels occur in Russia, Ukraine, and Kyrgyzstan.

*Crisis impact: Policy outcomes.* In response to the crisis, countries in the region undertook ad hoc expenditure cuts in education aimed at reducing high fiscal deficits. Among the most prominent losers (in terms of shares in total spending) were general (basic) vocational and secondary specialized education (in Kyrgyzstan, Belarus, and Ukraine) and, to a lesser extent, tertiary (Kyrgyzstan, Belarus) and secondary (Ukraine, Belarus) education levels.

As shown in Table 3.3, individual expenditure items suffered to various degrees. A drop in funding for the residual categories, like “other education measures and facilities”, “research and development”, “out-of-school education”, and the “education facilities material support”, was registered in all FSU countries. However, the trend to protect wages and salaries at the expense of capital investments was not uniform during the crisis. For example, in Belarus, frozen wages (for the whole budget sector) became the main instrument for cutting public expenditures in real terms in 2009. During the most severe phase of the crisis (2009), the role of categorical grants in education financing increased while the share of local budgets’ own funds decreased (Kyrgyzstan and Russia).

*Crisis impact: Quantitative overview.* As GDP decreased throughout the course of the crisis, education expenditures tended to grow in relation to GDP. For example, in Ukraine, GG spending on education went up from 6.15% GDP in 2007 to 6.43% in 2008, and finally up to 7.3% GDP in 2009. Similar trends were observed in all other analyzed countries, with the exception of Belarus (see Table 3.3). Yet this indicator only provides evidence that the absolute GDP contraction or reduction in the rates of growth was more intensive than the decline in public education spending.

**Table 3.3. Public education spending in pre-crisis and crisis period, % GDP**

	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Belarus	5.7	5.1	4.9	5.1
Moldova	8.0	8.2	9.4	<i>10.3</i>
Russian Federation	4.0	4.0	4.6	4.3
Ukraine	6.2	6.4	7.3	<i>7.1</i>
Kyrgyzstan	6.5	5.9	6.2	<i>6.2</i>
Georgia	2.3	2.2	2.7	2.3

*Note.* Figures in italics are 2010 budget appropriations or 2010 budget execution preliminary estimates.

*Sources:* National ministries of finance/national treasuries of the respective countries; for Georgia, data are taken from the Georgia country study.

In all the analyzed countries, both total public expenditures and education funding were relatively rigid and displayed slower growth rates or contracted to a lesser extent than real GDP. In Moldova and Russia, real expenditures on education

increased during the crisis (2009 relative to 2008), following the growth of total real GG expenditures. Moldova and Georgia demonstrated higher rates of education spending growth as compared to total public expenditures, while in Russia, education expenditures grew slower than overall real GG expenditures. Ukraine and Belarus cut education spending, but to a considerably lesser extent than GG expenditures. Figure 3.11 illustrates the changes in real expenditure patterns.

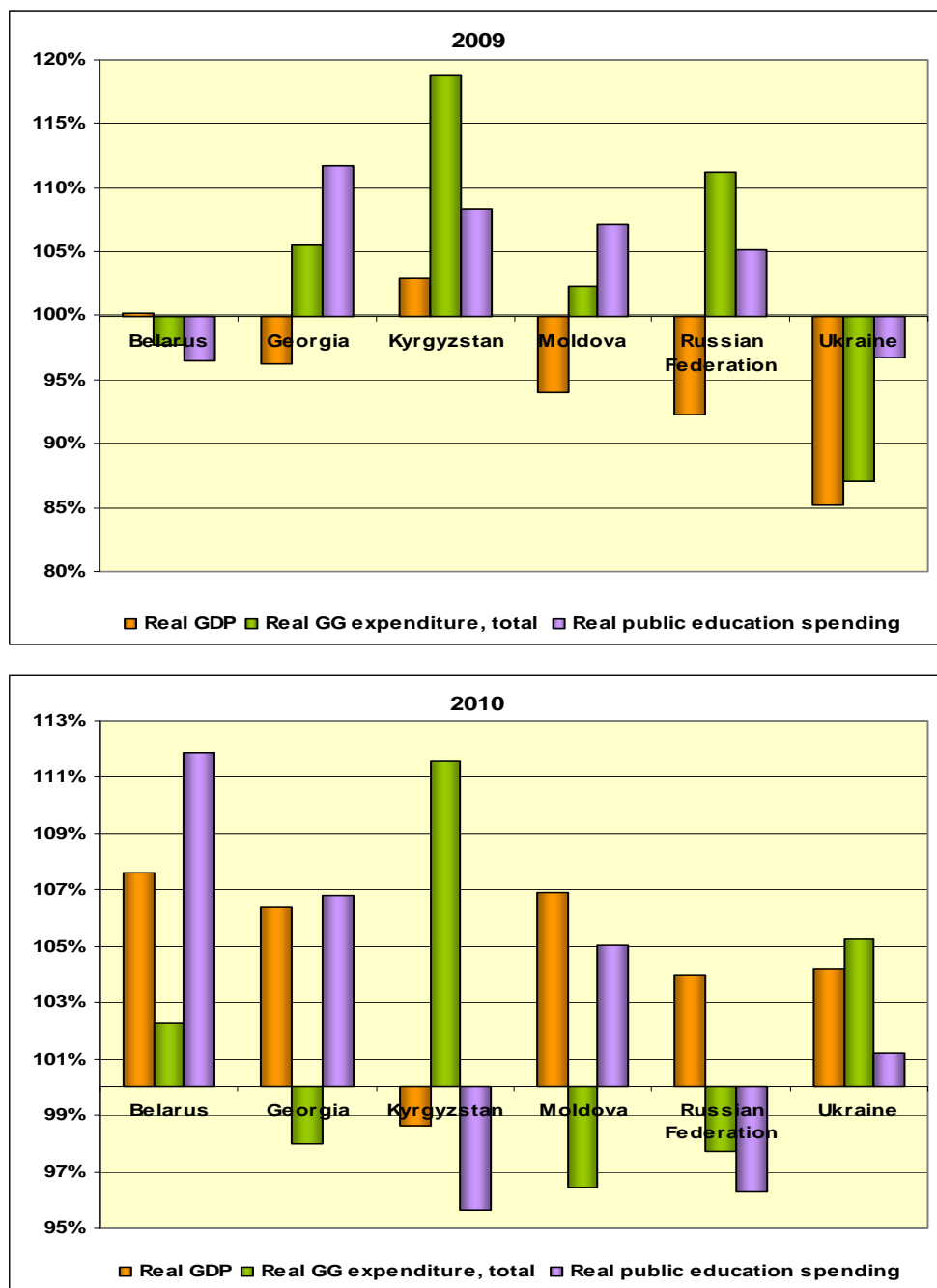
The rigidity of education expenditures means that cuts in education funding will probably come with a certain time lag. As mentioned earlier, the bulk of expenditures finances teacher salaries, which cannot be easily adjusted. The governments are unlikely to lay off teachers and close schools during the school year.

In 2010 the delayed effect of the crisis was observed in some countries. For example, Kyrgyzstan and Russia recorded a contraction in public education funding relative to GDP. On the other hand, in those countries where education spending was reduced in absolute terms during the crisis (Belarus and Ukraine), it resumed its growth in 2010.

*Crisis impact: Efficiency of spending.* Higher/lower spending and enrolment do not necessarily lead to an improvement/worsening of education outcomes. Research on the link between government education spending and education outcomes has highlighted the significance of other factors, namely (i) efficiency of public spending, (ii) its intra-sectoral allocation, (iii) private education spending, and (iv) governance (Grey et al. (2007)).

It is also unclear which (if any) crisis-induced changes in education spending patterns will be permanent. Some of the reform initiatives aim at a more efficient use of available resources. These include the optimization of school networks, the introduction of “funds-follow-student” formulas, and the transfer of responsibilities for school management and funding to municipalities and nongovernmental organizations. All of these efforts are aimed at improving incentives for efficient resource use and increasing accountability (Kyrgyzstan, Moldova, Georgia, Kazakhstan). The reform of the budgetary sector organization in Russia, aimed at transforming state-owned (municipal) institutions into autonomous units, is also a step towards a transition from cost management to results-based management, which enhances cost-efficiency. In Ukraine, the inefficiencies are still rooted in the centralized procedures of school budget formation, i.e., administrative limitations of staffing, wage funds, teaching hours, etc. Giving greater autonomy to schools would remove many of the existing spending inefficiencies and contribute to improving education quality in Ukraine.

