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Public expenditures on education and health in Belarus before and during the global crisis

CASE Network Reports, No. 102

Provided in Cooperation with:
Center for Social and Economic Research (CASE), Warsaw

Suggested Citation: Shymanovich, Gleb; Kruk, Dmitrij (2011) : Public expenditures on education and health in Belarus before and during the global crisis, CASE Network Reports, No. 102, ISBN 978-83-7178-545-0, Center for Social and Economic Research (CASE), Warsaw

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Public Expenditures on Education and Health in Belarus before and during the Global Crisis

Gleb Shymanovich
Dzmitry Kruk

No. 102/2011

CASE Warsaw Bishkek Kyiv Tbilisi Chisinau Minsk

The views and opinions expressed here reflect the authors' point of view and not necessarily those of CASE Network.

The publication of these country reports has been funded by the Local Government and Public Service Reform Initiative of the Open Society Foundations – Budapest. The judgments expressed herein do not necessarily reflect the views of LGI.

Keywords: **Fiscal policy, Belarus, Education financing, Health financing, Global economic crisis**

JEL codes: **E62, H50, H51, H52, I18, I22**

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Graphic Design: Agnieszka Natalia Bury

EAN 9788371785450

Publisher:
CASE-Center for Social and Economic Research on behalf of CASE Network
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Abbreviations

Belstat	Belarusian Statistical Committee
bn	billion
BYR	Belarusian rubles
CEE	Central and Eastern Europe
CIS	Commonwealth of Independent states
CT	Centralized testing
EBRD	European Bank for reconstruction and Development
EUR	Euro
FDI	Foreign direct investments
GDP	Gross domestic product
GG	General Government
IMF	International Monetary Fund
IPM	Institute for Privatization and Management
ISCED	International Standard Classification of Education
m	million
NBB	National Bank of Belarus
OECD	Organisation for Economic Cooperation and Development
PAYG	Pay-As-You-Go
PIRLS	Progress in International Reading Literacy Study
PISA	The Program for International Student Assessment
PPP	Purchasing power parity
RIPO	Republican Institute of Vocational Education
SBA	Stand-by arrangement
SSF	Social Security Fund
thsd	thousand
TIMSS	Trends in International Mathematics and Science Study
TB	Tuberculosis
trln	trillion
UNESCO	United Nations Educational, Scientific and Cultural Organization
USD	US dollars
VAT	Value added tax
WHO	World Health Organization
yoy	year on year

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Abstract

The paper deals with the impact of the global financial crisis on public service delivery – mainly education and healthcare – in Belarus. The pre-crisis period of 2003-2008 was the most prosperous in recent history. These trends resulted in a pretty good fiscal performance. Nevertheless, the share of expenditures on education and healthcare in GDP was decreasing during the 2000s, which was a consequence of demographic trends and a number of reforms in these sectors. The global crisis hurt the Belarusian economy considerably. However, macro-indicators of the Belarusian economy looked pretty good in comparison to other countries, and the deterioration of public finance was limited. Thus, expenditures on both education and healthcare were mainly part of long-term trends and were able to avoid shock adjustments during the crisis. However, there are a number of medium and long-term threats to these public service sectors associated with the crisis agenda. This paper provides a number of policy recommendations to stave off these threats.

Executive Summary

This paper deals with the impact of the global financial crisis on public service delivery – mainly education and healthcare – in Belarus. The pre-crisis period of 2003-2008 was the most prosperous in recent history, and Belarus succeeded in maintaining a fiscal surplus during nearly the entire period. This was also partly due to positive shocks in collecting budget revenues. In the mid-2000s, there was a positive shock in revenues from indirect taxes other than VAT. Furthermore, since 2007, due to trade in oil products, taxes on foreign trade almost doubled. Thus, the government succeeded in ensuring a stable inflow of revenues, which seemed more than enough for financing the needed amount of expenditures. As a result, the prospects for public finance stability appeared safe.

Despite a relatively good fiscal environment, the share of expenditures on education and healthcare in GDP was decreasing during the 2000s, which was a consequence of demographic trends and a number of reforms in these sectors. There were good reasons for revising the principles of financing these sectors, which experienced distortions inherited from the Soviet times, and the reduction of public expenditures on education and healthcare may be partially associated with the increasing efficiency of the related spending.

In education, the government put most of its attention on general secondary education, which was the main expenditure item in this sector. In the late 1990s, the government launched a thorough reform of secondary general education, which included a gradual shift to a twelve-year schooling cycle. Evidently, this reform meant the increase of corresponding expenditures both in absolute values and in per capita terms. However, the preliminary results of the reform were assessed in 2008 by the authorities as unsatisfactory. The reform was rapidly reversed (in two years), which allowed the government to reduce its financing of this sub-sector. Moreover, in higher education and special secondary education, the government's orientation towards more commercialized education was evident.

Only pre-school and vocational education enjoyed some public expenditure growth. In pre-school institutions, the enrolment rate was not that high, while the demand for pre-school services was rather stable. Hence, the government had to provide additional financing for expanding pre-school facilities. Vocational education became one of the top priorities, as the lack of working specialties began to disturb the labor market in the 2000s. Per capita expenditures and expenditures in real terms were growing. However, it should be emphasized that the growth rates in financing these sub-sectors were considerably lower than real GDP growth rates.

Despite this policy of expenditure rationing in education, there was some progress in terms of the percentage of the population being educated and in a number of 'input' parameters. Nevertheless, some doubts remain about the increase in efficiency, as a number of qualitative indicators are absent or show ambiguous results.

The same is true for the healthcare sector. As the starting point, the high number of medical personnel and the excessive number of hospital beds inherited from the Soviet period should be emphasized. At the same time, the inherited system suffered from regional disparities between urban and rural areas in the quality of healthcare, which reduced the effectiveness of spending as well. As a result, the main reforms were directed at rural areas. First, the introduction of general medical practice in rural areas should be mentioned. Second, excessive hospital beds in rural areas were transformed into long-term social-care facilities that were partially financed by the Social Security Fund. Another measure targeted at a more efficient allocation of resources between the regions was the introduction of capitation budgeting. Planning the financing of hospital services with upper expenditure limits based on the number of residents in the region and districts has been in place since 2001. However, the efficiency of spending in the sector as a whole and the adequacy of the budget financing to the sector's needs are still questionable. Doubts with respect to the efficiency of healthcare expenditures arise when comparing international life expectancy indicators. Despite higher expenditure in Belarus compared to Russia and Ukraine, the indicators of life expectancy are broadly the same. Furthermore, there is still a lack of physicians and nursing personnel in the primary sector, which indicates that the available human resources are used inefficiently.

The global crisis hurt the Belarusian economy considerably. However, macroindicators of the Belarusian economy looked pretty good in comparison to other countries, and the deterioration of public finance was limited. The government did not resort to considerable restrictions on several expenditure items on a functional criterion. Rather, in 2009, their strategy was to restrict capital expenditures and freeze wages for the majority of public services sectors, including education and health. Thus, expenditures on both education and healthcare were mainly part of long-term trends and the government was able to avoid shock adjustments during the crisis. However, there are a number of medium and long-term threats to these public service sectors associated with the crisis agenda. Namely, the problem of financing capital needs is becoming more vital to the branches. Taken in one row with the substantial gap in wages between education and healthcare on the one side, and average wages in the economy on the other side, this signals the necessity of additional financing for both sectors to increase their effectiveness. This paper provides a number of policy recommendations to stave off these threats.

1. Introduction[1]

The global crisis has become a serious challenge for transition economies. At first sight, Belarus is among the countries that overcame the crisis relatively successfully. For instance, there was no deep recession in Belarus, and, unlike its neighbors, it maintained its GDP growth, although it was very modest. Nevertheless, the crisis revealed an accumulation of structural distortions in the economy, among which the fiscal sustainability challenge may be emphasized. Furthermore, in Belarus, the crisis-related shock overlapped with a number of other shocks associated with oil-trading schemes.

In this situation, the government had to adjust its expenditures to the changing environment. Education and healthcare traditionally make up a large share of total budget expenditures. Thus, cuts to these expenditures seem to highly probable in the case of a growing fiscal deficit. However, such measures may have negative consequences in the long-term perspective as the accumulation of human capital and productivity growth are closely linked with the effectiveness of education and healthcare. So breaking the vicious cycle of 'poor growth – high fiscal deficit' may become a problem for generations.

The purpose of this study is to assess the link between the crisis and expenditure adjustments in education and healthcare. We are keeping in mind that cuts in financing in either of these sectors may cause long-term losses in productivity only if they cause the quality of the respective services to deteriorate. Hence, we assess changes in financing from the point of view of their impact on the effectiveness of education and healthcare. In other words, our task is not just to trace changes in the amount of finance provided to education and healthcare as a result of the crisis. We are also assessing the efficiency of financing using qualitative indicators of the respective sector.

The structure of this study is as follows. In Section 2, we deal with overall trends in fiscal performance before and after the crisis hit Belarus. In this Section, we show some specific links and mechanisms in Belarusian public finance, which to a large extent, define the core of the adjustment mechanisms to shocks. Further, we focus on budget performance during the crisis and reveal the channels through which it affected public finance. Herewith, we also describe the government's

[1] This paper has been prepared with the editorial assistance of Paulina Szyrmer

reaction to the expenditure side of the budget during the crisis. Section 3 analyzes policy reforms and the revision of priorities in education sector. We search for indicators of the effectiveness of the Belarusian education system and through this outlook, we trace the changes in budget financing. In Section 4, we deal with healthcare, again considering the policy reforms in the sector, its spending trends, and outcomes on the quality of medical services provided for households. In Section 5, the main findings and conclusions are summarized.

Within this study we used a number of statistical data sets. For the analysis of budget performance we used data provided by the Belarusian Ministry of Finance and local governments. With regard to the educational sphere, we based our analysis on data provided by the Belarusian Statistical Committee (Belstat), the Belarusian Ministry of Education, and also by international organizations such as UNESCO, OECD, and the World Bank. In the analysis of healthcare, we mainly used data from Belstat, the Belarusian Ministry of Healthcare, and the World Health Organization.

2. Fiscal situation

2.1. Pre-crisis fiscal developments

2.1.1. General economic environment

The 2003-2008 period was the most successful period of economic development in Belarus. At the beginning of the period, Belarus had an important advantage due to a political deal with Russia – a low gas price and duty-free exports of Russian crude oil to Belarus – which gave it additional competitiveness for promoting its exports. During this period, the level of the natural gas price did not exceed 30% of its average level for other European countries. This, along with the agreements on oil supply, added an additional impulse to the economy. In the background of robust oil prices on world markets, the volumes of oil-refinery and, correspondingly, exports of oil products increased substantially. Furthermore, there was an indirect impact that included higher demand for the output from adjacent branches of industry and subsidizing them through lower prices on inputs for them, providing stable foreign currency revenues and thus stabilizing the foreign-exchange market within the country, providing more revenue to the consolidated budget, which allowed for more public spending, boosting domestic demand through increased salaries, etc. Through this, the fuel industry became the main driver of growth in this period. We argue that the changes in the external environment for the fuel industry may be interpreted as a positive productivity shock, which increased returns on investments and consumption and increased the growth of the potential GDP.

A favorable external environment should be emphasized as the second important factor that determined rapid economic growth during these years. For Belarus it was mainly associated with demand from Russia as a vast majority of manufactured goods are exported to this country. Exploiting the positive effect from the oil price hikes, Russian economic agents increased their demand for foreign goods enormously. While Belarus had some privileges on the Russian market due to the Customs Union and some additional instruments (such as access to Russian public procurements, etc.), it benefited greatly from growing demand from Russia. This mostly affected Belarusian producers of capital goods, especially in machinery and adjacent industries. The producers of a range of foods (milk and diary products,

meat and meat products) and consumer goods (refrigerators, TV-sets, etc.) also enjoyed growing demand from Russia.

These factors provided for the macrostablization of the Belarusian economy, due to which a number of other factors also contributed to a rapid GDP growth rate. A stable export revenue allowed the monetary authorities to peg the exchange rate of the Belarusian ruble, using the US dollar as the anchor and thus providing stability on the money and capital markets and in the Belarusian financial system. Increased demand for the national currency and more trust in the national banking system led to decreasing financial dollarization, a deeper capital market, and lower inflation. In turn, stability in the monetary sphere and banking system facilitated a more effective allocation of resources in the economy, thus contributing to rapid economic growth.

Table 2.1. Main macroeconomic indicators 2003-2009

	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
GDP growth rate, % yoy	7.0	11.4	9.4	10.0	8.6	10.2	0.2
GDP, USD bn (current exchange rate)	17.8	23.1	30.2	37.0	45.3	60.8	49.2
Fixed capital growth rate, % yoy	1,8	1.5	2.0	2.5	2.1	3.0	5.0
Real money income of households growth rate, % yoy	3.9	9.8	18.4	17.8	13.2	11.8	2.7
Employment growth rate, % yoy	-0.9	-0.5	0.8	1.3	1.1	2.0	0.7
Labor productivity growth rate, % yoy	8.0	12.0	7.3	8.7	7.5	8.1	-0.5
CPI inflation (annual average), %	28.4	18.1	10.3	7.0	8.4	14.8	13.0
Real exchange rate vs. US dollar growth rate, % yoy	9.3	9.5	7.1	4.1	5.2	11.1	-13.3
Current account balance, % of GDP	–2.4	–5.2	1.7	–4.1	-6.6	-8.6	-13.0
Gross external debt, % of GDP	23.7	21.4	17.9	18.5	27.6	24.9	45.1

Source: Belstat and own calculations based on the Belstat data.

The first threat to the sustainability of this model of economic development appeared in 2007, when Russia began to increase prices for natural gas, thus reducing the gap between the Belarusian price and the average European one. Moreover, Russia insisted on sharing exports duties for oil-products exported from Belarus, arguing that a huge fraction of them should be transferred to the Russian

budget, while crude oil was supplied on a duty-free basis. However, these challenges did not lead to considerable reforms of the Belarusian economy, as further improvements in the external environment in 2007 and the first part of 2008 compensated for this negative effect. Before the impact of the crisis began hitting the Belarusian economy in the autumn of 2008, its economic indicators looked pretty good (see Table 2.1) and Belarus was among the leaders of growth rates in the CEE region.

2.1.2. Public finance

Volume and structure

Belarus's public finance sector is one of the most difficult to analyze as it is characterized by a budget structure that is constantly changing – introducing and eliminating different funds and making changes in the tax legislation. According to the legislation, the annual general government (GG) budget, as well as the central government and local budgets are approved by the parliament after the President's approval. This is usually done at the end of the previous year or at the beginning of the budgeted year. Tax legislation changes are also usually introduced within the budget approval procedure. However, there are regular changes in budget expenditure plans during the year, so they can meet actual revenues (that are difficult to plan properly due to inflation and regular external shocks), as well as changes in the tax system.