Figure 3.11. Real GDP, total government expenditure and education spending growth, 2009-2010



Sources: same as for Table 3.3.



In the near future, a substantial increase in education funding can hardly be expected in FSU countries. Realistically, public spending on education is likely to decrease in real terms. Therefore a radical improvement in the efficiency of education spending and a greater reliance on private resources seem to be unavoidable. During the crisis, the countries under review pursued different strategies to improve spending efficiency. In Kyrgyzstan, insufficient government resources were increasingly supplemented by household spending on education. In other countries, these measures aimed at relying more on private resources (e.g., textbook rental fees), concentrating the available public resources on priority levels of education (e.g. primary and basic secondary education), and/or introducing effective feedback mechanisms (e.g. per capita financing schemes, school boards empowered to oversee all financial operations). In Belarus, a clear downward trend is observed in real per capita funding for secondary specialized and tertiary education. As a result, a greater percentage of HEI students finance education from their own pockets or use enterprise funds, while the share of those who study for free is declining. Thus we may argue that during the crisis, FSU countries pursued policies aimed at greater commercialization of secondary specialized and tertiary education, thereby reducing pressures on public finances.

## 4. Healthcare

### 4.1. Health expenditure drivers

The factors influencing health expenditures include the size and organization of a country's health system, the availability of resources within this system, the intensity of utilization of system resources, and the role of government in health services provision. Health system performance and health expenditures are also dependent on the socio-economic framework and the population's lifestyle. All of these factors are discussed in this section. The dynamics of total and public expenditures on healthcare in six FSU countries are analyzed in section 4.2; the resources spent against health outcomes (mortality, morbidity and equity of access to healthcare) are compared briefly in section 4.3.

To reveal common and country-specific trends in public health expenditures during the crisis, both long-term and medium-term trends in the six countries' health systems are taken into consideration. These trends are also compared with developments in the health systems of the EU countries and the EU new member states (EU NMS).

The high (in fact, the highest in the world) numbers of inpatient care facilities and staff and, at the same time, the rather low number of primary healthcare units (below the values in the EU or in the EU NMS, with the exception of Belarus) were a typical feature of the Soviet healthcare system (see data for 1989 in Table 4.1). In this respect, there was relatively little variation between different Soviet republics. The extensive network of health facilities in the FSU also implied a higher utilization of health services by the population as data in Table 4.2 suggests. Both inpatient and outpatient care indicators in the FSU were higher than in the EU and in the then-socialist EU NMS.

In the course of the post-Soviet transition, all of the republics had to reduce their hospital facilities (see 2009 data for the number of hospitals and hospital beds in Table 4.1). In the three smaller countries (Georgia, Kyrgyzstan, and Moldova), these adjustments were dramatic – two or three-fold reductions, while in the three larger countries (Belarus, Russia, and Ukraine), the number of hospitals and beds fell by 20-40%. The trends for other indicators were less homogenous. The number of primary health units increased in Belarus, Moldova and Ukraine, and fell in the three other countries. The number of health staff – physicians and nurses

– was mostly falling (sometimes radically as in the case of Kyrgyzstan); however, in Belarus, the availability of both doctors and nurses increased for the same period of time.

**Table 4.1. Healthcare resources, per 100,000 population**

	Hospitals		Primary healthcare units		Hospital beds		Physicians		Nurses	
	1989	2009	1989	2009	1989	2009	1989	2009	1989	2009
Belarus	8.6	6.8	55.5	58.1	1358	1107	388	511	1 147	1244
Georgia	7.4	6.0	27.2	11.4	1000	309	497	467	1 068	346
Kyrgyzstan	6.9	2.8 <sup>b</sup>	32.2	15.2 <sup>b</sup>	1197	506 <sup>b</sup>	337	238 <sup>b</sup>	876	543 <sup>b</sup>
Moldova	7.7	2.3	13.8	20.9	1273	609	357	310	975	742
Russia	8.2	4.5 <sup>c</sup>	12.6	9.0 <sup>c</sup>	1319	966 <sup>c</sup>	409 <sup>f</sup>	431 <sup>c</sup>	823	806 <sup>c</sup>
Ukraine	7.2	5.4	12.2	15.0	1301	864	427	315	1 159	784
For reference:										
European Union	3.2	2.6 <sup>a</sup>	n/a	49.3 <sup>d</sup>	806	529 <sup>a</sup>	260 <sup>e</sup>	328 <sup>a</sup>	702	792 <sup>a</sup>
EU NMS	2.5	2.6 <sup>a</sup>	36.3	61.3 <sup>b</sup>	1024	681 <sup>a</sup>	251	271 <sup>a</sup>	582	591 <sup>a</sup>

Notes. a – data for 2008, b – data for 2007, c – data for 2006, d – data for 2005, e – data for 1996, f – data for 1985.

Source: HFA-DB.

**Table 4.2. Utilization of healthcare resources**

	Inpatient care admissions per 100 people		Average length of stay in hospital, days		Outpatient contacts per person per year	
	1989	2009	1989	2009	1989	2009
Belarus	26.1	30.0	15.1	11.5	10.5	13.1
Georgia	14.4	7.2	14.9	6.3	8.2	2.0
Kyrgyzstan	24.3	15.1 <sup>a</sup>	15.1	10.5 <sup>a</sup>	6.2	3.5 <sup>a</sup>
Moldova	24.2	17.8	16.1	10.0	8.6	6.3
Russia	23.8	23.7 <sup>b</sup>	16.2	13.6 <sup>b</sup>	9.8	9.0 <sup>b</sup>
Ukraine	25.2	22.3	16.1	12.7	9.8	10.7
For reference:						
European Union	17.3	17.7	14.0	8.6 <sup>a</sup>	7.7	6.2
EU NMS	17.6	21.0	13.2	7.4	8.9	7.7

Note. a - data for 2008, b – data for 2006.

Source: HFA-DB.

The health system output indicators (Table 4.2) of the three smaller countries under consideration demonstrated a sharp decline in 2009 in comparison to 1989.

The utilization of health services in Russia and Ukraine fell modestly, and it increased in Belarus in 2009<sup>41</sup> in comparison to 1989.

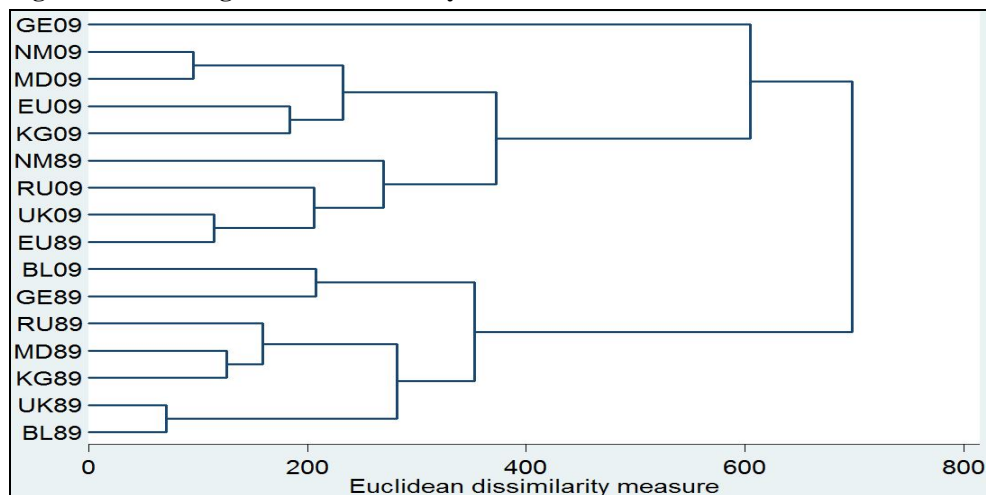
The evolution of the health systems (from the point of view of the availability and utilization of healthcare resources) could be described using cluster analysis (Figure 4.1). As follows from the dendrogram, the systems of all six FSU countries were, indeed, pretty similar to each other in 1989 and quite distant from the EU's. In 2009, the situation appeared to be diverse: in Belarus, the system remains closest to its 1989 shape; the system resources in Russia and Ukraine are now similar to the EU's 20 years ago; Moldova is now very close to the EU NMS; Kyrgyzstan now has resource indicators at levels relatively (and formally) close to the modern EU values; finally, Georgia has built a system which is dissimilar to any other country/group of countries. Thus, Belarus is an outlier, that has made the least progress in rationalizing healthcare resources; on the other pole, Kyrgyzstan and Moldova have rationalized their systems to the extent that they are at least quantitatively comparable to those of the EU and the EU NMS. Russia and Ukraine have been implementing a less radical downsizing of their systems and still use considerably more resources per capita than the EU. In Georgia, the reforms resulted in a system of many small hospitals<sup>42</sup> and physicians and the least developed primary and outpatient care network.

The demand for health services and health system performance depend on the socio-economic status and lifestyle of the population; the health outcomes in systems with similar resources could be very different depending on the population's age composition, nutrition status, prevalence of healthy lifestyles, etc. Some indicators describing socio-economic factors affecting health status in these countries are provided in Table 4.3. The level of urbanization indicates how easy/difficult it is to access specialized healthcare services, which are mostly provided in large cities or country capitals. From this perspective, the situation is better in the three larger and richer countries, where the level of urbanization is around 70%. In the three smaller countries, half to two-thirds of the population live in rural areas; these people have to travel to access health services not included in the basic package accessible at primary healthcare units or rayon hospitals.

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<sup>41</sup> The average length of hospital stay fell in Belarus, but it fell even more in the EU, which did not undergo a radical transformation. So, this seems to illustrate a general trend affecting all health systems.

<sup>42</sup> In 2009, a hospital in Georgia had 52 beds on average (compare with 160-265 beds per hospital in other countries/ country groups under consideration).

**Figure 4.1. Dendrogram of healthcare systems**

Note: The dissimilarity measure is average-linkage Euclidean distance based on four input<sup>43</sup> and three output<sup>44</sup> indicators. Case labels consist of the country code (BL – Belarus, EU – European Union, GE – Georgia, KG – Kyrgyzstan, MD – Moldova, NM – EU NMS, RU – Russia, and UK – Ukraine) and the year code (89 – 1989, 09 – 2009).

Source: Authors' calculations.

**Table 4.3. Socio-economic and lifestyle indicators affecting healthcare**

Country	Urban population, % of total	Population ages 65 and above, % of total	FR, total, births per woman	Calorie intake, kcal/person/day	Gini coefficient	Smoking prevalence, % of population aged 15 and above	Alcohol consumption, liters of pure alcohol per adult
	2009	2009	2008	2007	2007	2006	2003-2005
Belarus	73.9	13.6	1.42	3 146	0.29	41.2	15.1
Georgia	52.8	14.3	1.58	2 859	0.41 <sup>a</sup>	29.5	6.4
Kyrgyzstan	36.4	5.2	2.70	2 644	0.33	23.4	5.1
Moldova	41.5	11.1	1.50	2 771	0.38	23.8	19.2
Russia	72.8	13.1	1.49	3 376	0.44	47.1	15.7
Ukraine	68.0	15.7	1.39	3 224	0.28 <sup>b</sup>	42.6	15.6
For reference:							
EU	73.8	17.3	1.59	3 481	...	30.9	...
EU NMS	67.5	16.2	1.46	3 371	...	...	...
WHO Europe	...	...	...	...	...	...	12.2

Note. a – data for 2005, b – data for 2008.

Sources: WDI, WHO.

<sup>43</sup> All included in Table 4.1 except for the number of primary health care units.

<sup>44</sup> All included in Table 4.2.

Five of the six countries under consideration (all but Kyrgyzstan) have low birth and fertility rates (FR) and a large share of population aged 65+. On the one hand, this means that the child healthcare agenda in these countries becomes less acute and, similarly to the education system, there is the issue of the optimization of specialized facilities for child/maternal healthcare. On the other hand, ageing of the societies increases demand for other kinds of specialized health services.

Data on average calorie intake are well correlated with the countries' GDP per capita, the wealthier the country, the higher the calorie intake. The intake values for all countries are well above the level of 2,100 kcal/person/day, which is used by the World Bank as a basis for the food (extreme) poverty line. Thus, hunger or severe malnutrition is not a problem in these countries.<sup>45</sup> However, the relatively high Gini coefficient in all countries but Belarus and Ukraine suggests that poorer categories of the population may have nutrition problems (not necessarily related to the calorie intake; the food structure could be insufficiently balanced) and face high risks of some "diseases of the poor," e.g., TB.

The prevalence of unhealthy habits (smoking and excessive alcohol consumption) is another potential source of health problems. As follows from the data in Table 4.3, Belarus, Russia and Ukraine have a high smoking prevalence and high alcohol consumption, both of which are well above the EU or ECA averages. Smoking is less of a problem in the three other countries. Moldova has the highest level of alcohol consumption in the ECA, while Georgia and Kyrgyzstan have lower values.

The socio-economic and lifestyle indicators above demonstrate that the group of countries under consideration is quite heterogeneous. Some countries have serious problems with some indicators but less with others. However, other countries represent an opposite combination of strengths and weaknesses. Taking country specifics into account seems to be important as it allows us to anticipate different outcomes for different health status indicators.

The organization of healthcare systems is, of course, a factor strongly influencing its effectiveness and efficiency. A detailed analysis of the systems' structure and financing mechanisms is outside the scope of this paper.<sup>46</sup> All FSU countries inherited health systems that were fully government-owned and mostly government-funded. The entire population was formally entitled to all available types of

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<sup>45</sup> E.g., child malnutrition rates reported in WDI are low (1-3%) for all analyzed countries.

<sup>46</sup> Comprehensive coverage of these issues can be found in the European Observatory on Health Systems and Policies (2010) and in the Observatory's country-specific publications of "Health Systems in Transition" series – see Atun et al (2008), Chanturidze et al (2009), Lekhan et al (2004), Meimanaliev et al (2005), Richardson et al (2008), and Tragakes and Lessof (2003).

healthcare services. Private health service providers played a marginal role, and private insurance did not exist. Prices for a broad range of medicines were heavily subsidized.

It follows from the sources cited in the previous paragraph that during the transition period, Belarus and Ukraine introduced minimal changes into the health systems inherited from Soviet times, retaining state guarantees of universal and unlimited access to free healthcare; no mandatory insurance mechanisms have been introduced in these two countries. Kyrgyzstan, Moldova and Russia implemented quite deep reforms of their health systems but they have not been completed yet. All three countries introduced mandatory health insurance (MHI), which includes some minimum guaranteed packages of health services available to all of the insured population free of charge or with minor co-payment. This, of course, reduced the government's responsibility for the provision of non-guaranteed services. Georgia implemented the most radical reform, providing publicly funded health services only for the population below the poverty line; people, who are not considered poor are expected to pay the full costs of health services themselves.

Summing up, the FSU countries started their independent development with very similar social and economic systems, including their healthcare systems. However, after twenty years of transition, the countries' health systems have diverged significantly due to differences in economy size, level of development, reform path and implemented policies.