Local budgets have three levels: primary level budgets (village, township, town level), basic level budgets (region and town level), and the oblast budget. The resource planning comes from above, thus each level of the local government has a portion of tax and non-tax revenues that is left at their disposal. However the majority of taxes are channeled to the upper levels of the budget. The exact share of the tax and non-tax revenue left in local budgets is set either in the budget codex or by the upper standing level of authorities.

The dynamics of the local and central budgets are presented in Table 2.2. As one can see, GG revenues were marked by dynamic growth until the crisis hit the Belarusian economy. In 2008, revenues reached 51% of GDP, meaning that the public sector accumulated and then redistributed more then half of GDP. This is a very high figure but there are some explanations for it. First of all, the social security fund (SSF) was included in the central government budget (which is not done in many other countries). Until 2004 this fund was not part of the GG budget[2] and

[2] SSF was once again excluded from the GG budget in 2010.

the share of the public sector in GDP was comparable to other countries in the region. Furthermore, in 2005, innovation funds were also included into a GG budget, contributing to an increase in the level of fiscal redistribution in the economy. Moreover, the structure of the economy with the private sector limited to only 20-25% of the economy[3] supposes a high level of public sector involvement in the economy. The growth of GG revenues stopped only with the global financial crisis, which resulted in the fall of some tax revenues. In addition, tax simplification contributed to this reduction (see section 2.2.2).

Table 2.2. Local and central government budgets: Main characteristics

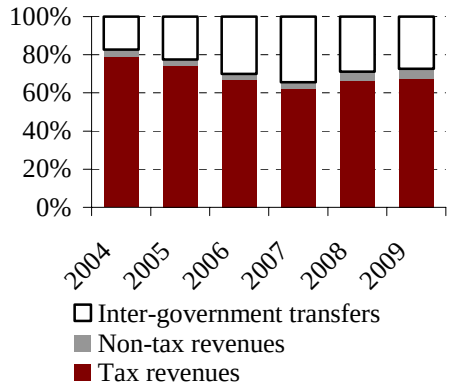
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
General government							
Revenue, % of GDP	33.9	46.5	48.4	48.4	49.5	51.0	45.9
BYR bn	12190.0	23004.2	30824.9	38391.3	48048.9	65660.5	62749.2
expenditures, % of GDP	35.2	45.6	48.0	47.0	49.0	49.5	46.6
BYR bn	12646.1	22546.5	30556.0	37256.2	47626.8	63811.3	63707.6
SSF, BYR bn	--	*5387.8*	*7404.7*	*9287.7*	*11257.0*	*14496.5*	*15741.0*
Local government budgets							
Revenue, % of GDP	20.3	19.0	18.9	17.5	18.5	18.1	16.1
BYR bn	7281.1	9381.4	12049.3	13903.6	17996.6	23360.4	21988.2
expenditures, % of GDP	20.3	18.6	18.8	17.6	18.2	17.9	17.1
BYR bn	7297.6	9172.7	11998.7	13938.6	17822.0	23049.3	23446.4
Central government budget							
Revenue, % of GDP	13.6	30.4	33.3	36.2	37.3	38.0	34.2
BYR bn	4908.9	15065	21201.7	28666.6	36227.7	49049.1	46760.3
expenditures, % of GDP	14.9	29.9	32.9	34.7	37.1	36.8	33.8
BYR bn	5348.5	14816	20983.5	27496.5	35980.1	47511	46260.4
Including inter-government transfers,							
% of GDP	3.1	2.9	3.8	5.3	6.4	5.2	4.4
BYR bn	1111.9	1442.2	2426.2	4178.9	6175.3	6749.0	5999.3
Share of local governments budgets in the general government revenues, %							
In the revenues	59.7	40.8	39.1	36.2	37.5	35.6	35.0
In the revenues without SSF	--	53.3	51.4	47.8	48.9	45.7	46.8
In the revenues without SSF and inter-government transfers	--	45.1	41.1	33.4	32.1	32.5	34.0

Source: Ministry of Finance.

[3] According to EBRD evaluation.

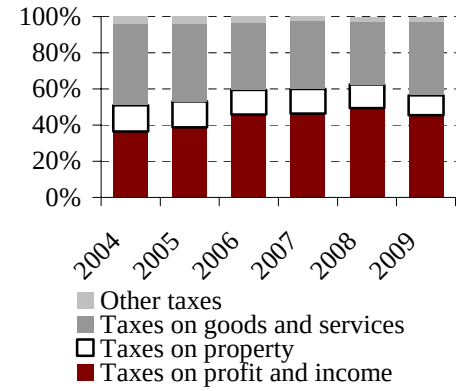
At the same time the revenues of local budgets suffered a reduction instead of growth (see Table 2.2). This resulted in the fall of the share of local budgets in the GG revenues. Local budgets lost 6.5% of their contribution to public sector revenues if the SSF is deducted from GG revenues, and 11.1% if inter-government transfers from the central budget to local bufgets are deducted. Inter-government transfers constitute more than a quarter of all local government revenues, indicating a large scale of centralization of public finance (see Figure 2.1). Among tax revenues, taxes on profit and income play the most important role for local budgets (see Figure 2.2). The share of this tax group that is assigned to the local budgets is rather constant and close to 70%. Within this group, revenues from personal income tax and some minor special levies set by local governments are left under the control of the latter. Taxes on profits and income are divided in favor of the central government. Revenues from taxes on goods and services are also vital for local budgets. They are also divided between central and local government budgets, but in contrast to the profit and income taxes, these come mostly under the control of the central government, as only 25% of these revenues are assigned to local budgets (mostly VAT and some special local taxes). Taxes on property fall fully at the disposal of local governments.

Figure 2.1. Structure of local government revenues



Source: Ministry of Finance.

Figure 2.2. Structure of local government tax revenues



Source: Ministry of Finance.

Public sector revenues

General government revenues are formed by tax and non-tax revenues, as well as by contributions to the SSF (in 2004–2009). Tax revenues compose a large part of the GG revenues. They include revenues from taxes on profit and income, taxes on goods and services, taxes on property, taxes on foreign trade and other taxes and

duties. Their performance for the pre-crisis 2002–2008 period is presented in Table 2.3. The first part of this period (2002–2005) is characterized by the structural and volumetric stability of tax revenues, while the second (2006–2008) is prominent for regular changes in the structure and growing total tax revenues. These trends can be traced via a more careful analysis of the GG tax revenues structure.

Table 2.3. General government tax revenues, % of GDP

	2002	2003	2004	2005	2006	2007	2008	2009
Taxes on profit and income	6.60	6.59	7.16	7.58	7.75	7.68	8.68	7.04
Taxes on goods and services	12.98	13.46	12.95	13.61	18.59	17.30	15.90	14.55
Taxes on foreign trade	2.05	2.66	2.21	2.64	2.61	6.46	8.24	5.83
Taxes on property	1.53	2.03	1.94	1.80	1.60	1.56	1.56	1.19
Other taxes	0.52	0.47	0.56	0.53	2.58	2.22	1.96	1.59
Taxes on the wage funds	0.86	0.76	0.79	0.63	0.85	--	--	--
Tax revenues	**24.54**	**25.98**	**25.61**	**26.79**	**33.99**	**35.23**	**36.33**	**30.20**

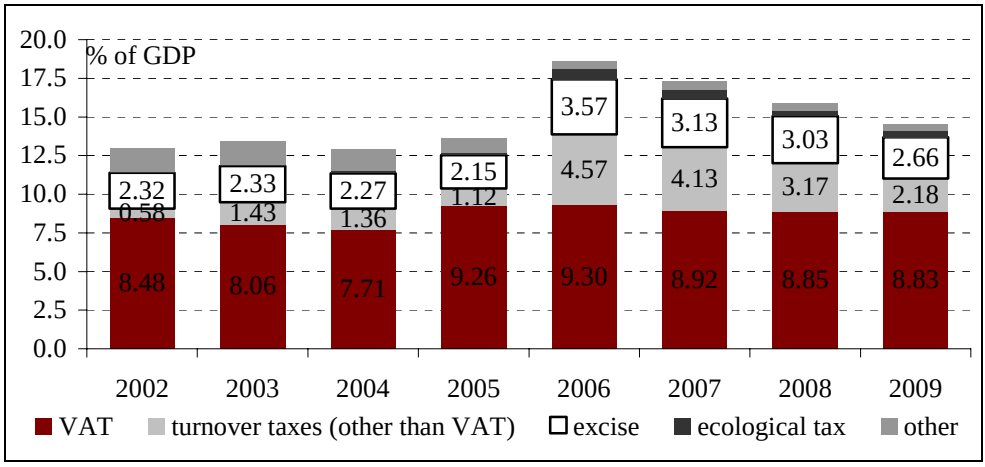
Source: Ministry of Finance.

Taxes on goods and services guarantee the biggest share of GG tax revenues. Until 2007, revenues from these taxes constituted more than half of total tax revenues. Their role has declined since 2007 mainly due to an increase in the collection of other taxes, in particular – from taxes on foreign trade. Besides there was also a fall in absolute terms of taxes on goods and services revenues, as some tax liberalization began to evolve in Belarus. If we consider the structure of this tax group, the largest changes were related to turnover taxes other than VAT. Revenues from these taxes rocketed in 2006 (see Figure 2.3) as the local tax on retail sales was set at 5% of the turnover for domestic goods and 15% for imported ones. A slight reduction in revenues from these taxes in 2007 and 2008 was caused by the abolishment of the turnover tax 'for overcoming the consequences of the Chernobyl disaster' (the rate was 0.9% of the revenues) in 2007 and a reduction of the agricultural levy[4] rate from 3 to 2% of the revenues (another turnover tax). VAT revenues were rather stable within the period. The only significant upward shift occurred in 2005 when Belarus and Russia agreed to pay VAT in bilateral trade according to the country of destination instead of country of origin principle, as it was in previous years.

[4] This levy (with the full name "levy for support to the agricultural producers") had a cascade nature and was paid from the turnover.

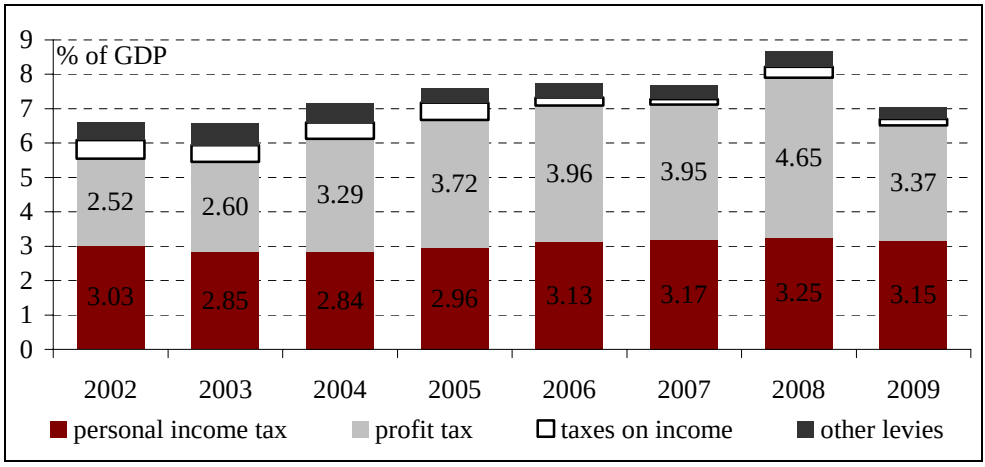
Some of the increase in GG excise revenues in 2006–2008 can be explained by high oil prices[5]. They allowed Belarusian refinery plants to generate huge profits from exports and subsidized domestic sales, which were loss-making due to high excise rates and retail petroleum price regulation by the state.

Figure 2.3. General government revenues formed by taxes on goods and services



Source: Ministry of Finance.

Figure 2.4. General government revenues formed by taxes on profit and income



Source: Ministry of Finance.

[5] Oil refinery was regulated in such a way that the export of petroleum products was profitable and domestic sales were loss-making due to regulated prices and high excises. The growth in export revenues meant more room for cross-subsidization between exports and domestic sales, and the government tended to increase excise rates while prices were kept stable.

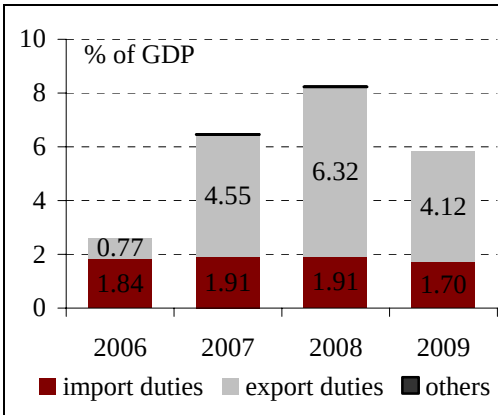
The second most important source of GG revenues are taxes on income and profits, as they contribute around a quarter of all tax revenues. This group includes personal income tax, tax on profits and some other minor taxes and levies. Revenues from personal income tax were almost stable in 2002–2008, showing a slow increase starting in 2006 (see Figure 2.4), when real wage growth rates began to exceed labor productivity growth rates (Kruk, Tochitskaya, Shymanovich (2010)). In contrast, GG profit tax revenues were rapidly growing in this period following economic growth (see section 2.1.1).

The taxes on foreign trade have gained importance for GG revenues since 2007. They grew from 2.6% of GDP in 2006 to 6.5% in 2007, when Belarus was forced to raise export duties on oil and petroleum products up to the level of Russian ones. At the same time, part of these revenues (70% in 2007 and 80% in 2008) was agreed to be directed to the Russian budget via duties that Russia levied on the oil exported to Belarus. So in practice the Belarusian oil refinery business was double taxed with export duties and the Belarusian government had to reimburse the Russian duties from the budget. The export duties revenues alone soared from 0.8% of GDP in 2006 to 4.6 and 6.3 of GDP in 2007 and 2008 respectively, being solely responsible for the growth of taxes in the foreign trade group (see Figure 2.5).

Regarding 'other taxes' one should mention the revenue increase of 2% of GDP in 2006, when contributions to the innovation fund were included into the GG budget. Previously this fund was out of the budget. A reduction in revenue from 'other taxes' in 2007 and 2008 resulted from tax liberalization when some minor taxes were abolished. There were also 'taxes on the wage fund' that were finally abolished in 2007. This group comprised a tax to the Employment Assistance Fund at the rate of 4% of the wage fund. However this tax did not contribute much to GG revenues. At the same time, they were making the tax burden on wages extremely high (taking into account the 35% contribution to the SSF) which resulted in the widespread practice of paying wages using envelopes. So the abolishment of these taxes could even have had a positive influence on GG revenues as it reduced incentives for shadow economy activities.

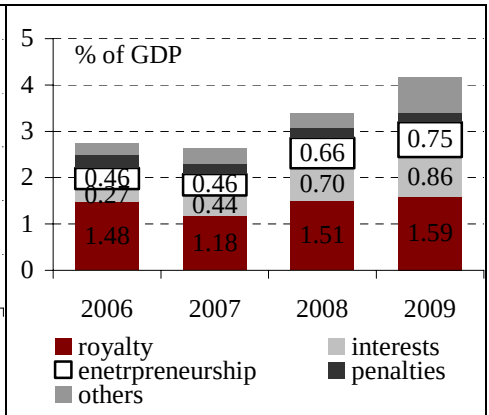
Non-tax revenues increased somewhat between 2006 and 2008 (see Figure 2.6, data for previous years is not fully comparable). Most of this growth came from interest on budget deposits in the banking sector. The amount of these deposits was growing as the government attracted more privatization receipts and loans than required for deficit financing and directed these sources to the banking sector, thus stimulating banking loans to the real sector. Revenues in the form of royalties shrank in 2007, when the economy suffered from a gas price increase, but they were restored in 2008 when Belarus' state enterprises benefited from an oil price hike.

Figure 2.5 General government revenues formed by taxes on foreign trade



Source: Ministry of Finance.

Figure 2.6 Non-tax general government revenues



Source: Ministry of Finance.

Contributions to the SSF, which were included in the GG budget in 2004, did not change (see Table 2.2). The sources of this fund were spent almost fully on the needs of the pension system, so their dynamics do not actually influence the government possibilities to finance its investment programs or social expenditures.

Public sector expenditures

The dynamics of GG expenditures followed that of GG revenues (see Table 2.2). More or less comparable data on the structure of the expenditures is available from 2004, so it is possible to trace which sectors benefited from the growing fiscal redistribution in the economy only starting from this year. According to the economic classification, there was a significant growth in subsidies and current transfers in 2005 (see Table 2.4), resulting in total current expenditure growth, as the innovation funds were included in the budget. Some contraction of these expenditures took place in the next year. Besides, the volume of net loans provided by GG fell. Some of these saved resources were redirected to capital expenditures, and the rest was channeled to the banking sector, where the GG surplus has accumulated. In the pre-crisis years of 2007 and 2008, some other trends should also be highlighted. First of all, there was a reduction in public expenditures on wages and related tax payments. This signalizes that wages in the public sector were growing slower than labor productivity and the economy in general. Second, there was an increase of subsidies to the real sector as the government was forced to reimburse Russian export duties on oil to the oil refinery business. Third, capital public expenditures were growing, as public investments were gaining an important role in

economic growth acceleration. Fourth, high economic growth rates in 2008 were sustained by direct public support to the banking sector, as the government recapitalized state-owned banks by BYR 3 trn (EUR 1 bn), which resulted in the related growth in GG expenditures.

Table 2.4. General government expenditures by economic classification, % of GDP

	2004	2005	2006	2007	2008	2009
Total	**45.6**	**48.0**	**47.0**	**49.0**	**49.5**	**46.6**
Current expenditures	36.8	38.6	37.2	38.5	37.4	34.8
Wages	*7.8*	*8.3*	*8.2*	*7.7*	*6.7*	*6.8*
Social contributions	*2.2*	*2.3*	*2.3*	*2.1*	*1.8*	*1.8*
Interest payments	*0.5*	*0.4*	*0.4*	*0.4*	*0.6*	*0.8*
Subsidies and current transfers	*18.2*	*19.8*	*19.1*	*20.9*	*21.4*	*19.0*
Other current expenditures	*8.1*	*7.8*	*7.2*	*7.3*	*6.9*	*6.5*
Capital expenditures	8.3	8.5	9.6	9.9	10.1	8.2
Net loans provided	0.5	0.9	0.3	0.6	2.0	3.6

Source: Ministry of Finance.

Table 2.5. General government expenditures by functional classification, % of GDP

	2004	2005	2006	2007	2008	2009
Total	**45.6**	**48.0**	**47.0**	**49.0**	**49.5**	**46.6**
General public expenditures	5.1	6.3	6.2	6.7	8.3	5.9
Defense issues	1.0	1.1	1.3	1.2	1.1	1.0
Law enforcement issues	2.0	2.2	2.2	2.1	1.8	1.8
National economy	9.1	9.4	9.6	11.5	12.8	12.0
Environmental issues	0.6	0.6	0.6	0.6	0.4	0.3
Household utilities	2.8	2.6	2.1	2.2	2.4	2.2
Healthcare	4.6	4.7	4.5	4.5	3.9	3.9
Sports, culture, mass media	1.1	1.1	1.2	1.2	1.1	1.0
Education	6.0	6.3	6.0	5.7	5.2	4.9
Social policy (incl. social security)	13.2	13.7	13.4	13.4	12.6	13.6

Source: Ministry of Finance.

According to the functional classification, in 2004–2008 there was an increase in the share of GDP of general public expenditures and expenditures on the national economy (see Table 2.5). General public expenditures were growing due to the public investment program which is included in this expenditure category. The national economy expenditures increase was a result of the introduction of subsidies to oil refineries. At the same time, since 2006, there was a decline in the shares of social expenditures of education and healthcare. A particularly signifi-

cant reduction of the share of social expenditures in GDP took place in 2008 when Belarus first faced the consequences of the global financial crisis.

Local budget expenditures focus on the social policy sector. Most of the public expenditures on healthcare, education, culture, as well as housing and utilities, are covered by local government budgets. The shares of local budgets in financing these expenditures are stable across time (see Table 2.6). There were changes in the volume of expenditures on less vital issues for the local budgets, such as ecological issues, national economy and general public expenditures. Expenditures on ecological issues started to be partly covered by local government budgets only in 2008, and their share is growing. However, this does not influence the general distribution of expenditures, as the total amount of these expenditures is rather negligible. One of the most important lines of expenditures within the "general public expenditures" is the state investment program. In 2009 the local budgets financed 63.4% of the program. Other general public expenditures fall largely under the responsibility of the central government. So increased general public expenditures by local government budgets in 2009 was actually a result of the changes in the volume of the investment program and the structure of its financing. Local government expenditures on the national economy fluctuated due to changes in public support for agriculture. Financing of agriculture increased in 2009 from 3.5% of GDP to 4.0%. A major part of this growth (0.3 percentage points) occurred at the expense of the local budgets[6].

Table 2.6. Share of local budgets within different groups of public expenditures

	2006	**2007**	**2008**	**2009**
General public expenditures*	52.0	58.2	50.9	64.8
Defense	1.5	1.4	1.4	1.4
Law enforcement	14.8	15.0	15.4	14.9
National economy	21.5	18.9	13.9	17.6
Ecological issues	0.0	0.0	10.2	25.3
Housing and utilities	99.5	99.6	99.3	99.2
Healthcare	78.0	78.3	79.8	78.3
Culture, sport, mass media	60.1	62.8	65.4	63.1
Education	79.4	80.5	81.0	81.2
Social policy	7.4	7.8	8.2	7.7
Total expenditures	*37.4*	*37.3*	*36.1*	*36.8*

Note.* Transfers from the central government budget to local budgets were excluded.
Source: Ministry of Finance.

[6] This can partly be explained by the government's policy in 2010. It had to run a non-deficit central government budget (according to the SBA program with the IMF), so a part of the expenditures on agriculture might have been shifted to the local government budgets.

A more detailed structure of the expenditures on healthcare and education after 2006 is presented in Table 2.7. As far as the healthcare sector is concerned, most of the reduction in 2008 related to expenditures on medical services for citizens (which is actually the main line of expenditures in the group). This reduction was more or less proportional in local and central government budgets, however it led to a small increase of the share of public expenditures on healthcare issues covered by local government budgets. In 2008 almost 80% of the healthcare related expenditures were financed by local governments, including 86.6% of expenditures on medical services to the citizens themselves.

Table 2.7. Public expenditures on healthcare and education issues

	General government expenditures				**Local government expenditures**			
	% GDP				**% of total general government expenditures**			
	2006	**2007**	**2008**	**2009**	**2006**	**2007**	**2008**	**2009**
Healthcare	***4.45***	***4.44***	***3.90***	***3.91***	***78.0***	***78.3***	***79.8***	***78.3***
Medical services to citizens	3.88	3.80	3.36	3.32	84.1	85.3	86.6	87.2
Sanitation and epidemiological control	0.13	0.11	0.10	0.10	74.9	88.4	90.6	91.2
Applied engineering and research	0.02	0.02	0.02	0.02	0.0	0.0	0.0	0.0
Other	0.42	0.51	0.43	0.48	27.5	26.6	27.6	17.4
Education	***6.04***	***5.69***	***5.15***	***4.95***	***79.4***	***80.5***	***81.0***	***81.2***
Preschool education	0.99	0.97	0.94	0.95	96.8	97.0	99.3	99.2
General secondary education	2.93	2.75	2.46	2.34	99.4	99.3	99.5	98.8
Vocational education and training	0.40	0.38	0.34	0.34	97.1	97.1	96.9	97.5
Secondary specialized education	0.40	0.36	0.30	0.29	27.5	27.3	29.9	31.9
Higher and post-graduate education	0.77	0.69	0.64	0.63	0.0	0.0	0.0	0.0
Career enhancement and continuing education	0.07	0.07	0.06	0.06	37.2	39.3	37.5	39.1
Out-of-school education	0.28	0.27	0.24	0.22	94.3	94.4	95.2	97.4
Applied engineering and research	0.02	0.02	0.01	0.01	0.0	0.0	0.0	0.0
Other	0.18	0.19	0.15	0.12	75.8	83.0	78.3	85.8

Note: "Other" is constituted largely of capital construction and repair and related expenditures.
Source: Ministry of Finance.

Expenditures on education are also largely (by more than 80%) financed from the local government budgets. The central government covers costs related only to higher education (100%), career enhancement and continuing education (62%), and secondary specialized education (70%). Education at schools and kindergartens is financed from local budgets. The relative fall in expenditures on education in 2006–2008 related to all lines of funding, so the proportion between central and local government budgets did not change. However, the largest relative fall occurred within general secondary education, which was caused primarily by demographic factors (see Section 3).

The GG budget recorded a small surplus in 2004–2008. It reached its maximum of 1.4% of GDP in 2008, as the Belarusian government was accumulating sources for anti-crisis policies at the end of the year. For this, it cut expenditures on the national economy (a reduction of 2.2% of GDP yoy in the fourth quarter of 2008) and in December 2008, it recalled a decision on a wage increase of 24.7%, restricting the growth of the wage rate by 5.5%.

2.2. Fiscal performance during the crisis

2.2.1. Macroeconomic developments during the crisis

Due to the high degree of openness of the Belarusian economy, foreign trade became the chief channel of transmission of the global financial and economic crisis into the country. The most significant decrease of both export and import volumes was noted in trade with Russia. In the 4th quarter of 2008, exports to Russia dropped by 21.2% yoy, while imports decreased by 20.3% yoy. In trade with non-CIS countries in the 4th quarter of 2008, exports decreased by 10.3% yoy, while imports increased by 32.4% yoy. Overall, the decrease in exports amounted to 14.7% yoy, while that of imports was only 1.8% yoy. Since then, a sharp fall in external demand alongside weak adjustments of imports became a distinctive characteristic of Belarus during the crisis, which was a consequence of the measures taken by the government to prevent a fall in output.

To mitigate the situation in foreign trade with CIS countries, particularly Russia, the government permitted exporters, on a provisional basis, to sell their products at prices lower than production costs, which was previously prohibited by price regulations (Kruk, Tochitskaya, Shymanovich (2010)). Furthermore, the authorities used a one-shot 20% devaluation of the national currency as of January 1st, 2009, considering it an important measure directed at stimulating exporters and

restricting consumer imports. However, this measure did not affect external demand very much and Belarusian exports proceeded to fall in 2009, while the contraction of imports was much more modest. Hence, in the 1st half of 2009, Belarus faced an enormous deficit in the current account, which amounted to 18.9% of GDP (5.5% of GDP in the 1st half of 2008). Later on, in the 2nd half of 2009, external demand began to show signs of recovery, though this recovery was very weak. On the other hand, the government weakened its stimulation of domestic demand, which restricted imports a bit. Finally, in 2009, the current account deficit amounted to 13.0% of GDP, which was mainly financed by increased public external debt (loans from the IMF, World Bank, loans from other countries, etc).

Despite a decrease in external demand in the 2nd half of 2008, Belarusian authorities made an attempt to maintain high growth rates. In the opinion of the government, stimulating domestic demand was the most acceptable way to attain that objective. The government justified this policy by the alleged absence of financial sector distortions, which were typical for the other countries in the region. Accordingly, the government believed that there were no fundamental reasons for a recession in the national economy, and that it was feasible and expedient to substitute external demand with domestic demand.

In 2009, economic policy measures led to an increase of virtually all components of domestic demand. The highest growth rate and the largest contribution to real GDP growth were secured by capital investments. This domestic demand component is usually highly sensitive to external environmental factors and quite volatile. In Belarus, however, capital investments display antithetic properties: sustainability in an unfavorable external environment and inertia. This is almost entirely attributable to the measures implemented by the government. The economic authorities believed that economic activity would help them to stimulate a number of sectors in the domestic economy, primarily construction. So, it was expected that the sectors producing investment goods and services would become a new source of growth of the national economy and somehow galvanize the other sectors.

For stimulating capital investments, a number of instruments were used, the majority of which were associated with credit incentives by the National Bank of the Republic of Belarus (NBRB). They took the form of an extensive supply of credit resources by the banking system, which in turn were supported by extra-refinancing by the NBRB. It was this source of funding that underpinned almost all growth of capital investments recorded in 2009. In its turn, fiscal stimuli were almost not used for the stimulation of investments (except those assuming partial compensation of the interest rates to banks that granted loans on a concessional basis). This kind of domestic demand stimulation may be, in a sense, interpreted as a quasi-fiscal activity, which pushed additional demand for imports. To neutralize

the rapidly growing external imbalances, the government resorted to external borrowings, which resulted in a massive accumulation of external debt.

It was assumed that the stimulation of capital investments during the crisis would facilitate the rapid technological renovation of the national economy and increase the level of competitiveness of Belarusian enterprises. Based on that assumption, the government believed that the deteriorating financial conditions of enterprises, the lack of working capital, and the emergence of additional demand for imported goods were only temporary problems.

However, from the short-term view, the policy of investment demand stimulation and setting targets on output hit the firms of the real sector. Many of them had to maintain their volumes of production close to the previous year's level, which was not supported by a corresponding demand. Hence, a large portion of the produced goods were frozen as finished products inventories. The amount of such inventories fluctuated around 90% of the average monthly output through 2009. In other words, a huge part of their working capital was actually moved out of their economic activity. These adverse trends undermined the financial stability of the enterprises, and their profitability was lowering throughout 2009 (the average profitability of sold products dropped from 14.0% in 2008 down to 10.3 in 2009, while the profitability of sales dropped from 7.9% down to 6.1% correspondingly). Besides, in addition to output targets, individual enterprises received wages/salaries directives. To comply with those directives, many enterprises had to reduce their own competitiveness. On the macroeconomic level this phenomenon manifested itself in a massive increase of unit labor costs during the crisis. Thus, the public finance situation was deteriorating and new challenges appeared.