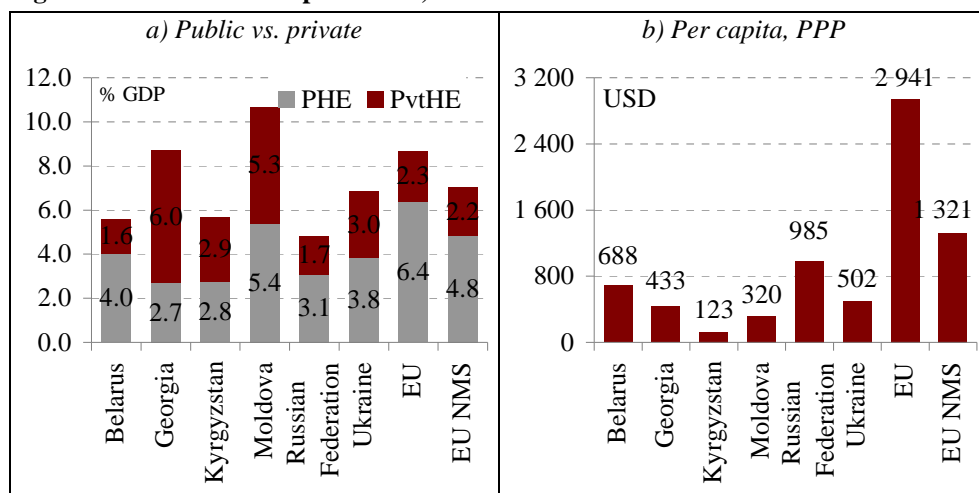
## **4.2. Public expenditures on health**

### **4.2.1. Public health expenditures before the crisis**

The large variation in all quantitative and qualitative characteristics of health systems discussed in section 4.1 results in large cross-country differences in total and public health expenditures. The priority assigned to healthcare by a society can be measured by the share of total health expenditures in GDP. In 2008, it varied from 4.8% GDP in Russia (the lowest value among the six countries under consideration) to 10.7% GDP in Moldova (the highest value, Figure 4.2a). Thus, the smallest country in the group (in terms of population, territory and absolute size of GDP) spends the largest share of GDP on healthcare, and, vice-versa - the largest (in all dimensions) country spends the smallest share of GDP on health. In other countries, total health expenditures were in the range of 5.6 to 8.7% GDP. For comparison, in the EU, the median share of total health expenditures in terms

of GDP was 8.7% in 2008; the median share for the EU NMS was 7.0% of GDP. So, Russia spends a smaller part of its GDP on health than most other countries in the FSU and Europe; in other analyzed countries, spending measured in % GDP is comparable to the medians for the EU and EU NMS.

**Figure 4.2. Total health expenditures, 2008**



Sources: WDI, WHO.

For healthcare effectiveness, however, the absolute size of expenditures may be more important than its value relative to GDP. Comparing the absolute size of total health expenditure per capita measured at PPP provides quite a different ranking of countries (Figure 4.2b). In 2008, Russia spent 985 current international USD per capita – the highest value among analyzed countries. Other countries spent considerably less. For example, Kyrgyzstan spent only USD123 per capita, which is the lowest value in the group. So there was a seven-fold difference between the highest and lowest spending per capita. All of these countries including Russia spend less on health per capita, not only in comparison to the EU (the 2008 median value was USD2,941), but also in comparison to the EU NMS (the median value was USD1,321).

The countries also differ widely in terms of the role and absolute size of public health expenditures (PHE, Table 4.4). By international comparison, the more developed a country is, the greater the role of the public sector in financing health services (European Observatory on Health Systems and Policies, 2010). However, this is not quite true for the six analyzed FSU countries. In terms of the share of public expenditure in total health expenditure, Russia – the country with the highest GDP per capita – ranks lower than Belarus. On the other end, Georgia, whose



GDP per capita is 1.5-2 times higher than Kyrgyzstan or Moldova's, has a much lower share of public expenditure in total health expenditures than those two countries. These deviations from the global trend originate in the various directions of healthcare reforms (or lack thereof) implemented in the post-Soviet period. As mentioned in section 4.1, all countries started with fully government-funded health systems and relatively low out-of-pocket expenditures and, correspondingly, a very high share of PHE in total health expenditures. Belarus was slow to reform its healthcare sector; it therefore not surprising that it retained the highest level of public expenditures, comparable to that in the EU countries. Ukraine was also not an active reformer, so it has a relatively high share of PHE, but it is still lower than in Belarus or Russia; the latter fact could be attributed to the above-mentioned relationship between the share of PHE and GDP per capita (Ukraine's GDP per capita is two-three times lower than its northern neighbors). Georgia implemented the most radical reforms towards privatizing health services, so it has the lowest PHE share in total health expenditures.

**Table 4.4. Public expenditures on health before and during the crisis**

	2006	2007	2008	2009
<b>Belarus</b>				
PHE, % of total health expenditure	74.7	74.8	72.2	70.6
PHE, % of total GG expenditure	9.9	9.5	8.2	8.8
PHE, % GDP	4.6	4.6	4.0	4.1
PHE per capita, PPP, current international USD	450	506	497	515
Real growth rate of PHE per capita, %	-1.2	10.4	-3.2	2.9
<b>Georgia</b>				
PHE, % of total health expenditure	26.8	27.6	30.9	28.7
PHE, % of total GG expenditure	7.0	6.3	7.3	7.5
PHE, % GDP	2.3	2.2	2.7	2.9
PHE per capita, PPP, current international USD	91	106	134	143
Real growth rate of PHE per capita, %	30.2	13.5	23.6	5.2
<b>Kyrgyzstan</b>				
PHE, % of total health expenditure	46.2	49.2	48.4	50.9
PHE, % of total GG expenditure	13.3	12.8	11.5	11.7
PHE, % GDP	3.0	3.2	2.8	3.5
PHE per capita, PPP, current international USD	53	64	60	77
Real growth rate of PHE per capita, %	27.2	17.4	-8.2	28.1
<b>Moldova</b>				
PHE, % of total health expenditure	48.4	49.1	50.6	53.7
PHE, % of total GG expenditure	11.7	11.7	13.0	14.1
PHE, % GDP	4.7	4.9	5.4	6.4
PHE per capita, PPP, current interna-	121	134	162	183

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
tional USD				
Real growth rate of PHE per capita, %	20.0	8.7	19.2	12.1
<b>Russia</b>				
PHE, % of total health expenditure	63.2	64.2	64.3	64.4
PHE, % of total GG expenditure	10.8	10.2	9.2	8.5
PHE, % GDP	3.3	3.5	3.1	3.5
PHE per capita, PPP, current international USD	504	581	633	669
Real growth rate of PHE per capita, %	13.0	12.4	-5.5	4.4
<b>Ukraine</b>				
PHE, % of total health expenditure	56.7	57.6	55.9	54.7
PHE, % of total GG expenditure	8.9	9.2	8.6	8.6
PHE, % GDP	3.9	3.9	3.8	3.8
PHE per capita, PPP, current international USD	243	275	280	244
Real growth rate of PHE per capita, %	10.1	9.8	-0.1	-14.6

*Sources:* WHO, IMF, authors' calculations based on the country reports.

Another important characteristic of public health expenditure is its share in total GG expenditure (Table 4.4). Among the countries under consideration, Moldova spends the highest share of public resources on health (13% in 2008); this is more than the median value of this indicator for the EU NMS (11.9% in 2008) and close to the EU median (13.6% in 2008). In 2008, Kyrgyzstan, Russia, Ukraine, and Belarus – listed in descending order – spent between 11.5% and 8.2% of total GG expenditures on health. Georgia, with its relatively small government funding of healthcare, was at the bottom of the list, with PHE equal to 7.3% of total GG expenditure in 2008.

PHE as a share of GDP reflect both the share of total health expenditures in GDP and the share of PHE in total health expenditure. So, all the variation between countries observed on the PHE share in GDP – from 2.7% GDP in Georgia to 5.4% GDP in Moldova (Figure 4.2a and Table 4.4) – comes from variation in the two other indicators. Moldova's public health spending expressed as a % GDP is below the EU median but above the EU NMS median; the governments of the other five countries spend considerably less on health than the EU countries.

Similarly, the absolute level of PHE per capita is dependent on the level of GDP per capita and the PHE share in GDP. As result, in 2008, the PHE per capita had values from USD633 in Russia to just USD60 in Kyrgyzstan.

Regardless of their differences in absolute and relative levels of PHE, all countries demonstrated rapid growth in public health expenditures in real terms in 2006-2008. A good fiscal situation in the pre-crisis years allowed all governments to increase real PHE per capita from 1.8% (Belarus) to 22.2% (Georgia) per an-

num on average. It seems that all governments tried to compensate for chronic under-financing of the health sector in previous “poor” years; the lower the level of PHE in previous years, the higher the compensatory effort.

Salaries of health personnel constitute the key component of PHE in all countries. The rapid PHE increase in 2006-2008 mentioned in the previous paragraph was accompanied by an even faster growth in the real salaries of health workers (Table 4.5<sup>47</sup>). In all countries but Belarus, salaries in the health sector grew faster than average wages in these economies. The fastest growth occurred in Georgia and Kyrgyzstan, i.e., in countries with the lowest absolute salaries (see 2008 data for salaries expressed in USD PPP, Table 4.5). So, the catching-up of health worker salaries has been taking place in almost all countries and also between countries (possibly reflecting some governments’ attempts to reduce incentives for the emigration of health staff to countries with higher salaries). Still, in 2008, in all analyzed countries, salaries in the health sector were below the economy-wide average (Figure 4.4). The cross-country variation in the level of salaries was also large (more than four times), reflecting the differences in the level of GDP per capita and in the government priorities (health workers’ salaries in Moldova are higher than in Georgia despite the fact that GDP per capita in Georgia is substantially higher). However, it is worth noting that in many of the countries, patients’ out-of-pocket expenditures are high and are partially spent on direct payments to doctors and nurses. These payments are hardly reflected in official salary data, so actual salary differentials between healthcare and other sectors of the economy and between countries may be smaller than indicated in the official statistical data.

The countries also differ significantly in terms of the roles played by the central and local governments in healthcare financing. One can divide countries into two groups (Figure 4.3): larger (Belarus, Russia, and Ukraine) and smaller (Georgia, Kyrgyzstan, and Moldova). In 2008, local governments covered 60-80% of GG health expenditures in the three larger countries, while in the three smaller countries, the share of local budgets was about or below 10% (in the case of Moldova – less than 5%). This distinction seems to make sense both from the point of view of the size of the systems (it is much easier to manage the financing of healthcare establishments from the central level in smaller countries) and from the point of view of resource availability at the local level (smaller countries very much depend on indirect taxes, which should be centralized by their nature). Interestingly, in Russia, which is much larger than the other countries, the role of local and re-

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<sup>47</sup> In all countries under consideration, statistical agencies publish data for a combined health and social care sector. Health personnel outnumber social workers by many times and all sector aggregates are dominated by health sector indicators, so data for this combined sector seem to be a sufficiently good proxy for health personnel average salaries.

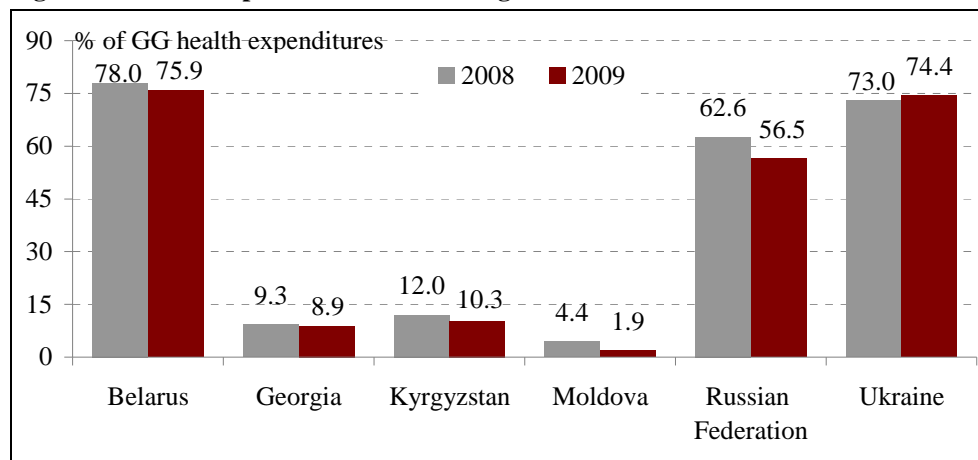
gional budgets is considerably smaller than in Belarus and Ukraine; thus, the health financing in Russia is more centralized. This also could be associated with the heavy dependence on revenues from oil and gas exports, which go to the central budget, as well as with the over-centralization of the Russian fiscal system, associated with the limited fiscal autonomy of regions and municipalities.

**Table 4.5. Average monthly salaries of health and social workers in the countries of the region**

	LCU, current prices		Current international USD , PPP		Real growth rate, %	
	2008	2009	2008	2009	2008 to 2005, annual average	2009 to 2008
Belarus	716 069	796 819	679	734	8.6	-1.5
Georgia	306	367	346	428	32.8	17.9
Kyrgyzstan	3 486	3 909	218	242	20.2	4.9
Moldova	2 266	2 718	388	461	16.0	20.0
Russia	13 049	14 820	911	1019	17.4	1.7
Ukraine	1 177	1 307	420	415	13.9	-4.2

Sources: Web-sites of the national statistical agencies, WDI, authors' calculations.

**Figure 4.3. Health expenditures of local budgets**



Sources: IMF GFS, country reports.

In the countries that introduced public health insurance (Georgia, Kyrgyzstan, Moldova, and Russia), a considerable share of PHE is spent by social security/MHI funds. According to the WHO data, these funds manage from 39% (Russia) to 76% (Moldova) of PHE. For comparison, in Belarus and Ukraine, the shares of PHE funded through social security funds are <3% and <1%, corre-

spondingly. However, less than half of the resources managed by the MHI funds come from mandatory insurance payments of private agents (employees and/or employers). In 2008, these payments composed 43% of the revenues of the MHI fund in Moldova, 30% of the revenues of territorial MHI funds in Russia, and 18% of the revenues of the MHI fund in Kyrgyzstan; in Georgia, the social tax has been merged with income tax since 2008, so no earmarked revenue source for MHI exists in this country anymore. Another source of MHI funds revenue are insurance payments made by the governments on behalf of the economically inactive population, and some other revenues.

As follows from Figure 4.2 and Table 4.4, private health expenditures (PvtHE) are important in the analyzed countries. Their share in total health expenditures varies from less than 30% in Belarus to more than 70% in Georgia. PvtHE were also growing rapidly in the pre-crisis period (Table 4.6), albeit somewhat slower than public health expenditures (in Belarus, PvtHE in 2006-2008 grew at a faster rate than the PHE). PvtHE in all of these countries consist mostly (70-98%) of patients' out of pocket expenditures for purchasing medicines and direct payments to health service providers. The latter are made officially in cases when health providers are private establishments or their services are not covered by the state guaranteed package. Unofficially, they also finance services which are formally covered by the MHI. These unofficial payments are practiced in all the countries to a various extent; they can be pretty high in cases of complicated medical treatment/operations and create high illness-associated financial risks for poorer segments of the population. Private insurance is important only in Russia; in 2008 the share of private insurance spending in PvtHE exceeded the median share in the EU countries (Table 4.6). This is possibly due to the existence of very large and resource-rich companies in the fuel industry, metallurgy, and some other sectors of the Russian economy, which are capable of providing attractive social packages to their employees. In all other countries, private health insurance either plays an insignificant role, or does not exist.

In some countries of the region, a substantial part of the financing of total health expenditures comes from international development organizations (the World Bank, the WHO, the Global Fund to Fight AIDS, Tuberculosis and Malaria etc.). In 2008, the share of external resources in total health expenditure amounted to 12.6% in Kyrgyzstan, 10.5% in Georgia, and 4.7% in Moldova; in three other countries, it was very small (<0.5%). These external resources are partially recorded in the government budget (e.g., sector budget support in the framework of the Sector-Wide Approach in Kyrgyzstan or programs implemented by government agencies outside central budgetary government operations) and partially go through NGOs. The above data on the impressive growth of PHE in the pre-crisis period does not seem to confirm the concerns about the

crowding-out of domestic public expenditures by external resources, which are typical for many aid-dependent developing countries. Still, in the longer-term, the governments/societies need to eventually replace donor funding with domestic resources, and this will create additional fiscal pressure.