On the macro level, such a policy mix resulted in avoiding a recession in 2009 (a growth of real GDP by 0.2% yoy was recorded), which became one of the best indicators on GDP growth in the CEE region in 2009. However, Belarus had to pay a price for these dynamics through the accumulation of longer-term distortions in its economy: risk exposure and non-performing loans in the banking sector recorded substantial growth, external debt accumulation rapidly increased, and the current account deficit became more painful and persistent. Also, it should be emphasized that in the second half of 2009, the stimulation of economic activity was weakened in order to mitigate the accumulation of structural distortions.

A series of additional shocks hit the Belarusian economy at the beginning of 2010. Russia's attempt to revise the terms and conditions of an oil trade with Belarus became the most crucial one. The new conditions of the oil trade had a negative impact on the trade balance, the profitability of the fuel and adjacent branches, and the consolidated budget. Trying to mitigate the impact of the shock on trade conditions and enterprises, the government began to conceptually revise the logis-

tics scheme of oil-refinery. For instance, they decided to restrict imports of crude oil from Russia; in 2010 it was reduced by about 40%. The plan was to import the crude oil needed for ensuring the oil-refineries worked at full capacity from other countries, videlicet Venezuela and Azerbaijan. In 2010, the authorities succeeded in providing a portion of the needed amount of crude oil from Venezuela, and awarded Venezuela with a contract for the supply of about half of the necessary volume of crude oil for Belarusian oil-refineries for 2011-2013.

The oil shock and sharp decrease in the imports of crude oil in the 1st quarter of 2010 (while oil-refineries continued processing the accumulated stock of crude oil), along with a slight improvement in exports led to a considerable improvement in net exports. Hence, it became the main contributor to GDP growth, which amounted to 4.0% yoy in this period. However, as of the 2nd quarter of 2010, the government tasked non-financial firms with providing high growth rates in 2010 (11-13% yoy) and a boost in average wages (the indicator of USD 500 by the end of 2010 was targeted while in 2009 the average wage amounted to USD 385), which continued 'heating' the economy. While striving for sharp growth in real wages, the government actually considered household consumption the main growth factor. The scheme of economic functioning was similar to that of the first half of 2009. However, unlike in 2009, there was a certain recovery in external demand in 2010, which widened the possibilities of expansionary economic policy.

2.2.2. Developments in revenue and expenditure flows

The global economic crisis significantly affected public finances in CEE and CIS countries. Most of the impact came through the increase in expenditures due to the automatic stabilizers, state interventions into the economy intended to support the banking and real sectors, and the reduction in budget revenues as a result of declining economic activity. The last channel was the most influential in the case of Belarus. The economic stimuli packages to the real sector (agriculture and construction) also played some role but the scale of these subsidies was minimized by the IMF Stand-by agreement which included a non-deficit central budget requirement. Automatic stabilizers did not influence the public finance sector, as they are almost absent in Belarus. The unemployment benefits amount to only 17-18% of the subsistence minimum and the official unemployment rate is below 1%, even after the crisis.

The global economic crisis hit the real sector in the third quarter of 2008. Hence, the first signs of the crisis in the public finance sector could be observed in the fourth quarter. Actually there was still growth in the GG revenues on a year on year basis, but it was slowing. The first taxes reflecting the crisis' influence on

public finances were the VAT and profit tax. VAT revenue fell by 1.2% of GDP yoy in the fourth quarter of 2008 (from 9.4% of GDP in the fourth quarter of 2007 to 8.2% in 2008). A reduction of the profit tax revenues was just 0.1% of GDP (from 4.2% of GDP in the fourth quarter of 2007 to 4.1% in 2008), but in the third quarter of 2008 there was still an increase in tax revenues of 1.5% of GDP yoy (5.2% vs 3.7). This shows the scale of the slowdown, which began at the end of 2008. However, it was just the first sign of the crisis, as its true scale was revealed only in 2009.

In 2009, the GG revenue was reduced by 5.1% of GDP yoy down to 45.9% of GDP (see Table 2.8), which is actually a result of both the crisis and the tax system simplification. The fall occurred due to the drop in tax revenues, as non-tax revenues and social contributions grew in 2009 by 0.8 and 0.3% of GDP respectively. So the tax revenues shrunk by 6.1% of GDP yoy, and most of this fall took place in the first half of the year: The reduction was 7.7 and 7.5% of GDP yoy in the first and the second quarters, while in the fourth quarter it was only 3.5% yoy. The crisis affected all kinds of tax revenues, but taxes on foreign trade, income and profit, and goods and services were the most affected by the crisis.

Table 2.8. General government revenues within the crisis period, % of GDP

	2008	2009	2008				2009				2010	
			1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Revenues	**51.0**	**45.9**	**54.2**	**53.4**	**47.3**	**50.4**	**47.7**	**46.2**	**41.6**	**48.8**	**32.3**	**31.0**
Tax revenues	36.3	30.2	39.4	37.3	33.8	36.0	31.7	29.8	27.3	32.5	29.9	28.1
Taxes on profit and income	8.7	7.0	8.6	8.9	8.6	8.6	7.2	7.4	6.4	7.2	6.9	7.8
Personal income tax	*3.2*	*3.1*	*3.2*	*3.1*	*2.9*	*3.9*	*3.7*	*3.3*	*2.7*	*3.1*	*3.2*	*3.3*
Profit tax	*4.7*	*3.4*	*4.1*	*5.2*	*5.2*	*4.1*	*3.1*	*3.6*	*3.3*	*3.5*	*3.2*	*3.9*
Taxes on property	1.6	1.2	1.7	1.8	1.3	1.5	1.4	1.2	1.0	1.2	1.2	1.2
Taxes on goods and services	15.9	14.6	17.5	16.4	15.3	15.0	16.2	14.4	13.3	14.8	14.2	14.6
VAT	*8.8*	*8.8*	*10.1*	*9.3*	*8.2*	*8.2*	*10.0*	*8.7*	*8.0*	*9.0*	*9.7*	*10.4*
Excise	*3.0*	*2.7*	*3.0*	*3.1*	*3.3*	*2.7*	*2.5*	*2.7*	*2.6*	*2.8*	*2.8*	*2.7*
Taxes on foreign trade	8.2	5.8	9.0	8.2	7.0	9.1	5.2	5.1	5.2	7.7	5.4	3.2
Other taxes	2.0	1.6	2.5	1.9	1.6	1.9	1.7	1.7	1.4	1.7	2.2	1.4
SSF contributions	11.3	11.5	11.7	12.0	9.9	11.7	12.7	12.5	10.1	11.2	--	--
Non-tax revenues	3.4	4.2	3.1	4.1	3.6	2.7	3.3	3.8	4.2	5.1	2.4	2.8

Source: Ministry of Finance.

The most significant fall in 2009 occurred in the revenues from taxes on foreign trade. They shrank from 8.2% of GDP in 2008 to 5.8% of GDP in 2009[7]. The fall was very sharp in the first quarters, as export duties on oil and petroleum products formed the major part of this group's revenues, and they suffered from the world oil price reduction. Export duties fell by 2.2% of GDP during 2009, while import duties contracted just by 0.2% of GDP, despite a 27.5% import reduction yoy[8] (see Figure 2.5). The revenues from taxes on foreign trade were falling much slower as oil prices stabilized and the Belarusian government introduced a EUR 50 per ton export duty on potash fertilizers in the second half of 2009.

There was also a serious decrease in the GG revenues from taxes on profit and income. They went from 8.7% of the GDP in 2008 down to 7.0% in 2009. A major part of the fall related to taxes on profit. The economic turmoil slowed the growth of the Belarusian economy down from 10% in 2008 to 0.2% in 2009. As a result, the profits of Belarusian companies dropped by 21.4% in nominal terms. This caused a reduction in the GG revenues from the tax on profit by 1.4% of GDP. The maximum reduction was observed in the third quarter of 2009, as the economy was contracting by 1.1% yoy. Revenues from personal income tax remained largely at the levels of the previous year. In the first half of 2009, there was even an increase in public revenues from this tax, while a reduction took place in the second part. Such dynamics can be explained by two factors. First of all, it is interrelated with the dynamics of the wages and their contribution to GDP. Wages constituted 52.5 and 51.7% of GDP respectively in the first two quarters, which is much higher than in 2008 (48.6 and 46.3% of GDP). Their contribution to GDP fell to 42.1% (39.3% in 2008) in the third quarter thus leading to a reduction of the personal income tax revenue measured in relation to GDP. Second, such dynamics of the personal income tax payments is related to the introduction of the flat tax rate at the level of 12% starting in 2009[9]. The progressive tax scale that existed earlier implied that in the beginning of the year, most of the income was taxed at a 9% rate. Closer to the end of the year, the average tax rate was much higher (12 or 15% on average as cumulative income was growing), and additional payments were required to fulfill the recalculated tax obligations of previous months. The

[7] One should take into account the 30% devaluation of the BYR in 2009, which means that the actual fall of these taxes (collected in foreign currency) was even sharper.

[8] Most of the import reductions took place due to the fall in prices on imported energy goods, which are not falling under import duties. Besides, there was an increase in import tariffs on consumer goods in April 2009 (see section 2.2.3), which slowed down the fall of import duties revenues of the general government budget.

[9] The amount of non-taxable deduction was increased from BYR 31 thsd (EUR 9.9) to BYR 250 thsd (EUR 64.3) in order to limit the tax burden increase for the poor, who paid taxes at the rate of 9% before the reform.

newly adopted flat tax rate made the distribution of tax payments more even within the year, explaining the growth of revenues in the first half of 2009 and the reduction in the second half.

The volume of taxes on goods and services also decreased in 2009, but this was caused by changes in tax rates rather than the crisis. The fall in revenue from this tax group by 1.3% of GDP can be explained by the further reduction of the agricultural levy rate from 2 to 1% of turnover[10]. Besides, the reduction of the rates of the local tax on retail sails for imported goods from 15 to 5% and the tax on acquisition of road vehicles from 5 to 3% contributed to the fall. Moreover, the tax rates within the simplified tax and accounting system for small enterprises were changed from 10 to 8% of the turnover if VAT is not paid, from 8% to 6% if an enterprise is not freed from VAT, from 20% to 15% when the tax base is a trade margin instead of turnover (for retail activity). GG revenues from VAT remained at 2008 levels, mainly due to the growth in the forth quarter of 2009 on a yoy basis (as the base for VAT was already low in that period).

As mentioned above, the non-tax and social contribution revenues, if measured as a % of GDP, increased in 2009. The growth of the social contribution by the end of the year and its dynamics within the year (as it was in the case of the personal income tax) is explained by the dynamics of wages in relation to GDP. The fact that wages grew faster than productivity in the first three quarters (as the share of wages in GDP was growing) guaranteed the growth in social contributions. Non-tax revenues grew in 2009 due to the contribution of 'other non-tax revenues', which grew by 0.5% of GDP (see Figure 2.6). Besides, revenues in the form of interests increased by 0.2% of the GDP as the government broadened its support to the real sector and to banks, especially in the first half of the year, when most of the interests' revenue was accumulated. Royalties remained the same as in 2008 thanks to their rapid growth in the fourth quarter of 2009, when the Belarusian economy began to overcome the consequences of the crisis and began to benefit from relatively high oil prices. Another positive factor was the low base of the fourth quarter of 2008, as the Belarusian economy was already being hit by the crisis at that time.

The negative dynamic in GG revenues continued in 2010. However, this was not related to the crisis anymore. It was a result of the measures taken to simplify the Belarusian tax system and, to an even greater extent, a consequence of the new oil import regime. As of 2010, Russia introduced a 100% export duty on oil that is exported to Belarus above the volume of its domestic demand set at the level of 6.7 m ton for 2010. These new arrangements forced the government to review the

[10] In 2008 the agricultural levy rate was reduced from 3 to 2% (see Section 2.1.2).

system of oil refinery taxation. The export duties on petroleum products produced from Russian oil were abolished in February, as well as subsidies to oil importers. As a result, revenues from taxes on foreign trade dropped from 5.1 to 3.2% of the GDP in the second quarter of 2010 yoy (see Table 2.8). And this fall is going to increase in the second part of 2010.

There was also a reduction in taxes on goods and services in the first quarter of 2010. This can be explained by the final abolishment of the agricultural levy and local tax on retail sales. The related losses in budget revenues were planned to be covered by the increase in the VAT tax rate from 18% to 20%. As VAT revenues have been growing only since the second quarter of 2010, the revenues from taxes on goods and services fell by 2% of GDP in the first quarter.

The expenditures of the GG budget began to fall much later than the revenues. A significant reduction in public expenditures was observed only starting from the second half of 2009. In general, the fall in expenditures reached 2.9% of GDP by the end of 2009, which is much less in comparison to the revenues. The fall occurred within all groups of expenditures according to their functional classification, except for social policy expenditures. But the scale and dynamics of the reduction differed greatly among different groups of expenditures.

Most of all, the global economic crisis affected expenditures on the national economy and general public expenditures (see Table 2.9). The key lines of the general public expenditures are external debt servicing and state investment program. External debt servicing grew by only 0.1% of GDP, despite the rapid growth in debt stock[11], due to the privileged conditions attached to the loans received from the IMF in 2009. Expenditures in the investment program saw a tremendous fall in the fourth quarter of 2009, while there was even a slight increase in the first half of the year. However, the fall in the fourth quarter of 9.5% of GDP is explained by the high base of 2008, when the government recapitalized state-owned banks by BYR 3 trln (EUR 1 bn). General public expenditures resumed their growth in the second quarter of 2010, as the government began to stimulate investments by increasing expenditures on the state investment program.

Expenditures on the national economy were reduced by 0.8% of the GDP in 2009. This reduction would be much higher if not the fourth quarter of 2009, when there was a growth of 0.9% of GDP yoy. The dynamics of these expenditures were closely related to the oil price fluctuations, as a significant part of them were caused by the subsidies to oil importers. Thus the growth in oil prices at the end of the year, especially in comparison to the end of 2008, meant an increase of these subsidies and expenditures on the national economy as a whole. New oil refinery

[11] Public external debt grew in 2009 from 5.9 to 17.1% of the GDP.

conditions set in February of 2010 led to the abolishment of these kinds of expenditures and resulted in a reduction of GG expenditures on the economy of 4.8% of GDP in the second quarter of 2010. Contrary to the dynamics of the subsidies to oil importers, there was a growth in expenditures on agriculture in 2009. This was viewed as one of the sources of growth in the crisis period and government support directed towards agriculture increased by 0.5% of GDP.