**Table 4.6. Private health expenditures**

	Real annual growth rate of PHE per capita, %		Out of pocket expenditure		Private insurance	
			% of private health expenditures			
	2006-2008 average	2009	2008	2009	2008	2009
Belarus	9.9	11.4	71.4	67.4	0.1	0.1
Georgia	5.4	17.0	96.3	94.1	2.1	3.7
Kyrgyzstan	0.4	15.7	87.2	81.3	0.0	0.0
Moldova	14.6	-0.9	97.8	97.8	0.4	0.4
Russia	2.8	3.6	81.3	80.9	10.6	11.0
Ukraine	5.5	-10.6	92.6	92.9	1.8	1.9
For reference:						
European Union	...	...	85.4	85.6	8.2	8.2
EU NMS	...	...	92.7	93.4	1.5	1.0

Source: WHO, authors' calculations.

#### **4.2.2. Public health expenditures during the crisis**

As discussed in Chapter 2, all economies of the region were adversely affected by the crisis. The fiscal situation in 2009 in these countries was much tighter than in the previous years. This, of course, had some implications for public health expenditures.

In 2009, the real growth rate of PHE per capita (Table 4.4) fell in comparison to 2008 in Georgia, Moldova and Ukraine, and increased in Kyrgyzstan (by 28% in real terms!) and in Belarus and Russia. In Georgia and Moldova, 2009 growth rates were below the 2008 values, but remained positive. In Ukraine, a negative real growth rate of PHE per capita was registered; it was the second consecutive year of health expenditure decline in this country.

In Ukraine the 2009 decline took place while the share of PHE in total GG expenditure remained on at the 2008 level. This means that the priority of health expenditures remained high but the fiscal constraints resulted in the reduction of health expenditures in real terms. Similarly, health expenditures were a priority in Georgia and Moldova; the PHE share increased against the slowdown in total GG expenditures growth.

A bit unexpectedly, in Russia, the PHE share in total GG expenditures fell in 2009 in spite of the recorded increase in real per capita PHE growth rate. This could be interpreted in the following way: anti-crisis policies in this country included a substantial increase in GG expenditures financed from the oil reserve funds. Even though the health sector was not the main recipient of the additional resources, it received enough to ensure the accelerated growth of the PHE per capita in absolute terms.

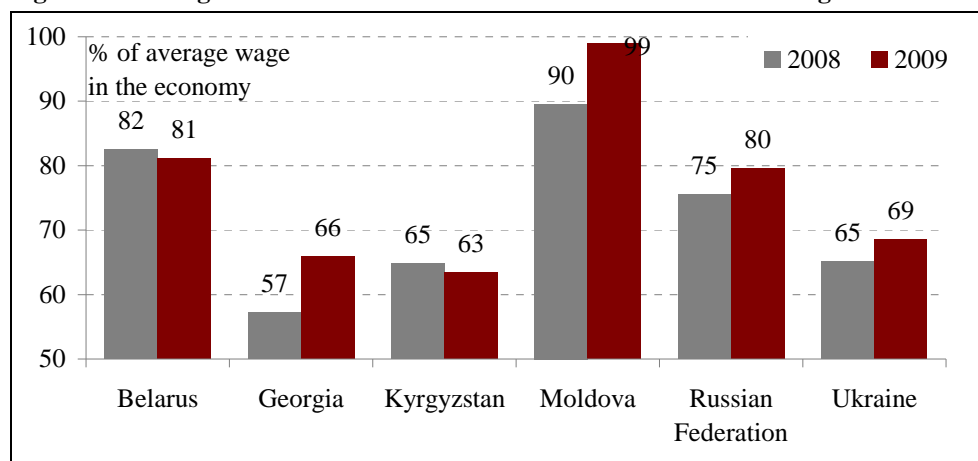
Due to these policies, the share of PHE in GDP in 2009 increased in comparison to 2008 in all countries except Ukraine, where it stayed at the 2008 level. Correspondingly, PHE per capita in USD PPP terms (Table 4.4) increased in all countries but Ukraine; the relative ranking of the countries on this indicator remained unchanged.

As noted above, the role of the private sector is high in some of these countries, so the PHE dynamics are not the only factor influencing the crisis-related change in total health expenditures. According to the WHO data, private health expenditures have increased in real per capita terms in comparison to 2008 in all countries (in Belarus, Georgia and Kyrgyzstan – by more than 10%) but Moldova (where they declined to less than 1%) and Ukraine (decline by more than 10%). So, Ukraine seems to be the only country in the group which experienced a reduction in both public and private health expenditures during the crisis.

As follows from Table 4.5 and Figure 4.4, the highest increase of average salaries of health workers in both absolute and relative terms was recorded in Georgia despite its lagging behind in public health expenditures growth; this was due to a 17% increase in real private health expenditures per capita in 2009. Health workers' salaries increased in 2009 in real terms in all analyzed countries except Belarus and Ukraine. Substantial increases were registered in both Moldova and Georgia. In comparison to the economy average, the average salary of health workers increased in Georgia, Moldova (the only country in the analyzed group where health workers' remuneration reached the country average), Russia, and Ukraine (where the economy average fell even more than salaries in the health sector). A minor reduction of relative salaries in the health sector took place in Belarus as well as in Kyrgyzstan, which experienced the opposite of the situation in Ukraine; Kyrgyz economy-wide wage growth was stronger than health sector wage growth).

Thus, as follows from the above analysis, PHE have been mostly protected in 2009. In Belarus, Kyrgyzstan, Moldova, and Russia, PHE have grown in real per capita terms; in Ukraine, where total GG expenditures fell dramatically, PHE nevertheless recorded an increased share in GG. In Georgia, the PHE fell in 2009 in both absolute and relative terms, but this was compensated by private expenditures, which were the main source of healthcare financing in this country.

**Figure 4.4. Change in relative salaries of health and social workers during the crisis**



Sources: Web-sites of the national statistical agencies, authors' calculations.

### 4.3. Health expenditure efficiency and medium-term expenditure outlook

To assess sufficiency and efficiency of total and public health expenditures, it is worth comparing the resources spent with the health outcomes. Outcomes include life expectancy at birth as an integral measure of the health status of the population and various mortality and morbidity indicators.

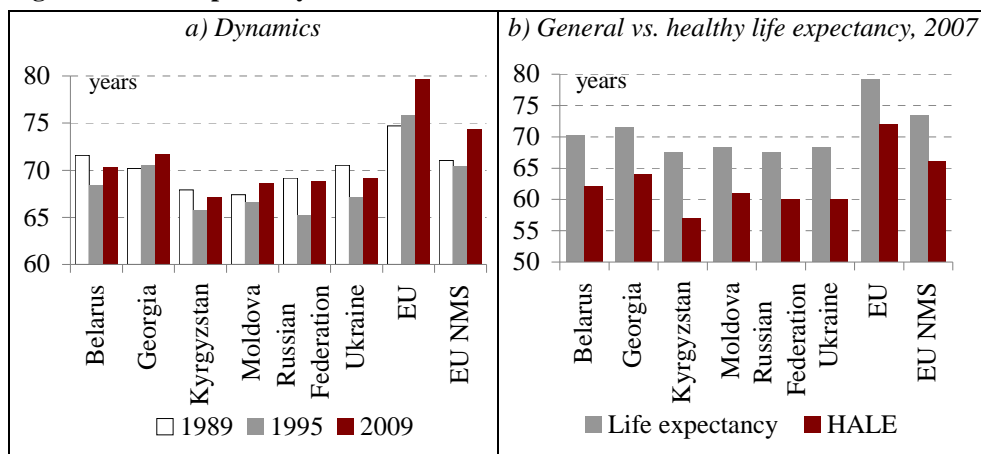
All countries under consideration except for Georgia went through a substantial decline in life expectancy in the mid-1990s (Figure 4.5a). This was related to the transformation shock; the EU NMS experienced a similar albeit smaller decline as well. In the 2000s, all analyzed countries except for Kyrgyzstan improved in terms of the life expectancy indicator; this points to a general improvement in their overall health status. Still, in 2009, life expectancy in four out of six countries had not returned to 1989 levels; only Georgia and Moldova have better longevity indicators now than they did at the end of Soviet period. In all these countries, life expectancy is now much lower than in the EU (10 years or more) and in the EU NMS.