Table 2.9. General government expenditures by functional classification within the crisis, % of GDP

	2008	2009	2008				2009				2010	
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Expenditures	**49.5**	**46.6**	**45.7**	**50.5**	**42.4**	**59.3**	**45.6**	**50.7**	**39.6**	**51.3**	**35.4**	**34.7**
General public expenditures	8.3	5.9	4.9	6.2	7.0	14.0	4.8	7.7	6.4	4.5	4.7	8.2
Defense issues	1.1	1.0	1.1	1.0	0.9	1.2	0.9	0.9	0.7	1.4	0.9	0.8
Law enforcement issues	1.8	1.8	1.9	1.9	1.6	1.9	1.9	1.8	1.5	2.0	1.9	1.8
National economy	12.8	12.0	11.5	13.6	11.7	14.3	9.9	12.3	10.2	15.2	11.3	7.5
Environmental issues	0.4	0.3	0.3	0.4	0.4	0.6	0.1	0.2	0.3	0.5	0.1	0.3
Household utilities	2.4	2.2	2.0	2.4	2.4	2.7	2.3	2.4	2.0	2.2	2.2	2.5
Healthcare	3.9	3.9	4.0	4.2	3.3	4.2	4.0	4.0	3.2	4.6	4.1	3.8
Sports, culture, mass media	1.1	1.0	1.1	1.2	0.9	1.3	1.1	1.0	0.8	1.2	1.0	1.0
Education	5.2	4.9	5.8	6.1	3.5	5.6	5.8	5.9	3.4	5.2	5.9	5.5
Social policy*	12.6	13.6	13.0	13.5	10.7	13.4	14.6	14.5	11.1	14.6	15.1	15.2

Note. * Expenditures on social policy in the first and second quarters of 2010 are presented with expenditures of the SSF. According to the new budget classification (which excludes the Social Security Fund), they were equal to 3.3 and 3.2% of GDP (3.1 and 2.8% of GDP in 2009 respectively, excluding SSF).
Source: Ministry of Finance.

Social expenditures showed some growth during the crisis, but it was not related to the automatic stabilizers. Most of the growth came from increased public support to households for the purchase of apartments within the social programs. The government significantly widened the range of households that could apply for privileged loans in 2009. Hence, this measure was largely designed to support the construction sector, which was to be another source of growth in 2009. Besides, there was some increase in SSF expenditures in 2009 due to the pension increases in late 2008 and autumn of 2009.

According to the economic classification of expenditures, the crisis affected the volume of subsidies and current transfers and capital expenditures (see Table 2.10). The reduction in subsidies by 2.4% of GDP in 2009 once again highlighted

the dependence of Belarusian public expenditures on world oil prices. It became especially obvious during the second quarter of 2010, when, after the oil importers subsidies were abolished, the volume of total subsidies and current transfers fell by 0.9% of GDP, while there was a growth of 2.6% of GDP one quarter earlier. Capital expenditures reduced by 1.9% of GDP, but the volume of the net loans provided by the GG grew simultaneously by 1.6% simultaneously. This means that the government preferred to support the economy by means of the loans during the crisis, as capital expenditures have a more long-term and rather non-immediate effect over the development of the economy. This trend was reversed in the first half of 2010, as the government minimized the volume of net credits to the economy and increased capital expenditures again. However their volume was lower compared to the pre-crisis level.

Table 2.10. General government expenditures by economic classification, % of GDP

	2008	2009	2008				2009				2009*		2010	
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q1	Q2
Total expenditures	49.5	46.6	45.7	50.5	42.4	59.3	45.6	50.7	39.6	51.5	34.1	39.1	35.4	34.7
Current expenditures	37.4	34.8	39.8	40.7	31.5	39.3	38.5	37.2	27.5	37.7	27.0	25.6	29.5	24.2
Wages	*6.7*	*6.8*	*7.4*	*7.9*	*5.1*	*6.9*	*7.5*	*8.2*	*5.4*	*6.5*	*7.5*	*8.2*	*7.5*	*7.5*
Social contributions	*1.8*	*1.8*	*2.0*	*2.2*	*1.4*	*1.9*	*2.0*	*2.2*	*1.5*	*1.7*	*2.0*	*2.2*	*2.0*	*2.0*
Interest payments	*0.6*	*0.8*	*0.5*	*0.5*	*0.4*	*0.9*	*0.9*	*0.8*	*0.7*	*0.8*	*0.9*	*0.8*	*0.8*	*0.7*
Subsidies and current transfers	*21.4*	*19.0*	*23.1*	*23.2*	*19.1*	*21.3*	*21.3*	*20.3*	*15.1*	*20.2*	*9.9*	*8.8*	*12.5*	*7.9*
Other current expenditures	*6.9*	*6.5*	*6.8*	*7.0*	*5.6*	*8.2*	*6.8*	*5.7*	*4.9*	*8.6*	*6.6*	*5.6*	*6.6*	*6.0*
Capital expenditures	10.1	8.2	5.9	10.0	9.3	14.1	5.4	7.3	7.7	11.5	5.4	7.3	6.0	8.9
Net loans provided	2.0	3.6	0.0	-0.2	1.6	5.9	1.7	6.1	4.3	2.2	1.7	6.1	0.0	1.6

Note. *according to the new budget classification that excludes SSF.
Source: Ministry of Finance.

Another type of expenditure that increased during the crisis were interest payments, as the public debt grew significantly in 2009. Debt servicing decreased if measured as a % of GDP in the beginning of 2010, as Belarus did not attract loans in the first half of the year (only the last tranche of the IMF loan). Moreover, expenditures on wages also decreased in the first half of 2010. This means that pro-

ductivity growth was higher than the wage increase at that time. Hence, the government was accumulating its capacity for a later wage increase in 2010 in order to meet the promised level of USD 500 per month before the presidential elections.

Expenditures on education and healthcare did not directly suffer during the crisis. The fall in education expenditures of 0.3% of GDP was part of the trend started in 2005, which seemed to continue in 2010 as a result of reforms in this sector as well as demographic trends (most of the reduction was related to expenditures on general secondary education). Expenditures on healthcare remained unchanged in 2009 if measured as a % of GDP.

As a result of the decline in GG revenues and reduced expenditures the budget moved from a surplus (1.4% of GDP) in 2008 to a deficit in 2009 (0.7% of GDP including 1.0% of GDP deficit of local budgets[12]). Moreover, according to the new classification (which excludes SSF), the deficit in 2009 was equal to 1.8% of GDP. The deficit was financed from external sources in the form of loans from the governments of other countries and international financial organizations at BYR 11.5 trln (EUR 3.0 bn), or 8.4% of GDP. The rest of these sources and other financial sources attracted by the government net of principle debt repayment of previous years were allocated to the banking system at the volume of 7.1% of GDP.

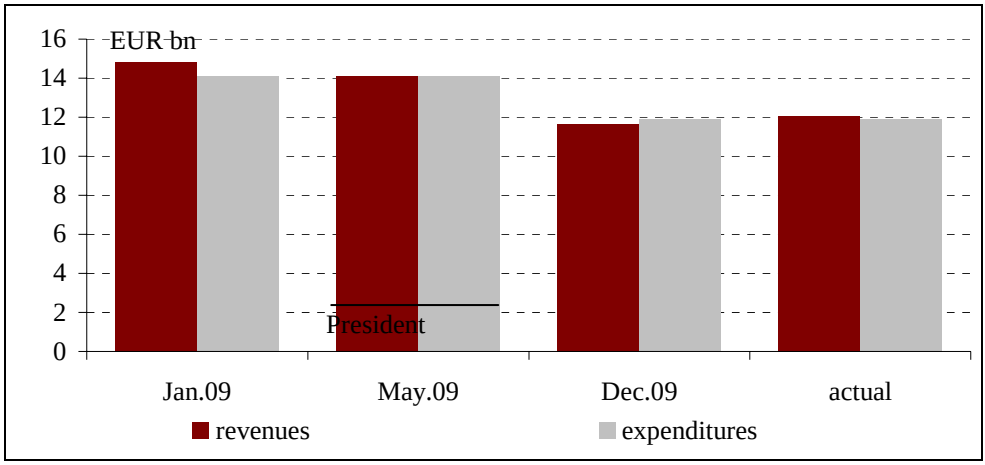
Thus, data on public finance sector development shows that the use of fiscal policy instruments was limited during the crisis. On the one hand, this was a result of the IMF Stand-by program, which included an arrangement that the Belarusian government would run a non-deficit central government budget, and the maximum deficit of local budgets should not exceed 1.5% of GDP. Besides, the Belarusian government was expected to limit the wage increase within a 10% threshold, which also influenced the pension expenditures. On the other hand, the possible growth of public expenditures was interrelated with the inflation risk, while the low inflation of 2004–2008 was the main precondition for the rapid economic growth in these years.

Under such circumstances, the government reaction boiled down to the regular downward review of the central (and thus general) government budget expenditures (see Figure 2.7). The central government budget expenditures plan was reconsidered for the first time in May 2009. Formally, they were cut by BYR 2.8 trln (EUR 0.7 bn) down to BYR 54.9 trln (EUR 14.1 bn) in order to fit the planned level of the revenues at that time. However, in reality, the reduction was much

[12] The deficit of local budgets is usually financed by privatization receipts and domestic borrowing in the form of bonds issued by local governments. They are usually acquired by the banking sector. The rates are often not market ones. For example, Baranovichi local authorities issued 19 year bonds at the rate of 1% (see http://nmnby.eu/news/express/3009.html).

greater, reaching BYR 11 trln (EUR 2.8 bn) in the case of expenditures[13] and BYR 8.2 trln (EUR 2.1 bn) for revenues. It was not shown in the total balance, as these expenditures and revenues were reallocated to the Presidential Reserve fund (which is part of the GG budget). It was supposed that in case actual central government revenues exceeded BYR 46.7 trln (EUR 12 bn), these additional sources would have been spent on the reserved expenditures. However, this did not happen and the Ministry of Finance was forced to review the budget once again, so it could match the reality. The revenues were reduced by BYR 9.6 trln (EUR 2.5 bn) and the expenditures by 8.7 trln (EUR 2.2 bn), which is even greater than was reserved in the Presidential Reserve Fund.

Figure 2.7. Dynamics of the central government budget revenues and expenditures plan for 2009, EUR bn



Source: Ministry of Finance.

There was limited room to increase budget revenues during the crisis as the Belarusian tax system represented one of the highest burdens on the real sector in the world (World Bank (2009)). Only minor adjustments were made, including:

- An increase in import duties on trucks and busses and a range of consumer goods, including food staff, electronics and clothing in April 2009;
- Excises on alcohol and tobacco were increased by up to 15% and an excise on liquefied gas was introduced in July 2009;
- Export duties on potash fertilizers were introduced in September 2009.

[13] Expenditures such as subsidies to the oil refinery business, state investment program financing and expenditures of the SSF were mostly cut.

2.2.3. Financial sustainability: mid-term forecast

One of the main challenges for Belarusian economic policy is avoiding the problem of twin-deficits, while stimulation of domestic demand through fiscal and quasi-fiscal operation results not only in higher fiscal pressure, but in progressing foreign trade deficit as well. A current account deficit has existed in Belarus for the last 5 years (from 2006) and is mainly a consequence of structural factors. However, since 2008, exaggerated domestic demand associated with the relevant growth of demand for imports was the key factor of trade deficit growth. According to official statistics, the budget deficit emerged only in 2009 but there is a threat to its longevity. It was politically inevitable in 2010 due to the presidential election and political-business cycle (Haiduk (2008)). However, if the fiscal adjustment does not take place in 2011 alongside the maintenance of quasi-fiscal operations for the stimulation of domestic demand, it may result in further growth of the current account deficit.

In the case of fiscal policy, measures should focus on the optimization of expenditures on the national economy, agriculture, and construction in particular. These sectors were viewed as those that could stimulate growth in the whole economy during the crisis. However, the efficiency of this support is doubtful. On the one hand, economic analyses show that the effect of investments on economic growth is steadily falling in Belarus (Kruk, Tochitskaya, Shymanovich (2010)), and more than half of investments in Belarus are related to construction. On the other hand, public expenditures on agriculture are enormous (Kruk, Tochitskaya, Shymanovich (2010)). However, soft budget constraints make this sector function inefficiently. The sector needs a revision of state support policy towards more targeted spending and public encouragement of private farming.

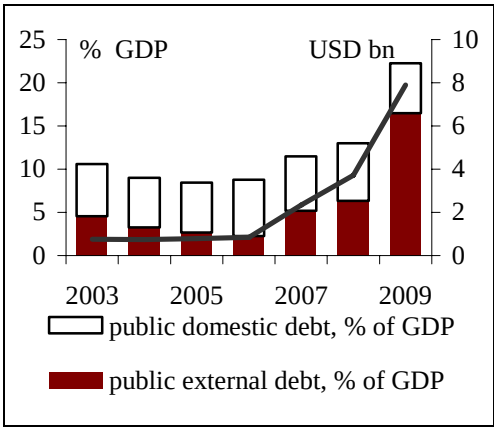
In general, privatization and a further increase of the private sector should lead to a reduction in public expenditures. The gradual privatization of the medium and large enterprises that are not viewed as strategic or monopolistic will inevitably result in a reduction of subsidies to the real sector. However, the prospects for privatization in the post-crisis period are unclear. On the one hand, investors do not have much interest in risky assets. On the other hand, the government is not eager to sell property for a low price, especially if compared to the pre-crisis years. Besides, privatization is not possible without labor market liberalization, which means a growing unemployment rate and growing public expenditures, along with the necessity of creating a system of social security for the unemployed. Nowadays the unemployment benefit is equal to 18% of the minimum subsistence level and its increase is inevitable in case the practice of full employment is to be abandoned.

The pension system creates another challenge for the public finance sector in the long-term. Nowadays it is a PAYG system that is financed from the SSF. Its revenues come from the social security contributions at the rate of 36% of the wage fund (35% is paid by the employer and 1% is paid by the employee). The SSF had a surplus of 1.1% of the GDP and accumulated reserves of 4.2% of the GDP in 2009. However the situation is going to worsen in the upcoming years. Population ageing, low fertility rates, and the absence of immigration lead to the steady decrease of the systemic old age dependency ratio. In twenty years, the number of people of working age is going to be even lower than the number of people in the pension age according to UN projections. In such circumstances the current pension system can function and guarantee an adequate replacement rate only if there is an increase in the contribution rate which is hardly possible, as this burden is already high. An increase of the pension age is one of the expected measures that can postpone the deficit of the pension system. However, life expectancy at retirement age is very low for men, thus limiting possibilities of an increase in the pension age. Still there is room for an increase in the pension age for women (Chubrik, et al. (2009)). Another reform option is a shift to the two-pillar pension system with a defined contribution scheme (Chubrik, Shymanovich (2008)).