However, life expectancy in the analyzed countries has very little correlation with their income status or health expenditures. The highest life expectancy is in Georgia, which is not the richest country in the group; its total health spending per capita in USD PPP terms is much lower than that of Russia, Belarus and some-



what smaller than that of Ukraine, and, as noted in the previous section, its PHE are the lowest among all the countries under consideration. On the other end, Russia, which has the highest income level and total and public health expenditures per capita, lags behind not only Georgia, but also Belarus and Ukraine on life expectancy, being just a bit ahead of much poorer Moldova and Kyrgyzstan. This lack of correlation between life expectancy and health expenditures indicates that there are important factors influencing the health status of the population, which are not directly related to the healthcare system such as environment, nutrition, lifestyle etc. Simultaneously, it also raises doubts about the efficiency of health spending in these countries.

**Figure 4.5. Life expectancy at birth**



Sources: WDI, WHO.

Healthy life expectancy (HALE) is the most relevant integral indicator for describing a population's health status. Data on HALE are available for 2007 only (Figure 4.5b). For all countries in the region, the gap between life expectancy at birth and HALE is 7-10 years. The ranking of countries on HALE is almost the same as on life expectancy.

An analysis of mortality indicators (Table 4.7) allows us to identify some sources of the observed differences in life expectancy. First, the FSU countries (apart from Georgia) have much higher standardized death rates (SDR) than the EU or EU NMS. This is a sort of expected phenomenon: normally, the lower mortality rate, the higher the life expectancy. As follows from the table, the differences in SDR come, to a considerable extent, from the differences in rates of death caused by external factors such as injury and poison. Apparently, the frequency of death associated with external causes is much more related to lifestyle factors –

alcohol consumption, work and road safety, (un)acceptability of risky behavior etc. – than to the development of the health systems and the level of health expenditures. This may be one of the key factors explaining the lack of a direct correlation between health spending and life expectancy.

**Table 4.7. Selected mortality and morbidity indicators**

Country	Standardized death rate, all ages per 100,000		Under five mortality rate, per 1,000 live births	Maternal mortality ratio, per 100,000 live births	Incidence per 100,000			Diabetes prevalence per 100,000
	All causes	External cause, injury and poison			TB	HIV	Cancer	
Belarus	1 181 <sup>a</sup>	139 <sup>a</sup>	12.1	15	54.3	9.1	413	2.08
Georgia	779 <sup>b</sup>	27 <sup>b</sup>	29.1	48	107.3	8.0	128	1.56
Kyrgyzstan	1 203 <sup>c</sup>	81 <sup>c</sup>	36.6	81	110.7	10.5	82 <sup>e</sup>	0.55 <sup>e</sup>
Moldova	1 264	100	16.7	32	120.6	22.3	223	1.53
Russia	1 403 <sup>d</sup>	188 <sup>d</sup>	12.4	39	89.6	27.5 <sup>d</sup>	334 <sup>d</sup>	1.88 <sup>d</sup>
Ukraine	1 308	124	15.1	26	78.5	34.0	331	2.57
For reference:								
European Union	622 <sup>c</sup>	38 <sup>c</sup>	4.2	8	13.5	5.3	475 <sup>a</sup>	4.13 <sup>d</sup>
EU NMS	873 <sup>c</sup>	59 <sup>c</sup>	6.3	13	35.9	2.5	442	3.90

*Note.* a – data for 2007, b – data for 2001, c – data for 2009, d – data for 2006, e – data for 2008.

*Sources:* HFA-DB, WDI.

Large differences between countries also exist on indicators such as the under-five mortality rate (U5MR) and the maternal mortality ratio. The values of these indicators are much higher in the FSU than in other European countries; they are especially high in Kyrgyzstan and Georgia. It follows from the data (Mogilevsky (2011)) that there is a strong positive statistical relationship between U5MR and FR, i.e., the average number of children born by a woman. A similar positive relationship also exists between fertility and maternal mortality. FR is another lifestyle indicator influencing child and maternal mortality and, hence, life expectancy. So, it is no surprise that Kyrgyzstan has the highest U5MR among all these countries; it also has the highest FR (Table 4.3). However, while accounting for fertility helps to understand the differences between the FSU countries themselves, it provides little help in explaining the differences between the FSU group (apart from Kyrgyzstan) and EU countries. The FR in all these countries does not differ much, but child and maternal mortality rates in the FSU are two, three and more times higher than, for

example, in the EU NMS. The equation provided in Table 4.8 suggests that, after controlling for fertility, U5MR appears to be strongly and negatively dependent on public health expenditure per capita (PHEPC), i.e., *ceteris paribus*, the higher the public health expenditures, the lower the child mortality.

**Table 4.8. Regression of U5MR on public health expenditures per capita and FR**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	37.92	8.30	4.57	0.0001
FR	13.44	1.95	6.90	0.0000
LOG(PHEPC)	-7.30	0.93	-7.88	0.0000
R-squared	0.959	Prob(F-statistic)		0.0000

Note. Dependent Variable: U5MR. Method: Least Squares. Included observations: 27.

Source: Mogilevsky (2011).

The analysis of selected morbidity indicators in Table 4.7 also reveals the role of socio-economic factors. The TB and HIV incidence rates are much higher in all FSU countries than in the EU and EU NMS. It is clear that poverty, income inequality, nutrition problems, and risky behavior contribute to the higher morbidity rates for “social” diseases. On the contrary, cancer and diabetes morbidity rates in the FSU are well below those in the EU/EU NMS. It seems that many people in the FSU do not live until the age when diseases typical for developed countries become widespread.

An important function of health systems is establishing equal access to health services for the population. However, several factors, such as uneven territorial distribution of health facilities and medical staff, unaffordable costs of drugs, official payments for services for uninsured people, and unofficial payments for medical treatment, work in the opposite directions. While comparable data on equal access to health services do not exist, available sub-national health status indicators point to large inequalities in this area. For example, according to the national statistical agencies, there was a 7.7 times difference between the regions of Russia with the highest and the lowest TB incidence rate in 2008; in Ukraine, Belarus and Kyrgyzstan in 2009, this cross-oblast difference was 3.0, 1.9, and 2.3 times correspondingly. Even accounting for variation in climate and socio-economic conditions affecting TB morbidity in different parts of these countries, especially in Russia, one could conclude that health systems fail to level these differences. This seems to be another argument for the inefficiency of health spending in these countries.

Two main messages seem to emerge from this discussion. First, health spending is not the only factor determining the health status of population; various socio-economic factors mentioned in sections 4.1 and 4.3 are also important health deter-

minants. From this perspective, in many cases it could be more efficient to implement policies promoting healthy lifestyles (fighting smoking, excessive alcohol consumption etc.) than to rely on narrowly-understood healthcare interventions.

Second, the absolute level of health spending is what matters for the effectiveness of healthcare. Relative measures of health spending (in % of GDP or of total GG expenditures) are important for describing the degree of priority assigned to health issues, but ultimately the per capita spending (together with socio-economic factors) determines the health status in a given country. This means that in order to improve a population's health, the analyzed countries need to increase health spending significantly. In many of these countries (especially in Russia, which has the largest fiscal space and the lowest share of health spending in GDP), this would require increasing the share of total government resources allocated for healthcare. Most probably, this should also be accompanied by increasing reliance on private sources of health financing especially in those countries which currently rely heavily on public sources and where there is no fiscal space for further expansion of public health spending (Belarus, Moldova, Ukraine).

In the medium- to long-term, all analyzed countries except for Kyrgyzstan will have to increase their health spending due to rapid population ageing. Smaller countries will also have to think about the necessity of replacing external financing sources with domestic ones. For example, according to the IMF's estimates (2010b), Russia and Ukraine should increase their health spending by more than 1% GDP per annum over the next twenty years.