Another long-term problem is the growing public external debt. It grew from 5.9 to 17.1% of the GDP in 2009 (see Figure 2.8). Debt growth has continued in 2010, as Belarus issued USD 1 bn Eurobonds with the average interest rate of 8.7%. The main reason for the public debt increase is not the budget deficit, but the current account deficit, which is partly a result of quasi-fiscal activity. Banks and the real sector are not able to attract the necessary resources in order to finance the foreign trade deficit, as they are rather scarce and expensive, and investors are uneager to go for risky assets after the global economic crisis. Besides, prospects of attracting FDI without economic liberalization are rather looming. So public external borrowings are the most expected source of foreign trade deficit financing within the current economic model, and it will keep on growing. Expenditures on servicing borrowings are not that high yet but they are going to increase in the upcoming years (see Figure 2.9), causing additional pressure on the public finance sector.

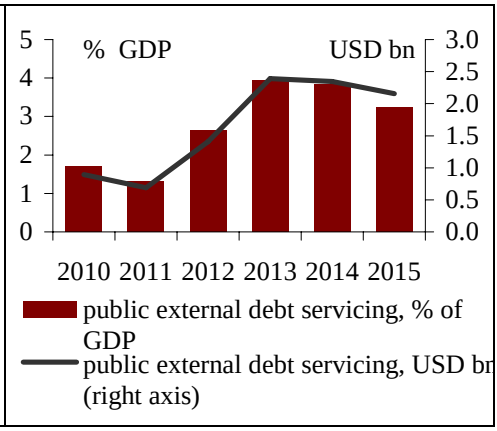
So there is a wide range of challenges for Belarus's financial sustainability in the middle and long term, which inevitably raises doubts about the availability of the sources to finance healthcare and education expenditures at current levels. Hence, the issue of increasing the efficiency of public expenditures in these sectors is gaining ground, which was not the case in previous years.

Figure 2.8. Belarusian public debt



Source: Ministry of Finance.

Figure 2.9. Belarusian public debt servicing



Note. Eurobonds of 2010 are not included.
Source: Ministry of Finance. GDP Forecast – IMF.

3. Education

3.1. Medium-term trends in the Belarusian educational system

The Belarusian educational system consists of the following levels:

1. Pre-school (pre-primary) education for children up the age of 6-7 years (Level 0 according to ISCED standards).
2. General secondary education
   - 2.1. Primary education. This level assumes 4 years of education for children between the ages of 6(7)-10(11) (Level 1 according to ISCED standards).
   - 2.2. Basic secondary education (lower secondary education). This level assumes 5 years of education for children between ages 10(11)-15(16) (Level 2 according to ISCED standards).
   - 2.3. Upper secondary education. This level assumes 2 years of education for children between ages 15(16)-17(18) (Level 3 according to ISCED standards).
3. Vocational education and secondary specialized education. Assumes 1-2 years of education after basic secondary education (Level 4 according to ISCED standards).
4. Tertiary education.
   - 4.2. Master's degree. Assumes 1-2 years of education after 'specialist' degree (Level 5B according to ISCED standards).
   - 4.3. Scientific degrees. (Level 6 according to ISCED standards).

Changes in the Belarusian educational system during recent decades are associated with the Soviet inheritance, demographic trends, changes in educational policy and changes in the external environment.

The Soviet educational system was financed exclusively by a government shaped education policy according to needs of the planned economy. Hence, there was an emphasis on vocational and secondary specialized education which was comparable in absolute numbers with the system of higher education (see Table 3.1).

Table 3.1. Selected indicators of the educational system in Belarus*

	1990	1995	2000	2005	2006	2007	2008	2009
Institutions providing pre-school education	5350	4576	4423	4150	4135	4109	4087	4097
in urban areas	2551	2362	2197	2013	2010	1999	1995	2007
in rural areas	2799	2214	2226	2137	2125	2110	2092	2090
Children, thsd.	608.0	458.0	390.8	366.7	365.6	365.3	367.7	372.8
The share of children, attending pre-school institutions, %	67.7	60.1	70.8	82.1	82.3	81.2	79.1	78.5
in urban areas	74.3	69.7	80.5	92.5	92.5	90.7	87.7	86.7
in rural areas	50.9	34.7	46.1	52.4	53.0	53.4	53.1	53.7
Gross enrolment ratio**	n/a	n/a	79	102	103	102	n/a	n/a
Net enrolment rate**	n/a	n/a	n/a	89	90	90	n/a	n/a
Institutions providing general secondary education***	5429	5007	4772	4187	4063	3927	3821	3719
in urban areas	1167	1275	1324	1327	1324	1315	1317	1310
in rural areas	4158	3650	3362	2784	2665	2541	2442	2354
Pupils, thsd.	1507.7	1582.2	1547.6	1240.9	1179.3	1134.9	1083.2	1006.7
Gross enrolment ratio**	n/a	n/a	87	96	96	95	n/a	n/a
Net enrolment rate**	n/a	n/a	n/a	89	88	87	n/a	n/a
Teachers, thsd.	123.2	138	151.5	145.6	144.3	143.9	139.1	135.3
Pupil-to-teacher ratio	12.2	11.5	10.2	8.5	8.2	7.9	7.8	7.4
in urban areas	15.9	14.0	12.1	10.1	9.7	9.3	9.3	8.9
in rural areas	7.4	7.5	6.9	5.7	5.4	5.3	5.1	4.9
Institutions providing vocational training	255	252	248	230	228	225	224	223
Students, thsd.	141.1	130.1	137.7	114.6	114.4	105.1	99.0	105.7
Institutions providing secondary specialized education*	147	149	156	204	205	204	206	211
Students, thsd.	143.7	122.4	150.3	154.1	152.5	155.0	157.3	166.6
per 10,000 population	141	120	150	158	157	160	163	172
Secondary specialized education entrants, thsd.	46.6	39.3	54.0	50.9	48.8	51.8	53.9	58.7
Secondary specialized education graduates, thsd.	42.2	37.0	43.8	49.3	44.3	43.1	44.0	42.5
graduates per 10,000 population	41	36	44	50	45	44	45	44
Institutions providing higher education*	33	59	57	55	55	53	53	53
Students, thsd.	188.6	197.4	281.7	383.0	396.9	413.7	420.7	430.4
per 10,000 population	185	194	282	393	409	427	435	445
Higher education entrants, thsd.	37.5	49.1	68.4	90.5	86.6	95.4	91.5	97.8

	1990	1995	2000	2005	2006	2007	2008	2009
Higher education graduates, thsd.	28.6	32.5	38.7	53.6	61.4	66.9	68.8	74.0
per 10,000 population	28	32	39	55	63	69	71	77

*Note:** data for pre-school education is given as of the end of the period, data on general secondary, vocational, secondary specialized and higher education is given as of the beginning of the corresponding academic year; ** data from UNESCO Institute for Statistics is given for the academic year ending in the corresponding period;*** since 1995, includes private educational establishments.
Source: Belstat, UNESCO Institute for Statistics.

Such an educational structure mirrored the specifics of the labor market in the state-controlled economy. While vocational and secondary specialized institutions accumulated a large fraction of those who graduated from general secondary institutions, the number of students getting higher education (in relative terms, i.e. per 10 thousand people) was much smaller than in developed countries. This peculiarity determined a most prominent trend during recent decades – a sharp increase of students in higher education both in absolute and relative terms. From this point of view, the progress was rather rapid - during the last two decades the number of students per 10 thousand people more than doubled – and this indicator became much closer to the benchmark figures (those in developed countries). In a sense, this may be interpreted as a 'natural' trend, which reflects the elimination of the Soviet distortions and the adjustment to a new economic reality.

However, this trend was recently reversed somewhat by educational policy. Claiming that working specialties are in the greatest demand at the labor market, the government increased the financing for vocational schools and provided incentives for additional students for this class of institutions. Hence, in 2009 the number of new entrants to vocational schools increased by 26% up to 60 thsd people, which is comparable to the levels of the mid 90-s. In secondary specialized schools, the number of new entrants in 2009 also rose, but it was mostly connected with the completion of the reform in secondary general education.

Moreover, the structure of secondary general and higher education changed, which may be associated with so called 'natural' trends as well. Among the institutions of general education, a sharp decrease of primary and basic schools took place. Hence, secondary schools have become a dominant type within this group (although their quantity dropped a bit as well in absolute terms). At the same time, relatively new types of secondary institutions such as gymnasiums and lyceums recorded growth during the last decade. They aim to provide more focused (either on sciences or humanities) and advanced educational services. They were found to be in high demand, and hence their quantity more than doubled over the last decade, having reached 251 or about 7% of the total number of secondary educational

institutions. As for the number of pupils studying in such institutions, their share has reached almost 14% in 2009 (against 5.8% in 2000).

Furthermore, a number of changes in the Belarusian educational system should be associated with demographic trends. Since the beginning of the 1990s, the birth rate has been dropping considerably. In 1990 it was 14.0‰ and its reduction continued for more than a decade, having reached its nadir in 2002 (8.9‰). Naturally, this had to influence the structure of the educational system considerably.

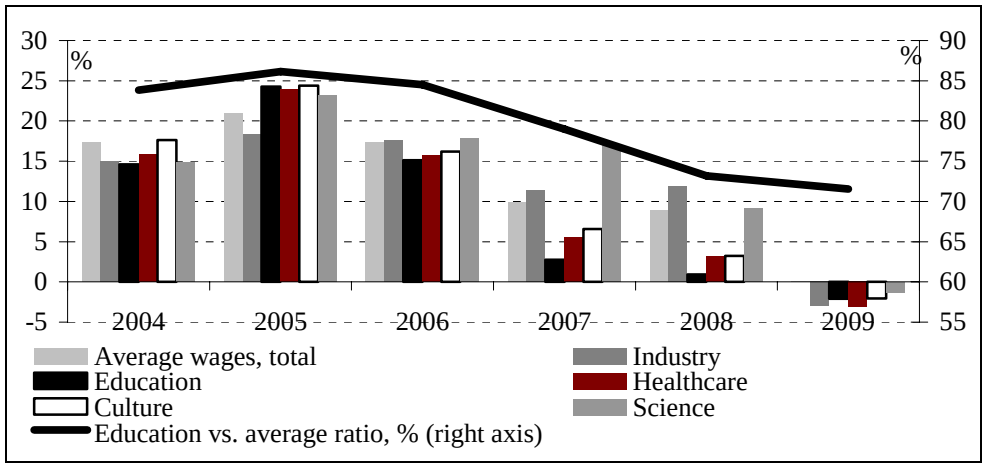
Pre-school education was affected by this tendency first. Between 1995 and 2005, enrollment rates in pre-school institutions grew by 22 percentage points, benefiting from a wide network of kindergartens and other pre-school institutions established during the baby boom in the 1980s. When the government started to adjust budget expenditures for pre-school institutions to current demographic trends, the number of preschools began to fall. At the same time, in the mid 2000s, the birth rate started growing again. Hence, in recent years the enrollment rate began to fall, especially in urban areas. This mismatch in the number of children under 6 and the number of pre-schools can, however, be explained not only by fiscal policy. It also became the consequence of domestic migration trends: pre-school institutions have been closed mainly in rural areas where the number of children under age 6 has become extremely small while the number of preschools is insufficient in the newly constructed areas of big cities. Hence, a substitution of those closed in rural areas with new ones in cities requires substantial expenditures on capital investments, which creates additional pressure on local budgets.

In the mid 1990s, demographic changes influenced general secondary education in a manner similar to pre-school education. However, there are a number of peculiarities. First, a decrease in the number of pupils led to a more sizeable reduction in the number of general secondary schools. Furthermore, this trend was mostly observed in rural areas (due to the same causality as in pre-schools), but the reduction in absolute terms affected urban areas as well. Second, despite a sharp reduction in the number of schools, the number of teachers was relatively constant and a downward trend has been seen only in recent years. Such a tendency may be interpreted by the disparities between the number of graduated teachers and demographic trends during the 90s and the beginning of the 2000s. On the one hand, it might be highlighted as a favorable tendency that is a consequence of the involvement of a wider range of narrow-specialists in secondary education and in the lowering workload for each teacher. The latter might be expected to lead to higher educational standards. On the other hand, the reluctance to fire redundant teachers may be the explanation, which seems to be more viable in the Belarusian case. However, the mismatch between the growth rate of the quantity of teachers and pupils resulted in a falling pupil-to-teacher ratio.

The distribution of the population and demographic trends in Belarus among the six districts is rather uniform, which means there are no substantial regional disparities within the educational system. Hence, from the point of view of a regional breakdown, the Belarusian educational system looks rather homogenous, especially in regard to primary and secondary education. Some peculiarities are associated with the capital city Minsk, the only municipal unity that had steady population growth during recent years. Furthermore, the disparities between Minsk and the other six regions are extremely evident at the level of higher education, while the majority of corresponding institutions prefer to be located in the capital.

Together with demographic challenges, the education sector faced challenges associated with the macro environment. The Belarusian economy as a whole enjoyed a favorable external environment since 2003 until the second half of 2008. As a result, real wages recorded rapid growth in 2004-2007. However, the growth rate of real wages in the education system was substantially lower rather than in other sectors (see Figure 3.1).

Figure 3.1. Growth rates of real wages by sectors and the ratio of average salary in education vs. average salary in the economy



Source: Own calculation based on Belstat data.

The growth rate of real wages was also much lower compared to other sectors financed from the budget. Furthermore, the gap between the average wage in education and the average wage in the economy was permanently increasing in recent years. This trend results from the mismatch between the growth rates of value added in education and its employment levels. The growth rate of value added of the sector was much lower rather than those of the economy and correspondingly

the share of education in GDP declined. However, the number of people employed in this sector was not affected by this tendency (see Table 3.2) and its share in total employment was less volatile.

Table 3.2. Output and employment in education

	2005	2006	2007	2008	2009
Real GDP growth rate, % yoy	9.4	10.0	8.6	10.2	0.2
Real gross value added in education growth rate, % yoy	4.7	1.7	-0.6	-0.5	0.3
The share of gross value added of education in GDP, %	5.0	4.7	4.3	3.8	3.8
Employment in the economy, thsd. people	4403	4457	4505	4594	4626
Employment in education, thsd. people	459	457	453	450	446
The share of employed in education in total employment, %	10.4	10.3	10.1	9.8	9.7

Source: Belstat.

Hence, we can treat a desire to maintain stable employment in spite of decreasing demand for educational services as the main reason for the growing salary gap. This peculiarity is of crucial importance for interpreting the trends in financing the educational system.

3.2. Policy reforms in the sector

According to the law 'On Education' that was passed in 1991, the Belarusian educational system is to be based on the following principles: compulsory basic secondary education and a gradual shift to a compulsory general secondary education, which is guaranteed to be free of charge; the availability of pre-school and vocational education that is free of charge; the availability of secondary specialized and higher education that is of free of charge (on a competitive basis).

The most serious drawbacks of the inherited Soviet system of secondary education were: an excessive focus on natural sciences (which was a consequence of the Soviet view that education should provide strictly unified fundamental knowledge), a rigid unification of curricula (even in the grades after basic secondary education) and the lack of preconditions for the development of individual creative potential, incompleteness of knowledge within the basic secondary education, incompatibility of the standards in general secondary education with the requirements of higher education, and an overloaded curriculum, which resulted in a poor

understanding of the material and also led to the deterioration of pupils' health. However, in the first part of the 1990s there were no considerable reforms in the main pillars of the system in comparison to the Soviet period. During this time, only sporadic adjustments in different dimensions took place.

The necessity of revising the educational standards to make them closer to the ones in developed countries became more evident in the second part of the 1990s. An important reform of the secondary general education was launched in 1998. It was assumed to be a systematic response to the main challenges faced by Belarusian education. The ultimate goal of the reform was formulated as providing conceptual improvements in the educational level of pupils and their preparedness for further stages of education. Furthermore, the reform should have pursued additional goals: satisfying the general demand for education while considering the individual requirements and abilities of the pupils, a greater focus on humanities, providing high-quality education without a negative impact on pupils' health, separating the functions within the secondary school system (primary school should prepare pupils for further studies, and basic secondary school should prepare pupils for vocational or secondary specialized education, upper secondary school should provide a basis for tertiary education and continuity in the education system). Technical steps within this reform assumed a shift from an eleven-year secondary education (4+5+2 years of primary, basic and upper secondary correspondingly) to a twelve-year education (4+6+2 years correspondingly), alongside with substantial changes at the third stage of secondary education. The two last years of secondary education assumed a partial specialization in core disciplines, and were considered the connecting link between secondary school and higher education. The latter meant institutional changes in secondary schools. The reform provided incentives for the establishment of new lyceums and gymnasiums with partial specializations, which were to be much closer to the standards of higher education. This reform was planned to have been completed by 2010 when, according to the plan, the first generation would be graduating from a twelve-year schooling.

Furthermore, the reform expanded on vocational, secondary specialized, and higher education. Vocational education was considered a blue collar sphere, while secondary specialized education was as being for 'white collar' specialties in industry, trade and communications. These stages of education were accessible after basic secondary school, as well as after general secondary school on a shorter basis. Moreover, graduation from these stages of education assumed the possibility of getting a higher education on adjacent specialties in a reduced period of time.

The concept of higher education reform was adopted in 1998. The authorities tried to mix the Soviet inheritance in the form of a Humboldt-type system of education with trends from the Bologna process. This concept assumed three stages of higher education: a bachelor's degree with general preparation for a specialization,

a specialist degree with more advanced training and knowledge on the specialty, and a Master's degree as the basis for scientific and research activity on a specialty. The master's degree was considered to be the basis for postgraduate education. Later, in the beginning of the 2000s, the discussion on joining the Bologna process intensified. A number of measures were undertaken. For instance, the biggest university – Belarusian State University –introduced an experiment on shifting to the Bologna-type two-staged higher education (with a bachelor's and master's degree) since 2000. It was planned that in 2003 other higher education institutions would adopt this practice and Belarus would join the Bologna process.

However, at that time, the reform's revision and the reconsideration of educational priorities began. It affected, in the first instance, the system of higher education: the gradual adjustment to the Bologna type two-staged system (bachelor-master) was abolished. Belarusian officials claimed that the country should rely on its own existing experience and needs, taking only the best practices from abroad. However, the government's intention to reduce educational expenses and stop the brain drain[14] might have been a more realistic reason for scaling down the reform.

Finally, the system of higher education was determined in the 'law on higher education' of 2007 and now it appears to be an eclectic mix between a Humboldt-style system and a Bologna one. There are two stages of higher education: the first one – the specialist – is considered to be a complete higher education that allows working on specialty, while the second one – master's – allows the student to acquire scientific knowledge and research skills on the chosen specialty and is considered to be preparation for postgraduate courses. As a result, despite similarities to the Bologna model, the nature and functions of the Belarusian system are substantially different. At the same time, such an approach allowed the government to reduce budget expenditures, although the share of budget financing for the Master's stage is relatively low. Nevertheless, an additional step towards the reduction of budget expenditures was made. In 2005, the Regulation of the Council of Ministers stipulated a plan for differentiating the length of higher education for various specialties. This plan assumed the period of higher education of the first stage should vary between 3 and 5 years (for the most important and difficult specialties, such as medical, it could be increased up to 6 years). During the last couple of years this trend affected mainly humanitarian, linguistic and economic specialties, where the period of education was reduced from five to four years. Furthermore, this practice is likely to be widened and for some specialties the period of study may be reduced down to three years, while a draft of the Educational Code secures such a norm.

[14] While a more similar structure of education with international standards led to a substantial outflow of students abroad for getting further educational degrees (MA, MBA, PhD).

Nevertheless, it should be mentioned that in July 2010, the Belarusian authorities decided to join the Bologna process. They set 2012 as the starting year. However, this process is likely to take a substantial period of time, because the Belarusian higher education system substantially differs from Bologna principles on a wide range of parameters.

In 2006, Belarus launched a government program for the development of vocational education. This program envisaged more integration with secondary specialized and higher education, and more flexibility in respect to labor market needs. Furthermore, in 2007, the 'law on vocational education' was passed, which determined the goals and role of this stage of the educational system. The demand for labor in working specialties is assessed by a special institution – the Republican Institute of Vocational Education (RIPO). Moreover, in order to facilitate the development of this stage of education, in 2008, the government took obligations to forecast the demand for working specialties and, based on this, issue a respective order to vocational schools. From a financial point of view, vocational schools benefited greatly from the government's Regulation, which secured the links between enterprises and vocational schools, including the possibilities of channeling funds from enterprises' innovation funds to support vocational schools' basic assets.

A reconsideration of priorities in education affected secondary education as well. In 2008, i.e. two years before the reform of the secondary education should have been accomplished, authorities claimed it failed. The main arguments for dropping the reform may be summarized as follows: a twelve-year general education is mostly oriented at higher education, while the market faces an insufficient supply of blue-collar labor; the increased period of general secondary school (12 years) did not provide substantial improvements in the quality of education and requires additional budget expenditures, which have been estimated by the authorities at 0.2% of GDP in 2007; the increased period of education means young people would be entering the labor force older. Moreover, in some cases it was argued that specific national standards of education prevent the outflow of the workforce from the country.

The majority of these arguments seemed to be at least disputable. Nevertheless, the decision to return to an eleven-year cycle was taken rather rapidly, as was its implementation. This plan supposed that a shift to an eleven-year cycle would happen in just two years and pupils in 8^{th} and 10^{th} grades would study a program of two grades in one year. The reconsideration of study plans included a reduction of teaching hours on foreign languages, humanities and sports. It resulted in a sharp increase of graduates in 2009, while in qualitative terms the consequences are hardly entirely assessable. Nevertheless, in the 2009/2010 school year the roll back from the reform was completed and the Belarusian secondary education is back on an eleven-year cycle.

3.3. Spending trends before and during the crisis

According to the 'law on education,' the corresponding GG expenditures should be planned at the level of 10% of GDP. However, (as shown in Table 2.4) actual expenditures were substantially lower during the last decade, while de-facto this 10% seems to be just an arbitrary number. Since the beginning of the 2000s, expenditures fluctuated around 6.5% of GDP, having reached a peak in 2002 at the level of 6.8% of GDP and a similar level of 6.6% of GDP in 2003. The highest level during these years was most likely connected with the progress in educational reform, especially in general secondary education, which absorbed the largest share of expenditures. Furthermore, 2003 became the year in which a list of educational social standards was adopted for both urban and rural areas, which required some additional investments in order to meet them (see Table 3.3).

Table 3.3. Social standards in education (as of 2010)

	Normative
The number of places in pre-school institutions with respect to the number of children of pre-school age, %	85
Net enrollment rate of 5-year old children in pre-school education, %	100
Unit cost in pre-school institutions, BYR thsd. per year (US dollars)*	1710 (570)
Unit cost in general secondary schools, BYR thsd. per year (US dollars)*	1140 (380)
Unit cost in general secondary schools for disabled people, BYR thsd. per year (US dollars)*	5170 (1725)
Unit cost in vocational schools, BYR thsd. per year (US dollars)*	2200 (735)
Unit cost in extra-curricular educational institutions, BYR thsd. per year (US dollars)*	190 (65)
Floor area in general secondary schools per 1 pupil, square meters	8
Floor area of sports facilities in general secondary schools per 1 pupil, square meters	0.5
The amount of pupils in general secondary schools per 1 computer	30

Note. The exchange rate 3000 BYR/USD as of 01.01.2011 was used to estimate the value in US dollars.
Source: The Regulation of the Council of Ministers No 724 on May 24, 2003

The absolute values of standards in terms of budget funds provisioned per capita are usually subject to revision once every couple of years. For instance, the current standards of budget provisioning were approved in 2006 and have nothing to do with the actual level of the corresponding budget expenditures. For instance, while the standard per unit expenditure cost for pre-school institutions is BYR 1.7 m, the actual level of expenditures varies between BYR 3.5 and 4.3 m, depending on the municipality. Hence, the actual role of these standards is misleading:

more often than not they do not set the required level of budget provisioning for the corresponding level of education; rather the standards reflect the actual minimum level of budget provisioning. However, we may interpret the role of standards as the indicative minimum norm of per capita financing in education, but which may diverge with actual trends.

The structure of financing of different levels of education demonstrates that pre-school, general secondary education, and vocational education are almost fully held in the economic jurisdiction of the local governments, while higher education and the greater share of expenditures in secondary specialized education is financed through the central budget (see Table 2.5). During the last five years there was a clear downward trend in budget expenditures for all stages of education in terms of their share in GDP (see Table 2.5). In the pre-crisis years, this may have been partially justified by demographic trends, lower demand for educational services in absolute terms, and lower gross value added of the education sector (see Table 3.2).

The most considerable reduction in general secondary education (by 0.59% of GDP) took place between 2006 and 2009 (of which 0.41% of GDP related to the years 2008-2009). This reflected not only demographic trends, but also the rollback of educational reform (see above). The second large change – by 0.14% of GDP in higher education – was also closely related to the reforms in this field of education; specifically it was a consequence of incentives to increase private financing in higher education. At the same time, the impact of the crisis may hardly be interpreted as the reason for spending cuts, at least before 2010. In 2009, when the crisis hit the Belarusian public finance system, there was already a clear downward trend in education expenditures on almost all levels.

However, technically expenditures on education in terms of their share in GDP may be misleading when trying to capture all the trends in educational finance, as budget expenditures are planned in the beginning of the year, while the external environment may contribute to a higher/lower GDP growth rate than expected. Such a situation took place in the pre-crises years, when favorable shocks determined higher GDP growth rates and higher inflation than expected by the Ministry of Finance, while budgeting was based on more conservative projections and its revisions during the year were relatively modest. Hence, spending trends are clearer if education expenditures are presented in terms of real growth rates.

Table 3.4 shows that growth rates of real educational expenditures were more modest than those of GDP. In 2008 and 2009, a reduction of financing in real terms occurred. The direct impact of the crisis through budget planning, i.e. cutting expenditures in response to a deteriorated environment, was the dominant factor in respect to applied engineering and research, out-of-school education and

'others' item. Corresponding expenditures were reduced due to challenges related to the crisis. As for other sub-branches, the crisis affected them in a slightly different manner, i.e. through the mechanism of wage restrictions that was agreed upon by the Belarusian government with the IMF. Wages are the dominant expenditure item in Belarusian education, so a frozen wage rate for all employees in the budget sector became an automatic mechanism of expenditure cuts through all the functional directions of finance.

Table 3.4. Spending trends in education

	Real growth rate, % yoy				**Share in total expenditure, %**			
	2006	**2007**	**2008**	**2009**	**2006**	**2007**	**2008**	**2009**
Education	5.8	2.3	-0.9	-3.0	100.0	100.0	100.0	100.0
Preschool education	6.0	6.4	5.6	2.0	16.4	17.1	18.2	19.2
General secondary education	-	1.8	-2.1	-3.9	48.6	48.3	47.7	47.3
Vocational education and training	-	4.4	-1.2	-0.2	6.6	6.7	6.7	6.9
Secondary specialized education	-	-1.8	-8.0	-3.7	6.6	6.3	5.8	5.8
Higher and post-graduate education	-	-3.2	2.5	-1.4	12.7	12.0	12.5	12.7
Career enhancement and continuing education	-	2.2	-4.1	-3.7	1.2	1.2	1.2	1.2
Out-of-school education	-	6.3	-1.9	-7.0	4.6	4.8	4.7	4.6
Applied engineering and research	-	2.3	-23.0	-32.1	0.3	0.3	0.2	0.1
Others	-	10.8	-12.9	-21.4	3.0	3.3	2.9	2.3

Note. The indicators are deflated by the GDP deflator.
Source: Own calculations based on the data of the Ministry of Finance.

As far as the main stages of education are concerned, the impact of the crisis was accompanied by other government measures. We can treat expenditures on pre-school education as a 'prominent leader' both in the pre-crisis and crisis periods. In 2006-2008, the growth rate in expenditures on this stage of education in real terms was much higher than on other stages of education. This is due to the authorities' intention to fulfill a social standard of the amount of places in pre-school institutions (85% in respect to children of the pre-school age), while its shortfall is peculiar to big cities, especially Minsk. Further, there is still a sizeable gap between enrollment in pre-primary education in Belarus and enrollment in developed countries, and the authorities aim to reduce this gap.

General secondary education and secondary specialized education should be emphasized as the prominent 'losers'. A low growth rate of these expenditures in 'fat years' and the cuts in 2008 and 2009 are consequences of both policy reforms and demographic trends.

The trends in educational spending controlled for the impact of demographic factors may be estimated using the dynamics of expenditures per capita in real terms (see Table 3.5).

Table 3.5. Real budget expenditures per capita, index (2006=100)

	2006	**2007**	**2008**	**2009**
Preschool education	100.0	106.5	111.7	112.4
General secondary education	100.0	105.8	108.5	112.2
Vocational education and training	100.0	113.7	119.3	111.5
Secondary specialized education	100.0	96.6	87.6	79.7
Higher and post-graduate education	100.0	92.8	93.6	90.1

Source: Own calculations based on the data of the Ministry of Finance.

As we can see, a large part of cuts in general secondary education may be justified by the demographic situation, while both in the pre-crisis period and later on in 2009 real per capita expenditures in this sub-branch grew. A similar situation took place in pre-school education as well.

As for vocational education, the pre-crisis and crisis periods assume different dynamics. Before the crisis, the government increased expenditures in real terms, which complied with its emphasis on working specialties. However, the crisis forced the government to reduce per capita financing of vocational schools. This trend is two-fold. First, from the functional view, in 2009 there was a need to increase expenditures on vocational schools against a substantial increase in the number of students at these schools as a consequence of withdrawal from the secondary school reform. Unfortunately, the government did not respond to this challenge by increasing per capita financing in this sub-sector. Second, from the point of view of the economic classification of expenditures, we may argue that in vocational education, a considerable part of expenditures is associated with capital investments for basic assets of vocational schools, while the government in 2009 tried mainly to stimulate productive and housing investments; hence, the lack of funds for investments in non-market services took place.