Apparently, the required increase in health spending may create a heavy fiscal burden for these countries, four of which are already spending more than 40% of GDP (Table 2.6) – a high proportion for their level of social and economic development. In such a situation, a radical improvement in the efficiency of health spending should be a key priority. Targeting efficiency would require initiating politically difficult health reforms in those countries that have hesitated to start them so far (Belarus and Ukraine), and continuing them in other countries. This includes adjustments in the sector's physical infrastructure and staff, the introduction of minimally guaranteed packages of services, well-thought out reforms in financing mechanisms with a simultaneous strengthening of primary healthcare, increases in investments in modern health equipment, the retraining of health personnel, and other reforms.

## **5. Conclusions and Policy Implications**

During the last twenty years, the analyzed countries went through the painful process of post-communist transition, both in economic and political spheres. They started this process in the early 1990s with the same common Soviet institutional heritage but different levels of economic and social development. Then the various speeds and, sometimes, directions of economic and political reforms, as well as other country specific factors such as cultural, religious, and geographical backgrounds have made them more and more divergent. Five of them (Georgia, Kyrgyzstan, Moldova, Russia and Ukraine) can be considered market economies, although with numerous distortions caused by partial and incomplete reforms. Belarus still remains in a relatively early stage of market transition with extensive public ownership and remnants of a command system. Generally speaking, all of the analyzed countries but Georgia have failed to create a friendly business environment and suffer from high levels of corruption. As a result, the region is characterized by a substantial informal economy and shadow labor market.

The progress in political reforms is even more limited, with all of the countries rated in Freedom House's "Freedom in the World" index as either "non free" or only "partly free". The lack of democracy and freedom makes it difficult to fight corruption and improve the quality of state institutions, which are so important for the delivery of basic social services such as education and health. Nevertheless, even under authoritarian or semi-authoritarian regimes, one can observe the presence of political business cycles which heavily influence government expenditure behaviors. Among others, this was the case of Russia (2007), Kyrgyzstan (presidential election in 2009), Moldova (parliamentary election in 2009), Ukraine (parliamentary elections of 2006 and 2007, presidential election in the beginning of 2010), and Belarus (presidential election at the end of 2010).

After the deep transition-related output decline in the early and mid-1990s and the series of financial crises in 1998-1999, the decade of the 2000s was marked as the era of rapid economic growth, falling poverty rates (but not necessarily inequality), lower inflation, and a relatively favorable fiscal situation. However, in 2006-2008, many countries started to experience signs of overheating, with current account deficits widening rapidly and inflation pressures growing. In spite of the

record-high rates of economic and revenue growth, almost all of the countries recorded fiscal deficits. In addition, the high growth rates, the balance-of-payment equilibrium and GG revenues were, in most cases, dependent on the international prices of a few commodities, labor remittances and capital inflows.

The vulnerabilities described above played a crucial role when the global financial crisis hit the region in the second half of 2008. In the financial sphere, liquidity and credit dried up, capital started to fly back to the main financial centers, stock markets and commodity prices declined, risk premia for both sovereign and private borrowing grew dramatically, many national currencies depreciated threatening the massive insolvency of economic agents borrowing in foreign currencies and leading to a rapid increase in debt-to-GDP ratios (both public and private). In the production sphere, external demand for exported goods (especially commodities) and labor declined.

The overall macro-fiscal impact of the crisis can be summarized as follows. First, the recession caused a reduction of the tax base and, therefore, a reduction of GG revenues. Second, in individual countries, this impact worked through various specific channels. For instance, the fall in exports led to a much bigger decrease in taxes in countries that have special export taxes. On the other hand, tax revenues in countries with a bigger share of informal economy were less affected. The FSU countries preferred to keep their public expenditures at least at pre-crisis levels, which led to the deterioration of their fiscal balances. The deficits were financed mainly via external borrowing. The structure of GG expenditures changed mostly by increasing the proportion of spending on social protection. Health and education expenditures (as a ratio to GDP) either remained almost unchanged (Belarus) or were increased slightly (other countries).

In education, the FSU countries are confronted with an urgent need to introduce new curricula, standards and delivery models. In the middle-income countries, like Russia, Ukraine and Belarus, a post-industrial stage of development requires a radical improvement in education quality to meet the needs of a knowledge-based economy. The lower-income FSU countries must adjust their educational systems to the priorities of their development strategies.

Most of the FSU countries record above-average (as compared to countries at a similar level of per capita income) and growing enrolment in tertiary professional education. However, there are profound qualitative and quantitative mismatches between the structure of specialists trained and the needs of the labor market. Tertiary education has become a symbol of social status rather than an instrument for obtaining knowledge and experience within a chosen specialty. Most countries must rehabilitate their VET systems and adapt their profiles according to the present day needs of the economy. The crisis has further highlighted this need, since

the recession has reduced the capacity of enterprises to continue their training investments.

The recession has not slowed down reforms in education; on the contrary, in some countries, reforms have accelerated in recent years. In most cases, the task of conducting reforms and structural changes was not articulated as an expenditure-saving instrument. The future of public spending growth in the education sector is difficult to predict because of uncertainties regarding the fiscal situations of each country in a post-crisis environment. This means that the mid-term education strategies in some countries will have to be reviewed and adjusted to actual fiscal constraints and to increased efficiency of public resources use.

However, the infrastructure adjustment, which was a major source of saving in the sector, cannot be continued infinitely. Further efficiency gains can come from introducing PSF schemes, upgrading educational standards, introducing teachers' performance appraisals, electing governing boards at public schools, etc. Expanding independent quality control mechanisms on the basis of pre-existing independent test systems and creating a link between the results of this testing and the amounts of funding received by schools would serve to increase both efficiency and quality.

The decentralization of the education management system down to the school level is a natural outcome of introducing PSF principles. It appeared to be a widespread model of reform in post-communist countries (e.g. in Poland, Lithuania, Macedonia and Serbia) and is currently being implemented in Armenia and Georgia, where, after 2003, school funding became independent from local authorities and is done through voucher schemes. It is believed that decentralization and increased autonomy of education institutions (budgetary, program and institutional) can ensure competitiveness, improve education quality, and help establish closer interrelations with local labor markets.

The shortage of public resources has led to a sizable increase of private resources channeled to education. However, the deteriorating financial status of households limits their ability to further finance education services. In most of the countries, the absence of well-developed schemes of governmental education benefits, such as direct, indirect and non-cash subsidies and loans for students, noticeably limits access to tertiary education among the poor.

During the last twenty years, the majority of the analyzed countries have reformed their health systems by reducing health establishment networks, making the transition to MHI and providing some limited guaranteed packages of health services instead of universal guaranteed access to public healthcare. These reforms, however, differed between countries, so the region now demonstrates a broad spectrum of models with various degrees of government involvement in the

financing and provision of health services. In all countries under consideration except Georgia, governments retain a leading role in financing healthcare systems.

In the pre-crisis period, all governments substantially increased their financing of healthcare. Still, absolute levels of public health expenditures per capita in all of these countries remain well below the levels of not only rich “old” EU members, but also of the EU NMS. The crisis has not resulted in the reduction of absolute and/or relative public health expenditure indicators in all countries in the group (except for Georgia, where public health expenditures are of relatively low importance and where their contraction in 2009 has been compensated by a considerable growth of private health expenditures).

The comparison of health outcomes with health expenditures in the region reveals no strong correlation between the amount of resources spent on healthcare and the results achieved. This points to inefficient public health expenditures and the strong influence of factors unrelated to public health spending such as lifestyle or nutrition.

In the medium-to-long-term, the countries under consideration will have to increase their per capita health spending in order to catch up with modern healthcare technologies, cope with population ageing and, in some cases, replace external sources of financing with domestic ones. Some countries (especially Russia) do have the fiscal space to increase public health expenditures and should do so. At a minimum, all countries should protect the current levels of health spending and concentrate their efforts on making substantial improvements in efficiency. In particular, the promotion of healthy lifestyles and preventive policies can be important sources of efficiency gains. The increased and improved usage of public resources should be also accompanied by increasing reliance on private sources of health financing, especially in those countries which currently rely heavily on government budgets and where there is no fiscal space for a further expansion of public health spending.

In order to implement or complete far-reaching reforms in both the education and healthcare sectors in the FSU region, the governments will need to adjust their spending patterns, which will require thorough planning, strong political will, and a transparent approach.



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