Furthermore, there is a clear downward trend in real per capita financing for secondary specialized and higher education. As a result, the higher share of students in these institutions study using their own funds or funds of enterprises, while the share of those who study using government funding is decreasing. For instance, in 2002 the share of students in higher education institutions, who were

studying using government funds was 52.6% (43.8% among new entrants), in 2005 it dropped down to 43.7% (37%), and in 2010 down to 34.6% (33.3%) correspondingly. Thus, we may argue that during the crisis, the government kept on its policy directed at more commercialization in secondary specialized and higher education, which reduced pressure on public expenditure.

Within the economic classification of expenditures, the trends in educational spending differ between the pre-crisis period and during it. In the mid 2000-s, the main tendency in the structure of expenditures was the increasing share of salaries and payroll taxes. Before 2007, the government tried to close the gap between the average salary in the economy and the one in education. This was justified by the necessity of providing a competitive level of salaries for teaching staff. In local budgets that finance pre-school and general secondary education, the share of salaries exceeded 50%, while together with payroll taxes it became close to 70%. The other side of the coin was the lack of funds for capital investments so badly needed in education institutions. Thus, the deterioration of technical facilities and material resources in education was considered a dangerous tendency during that period (Sorokina et al. (2010)).

However, in the last pre-crisis years, there were changes in the structure of expenditures. Since 2007, following the general trend of government policy which assumed more focus on capital investments, the biggest contribution to the increase in educational financing was associated with this kind of spending. Hence, its share started growing, while the share of expenditures on salaries and related expenses tended to fall (see Table 3.6)[15].

Table 3.6. The structure of educational expenditures in local budgets

	Vitebsk oblast			**Hrodno oblast**		
	2007	**2008**	**2009**	**2007**	**2008**	**2009**
Education, total	100	100	100	100	100	100
Wages	50.0	44.8	48.1	45.4	44.9	47.7
Taxes on wages	16.9	15.1	16.1	15.5	15.1	16.2
Procurement of goods	6.8	7.7	7.7	6.9	8.6	6.9
Subsidies and current transfers	1.4	1.1	1.4	1.4	1.2	1.2
Capital expenditures	5.9	11.5	5.7	11.7	10.0	8.9
Other expenditures (including payments for utilities)	19.0	19.8	21.0	19.1	20.2	19.0

Note: The indicators are deflated by the GDP deflator.
Source: Own calculations based on data from the Ministry of Finance

[15] We use the Vitebsk and Hrodno oblast budgets as representative regions because a detailed structure of expenditures in these oblasts available. While budget policy is rather homogenous in Belarusian regions, the corresponding trends may be projected for other local budgets.

Thus, we can summarize the main trends before the crisis as follows:

- The government tried to limit educational expenditures, justifying this with demographic trends and a lower demand for educational services. As a result, educational expenditures dropped from 6.8% of GDP down to 5.2% of GDP in 2008.
- The main contribution to this reduction was provided by restricting expenditures on general secondary education, which was possible due to a reversal of educational reform and a return to an eleven-year school cycle. However, in per capita terms, expenditures in general secondary education continued to grow.
- Pre-school education was the sub-sector where the cuts in terms of GDP were minimal while expenditures grew in real terms and in per capita terms.
- In vocational education the expenditures in real and per capita terms recorded substantial growth before the crisis, which reflected a policy of stimulation of working specialties.
- Secondary specialized education was the sub-sector where a clear trend of expenditure cuts was observed (in terms of share in GDP, in real and per capita terms). This tendency was associated with the intention of the government to increase the share of private resources (own funds of students and of enterprises) in this education sphere.
- In higher education, spending trends in real terms were not stable. However, there has been a long-term tendency of decreasing per capita expenditures in this subsector. This may be interpreted as the intention to develop the higher education system using more private resources.
- The expenditures on education show a trade-off between salaries and capital expenditures. Restricting expenditures in per capita terms means that additional finance can hardly satisfy both the current and capital needs of educational institutions. Before 2007, the financing of wages was a priority while in 2007 and 2008, more finances were directed at capital expenditures. The latter determined the increased wage gap between education and the economy as a whole.

During the crisis, the trends in financing education changed. The main adjustments may be summarized as follows:

- The most severe cuts took place in additional spheres of education (like out-of-school education, research etc.).

- The government cut per capita expenditures in vocational, secondary specialized and higher education.
- Demographic trends and previous reforms allowed for the reduction of financing during the crisis in terms of its share in GDP and in absolute values in real terms.
- Frozen wages in 2009 (for the whole budget sector) became the main instrument of cutting expenditures in real terms.
- Cuts in capital expenditures in education (both in real and nominal terms) became an additional reaction of the government to the deteriorated external environment.

3.4. Efficiency of spending and mid-term perspective of the Belarusian educational system

In respect to education, the assessment of spending efficiency is associated with the impact of changes in government spending on the quality of education, as understood in a broad context (attainment, enrolments, etc).

In the last decade, the Ministry of Education began to pay more attention to the quality of education at all levels. First, it introduced tougher inspection procedures in the educational sphere. The inspection is provided by the Ministry of Education based on the National Educational Standards. All educational establishments, regardless of their ownership, every five years are required to undergo an accreditation procedure which checks whether the quality and contents of education and graduate training meet the requirements of established educational standards. This process has led to a gradual increase of state regulation and controls over the institutions of higher education, including the 'squeezing-out' of private educational institutions (Chubrik, et al. (2009)).

Second, since 2000, besides entry control, the Ministry of Education began to introduce a system of quality management in the sector. The first step here was the introduction of tests as the core method of knowledge assessment and controls on all levels of education. One of the important developments was the introduction of unified tests (the so called system of centralized testing, or CT) for entry to an institution of higher education. The official justification of this measure pointed to the elimination of the 'subjectivity factor' in the process of knowledge controls. However, the elaboration of the proper standards for CT is still in progress, while from year to year the structure and the level of complexity of the questionnaire

vary substantially. As a result, a comparison of the dynamics of results from the CT does not obviously reflect changes in the quality of general education.

Since 2008, the Ministry of Education paid more attention to the system of quality management in higher education institutions. The system assumes the adoption of certain standards within the education process, and applies techniques of teaching and assessment of students' knowledge closer to those used internationally. Furthermore, it assumes the implementation of the internal and external auditing of the education process. At the level of institutions, the implementation of such an approach began in 2009-2010 and is still in progress.

However, choosing relevant indicators for assessing education quality might become a problem. As the benchmark we may refer those used by the European Commission (European Commission (2000)). In this study, 4 groups of indicators that include 16 indicators are presented. These groups are: attainment (7 indicators), success and transition (3 indicators), monitoring of education (2 indicators), resources and structures (4 indicators).

The first group – attainment – considers the attainment of pupils and students of different ages in a number of disciplines. As a rule, the data to be used here is the output of international education comparison programs such as PIRLS, TIMMS, PISA, etc. Hence, by definition these indicators are comparable among countries and worthwhile for the inferences on the quality of education. In a sense, the indicators of this group may be treated as direct measures of the quality and effectiveness of educational process.

The second group – success and transition – includes drop-out rates, completion of upper secondary education, and participation in tertiary education. Different proxies may be used for each indicator depending on the available statistical joint breakdown on education and age. For instance, the European Commission (2000) considers the percentage of the population of 18 to 24 year olds who have achieved ISCED-2 level or less and not attending education or training as the drop-out rate. The completion of upper secondary education is considered to be an important indicator, as upper secondary education allows access to the opportunities of higher education. With respect to this indicator, the European Commission (2000) used the percentage of 22 year-olds who have successfully completed at least ISCED-3. Finally, participation in tertiary education is captured through the percentage of students in the age groups of 18-24 and 25-29.

The third group – monitoring of education – includes such indicators as evaluation, steering of school education, and parent participation. This group of indicators is invoked to demonstrate if the educational system is flexible, and sensitive enough to the challenges from the external environment. However, quantitative

formalization of these indicators is hardly possible, and so is the comparability of the indicators among countries.

The fourth group – resources and structures – mirrors inputs for education in a sense. This group includes a number of indicators – education and training by teachers, participation in pre-primary education, number of students per computer, educational expenditure per student. Again, different proxies may be used for measuring corresponding indicators.

In the case of Belarus, we face with a problem with having relevant data for the most important group of indicators in our opinion – indicators on attainment. This stems from Belarus' absence in international programs for student assessments, such as PISA, PIRLS, or TIMMS.

The demand on the labor market for fresh graduates may be a potentially good proxy for vocational, secondary specialized, and tertiary education. Nevertheless, in Belarus such an approach is constantly distorted by the system of centralized assignment of students who studied at budget cost. This system was inherited from Soviet times and covers almost all the specialties. However, even disregarding this fact, there are some obstacles in light of the available statistics. For this purpose only a proxy such as unemployment by age groups and education levels may be used. The latter does not fully capture the targeted information, while there is no distinction between 'fresh' and 'non-fresh' graduates within the same age group.

Hence, we may base our conclusions only on the available proxies for indicators in groups from 2 to 4 according to the European Commission (2000). However, it should be emphasized that conclusions on the quality of education without attainment indicators do not seem to be fully reliable and meaningful. From this view, involvement in international testing systems for students and establishing sound national testing systems for different level seems to be of great importance.

Within the group of 'success and transition' indicators, we may use appropriate proxies from population censuses in 1999 and 2009. In respect to the drop-out rate, we may treat a percentage of the population of 20-24 year olds who have a basic education (ICSED-2) or lower. This ratio fell from 8.0% in 1999 down to 4.4% in 2009, which demonstrates rather good progress during the decade. As for the completion of upper secondary education, in a given breakdown of age groups we may use only the group of 20-24 year olds, but aim for those who have an upper secondary education (ICSED-3) or higher. Due to this peculiarity of age group breakdown, we get the same information as from the drop-out rates[16]. We may obtain additional information from participation in tertiary, treating this as a percentage of those with higher education (ISCED-5) in the age group of 25-29. This

[16] In other words this proxy is just 100 minus the drop-out rate.

ratio increased from 18.3% in 1999 up to 31.1% in 2009. Thus, from the view of these criterions we may claim definite progress in Belarusian education during the last decade. Nevertheless, due to different proxies used in other countries, it is still difficult to interpret these results in an international context.

As far as the indicators of 'monitoring of education' are concerned, we may state that there is at least room for progress in respect to both sound evaluation systems at the school level or local level, and the practice of parent participation in school bodies and in the preparation of school development plans. This brings to light another policy recommendation - to establish and widen practices that propagate greater effectiveness in education.

A couple of indicators may be analyzed within the group of 'resources and structures'. As of the 2009/2010 academic year, teachers in general secondary education have higher (90.7% vs. 87% and 82.5% in 2004/05 and 1999/2000 correspondingly) or secondary specialized (8.9%) education, and 97–99% of those who teach main specialties, i.e. Belarusian and Russian languages, physics, mathematics, chemistry, biology, information technology, geography have a higher education. Furthermore, we must acknowledge the major progress achieved in the coverage of children by pre-school education during the last decade. This trend is captured both in national statistics and assessments of the gross enrolment ratio and the net enrolment rate by UNESCO (see Table 3.1). The latter means that children are better prepared for school education, social integration etc. Nevertheless, during recent years an alarming tendency of decreasing values of corresponding indictors may be emphasized[17]. The latter may be interpreted as a signal of the decreasing efficiency of spending on pre-primary education during recent years, despite an increase in real per capita expenditure on pre-primary education during recent years (see Table 3.5).

While there is not enough evidence on standard indicators on the quality of education, we can widen our picture of education in Belarus through a number of supportive indicators, like average class size, pupil-to-teacher ratio, participation in Olympiads, etc.

Average class sizes are 15.2 for primary school, and 16.8 and 17.7 pupils for basic and upper secondary, figures which are comparable to the EU average. Urban class size is 20.9, while in rural areas it is half of this due to a decline in the school-age population (Chubrik, et al. (2009)). The dynamics of the last decade show a clear trend towards a decreasing average number of pupils in a class. Furthermore, there is a stable tendency of a decreasing pupil-to-teacher ratio (see Ta-

[17] According to UNESCO Institute for Statistics, the gross enrolment ratio in pre-primary education in 2010 fell to 97 (vs.102 in 2007 and 98 in 2009), and net enrolment rate fell to 87 (vs. 90 in 2007 and 87 in 2009).

ble 3.1), which follows the depopulation trend. In 2009, it dropped down to 7.4, which is substantially lower than even in developed countries. The interpretation of these dynamics may be twofold. On the one hand, it may witness about more preconditions for effective study. On the other hand, it may indicate the decreasing effectiveness of using available budget funds. However, it should be emphasized that the importance of this indicator for the quality of education is not so high. For instance, OECD findings indicate that differences in pupil-to-teacher ratios ranging from 10 to 25 are associated with relatively small effects on learning outcomes, and it is only when ratios rise above 25 that a decline in performance is detected (OECD (2001)).

Alternatively, we can use the results of participation in international Olympiads as an indicator of the quality of the general secondary education. The available statistics from 2006–2007 year report that 28 Belarusian students won 3 gold, 11 silver and 14 bronze medals in 6 main subjects, including Mathematics, Physics, Chemistry, Biology (Chubrik, et al. (2009)). This data is evidence of certain achievements of the Belarusian secondary education, especially in natural sciences. Nevertheless, these indicators are not perfect and do not capture all the trends in the quality of Belarusian educational system.

Overall, we may argue that the trends in the quality of education are a bit ambiguous. On the one hand, we may state a marked progress in 'input' parameters, such as education of teachers and enrolment in pre-primary education. While this corresponds to increased per capita expenditures on several levels of education, we may state that medium-term changes in spending have been efficient. Furthermore, other indicators dealing with the quality of education and coverage of the population by education like drop-out rates, completion of upper secondary education, and participation in tertiary education have also exhibited a certain level of success in the medium-term. However, during recent years there have been signals of definite threats, e.g. decreasing pre-primary enrolment rates in the background of increasing per capita income in real terms. Finally, there is still not enough evidence on attainment in Belarusian education. In our opinion these indicators are crucial for the overall assessment of the efficiency in spending trends. Thus, without them we may argue about certain signals in education, but cannot argue about the whole picture in spending efficiency. At the same time, the latter may be interpreted as a acute necessity for establishing a national evaluation system and applying to international knowledge evaluation projects.

Furthermore, a threat to current policies in the medium-term perspective may be emphasized. For instance, there is a threat that policy measures such as the reduction in the length of secondary education and the greater dependence of secondary specialized and higher education institutions on private resources may result in the deterioration of human capital and a loss in the competitiveness of the

Belarusian labor force, which may dampen the perspectives of long-term growth. For instance, the OECD shows that an additional year of education may increase GDP from 3 to 6% (OECD (2007)).

The desire to improve the fiscal situation by cuts in education financing can also be responsible for possible negative outcomes. However, the government seems to be better able to recognize medium-term threats recently. In 2010, it called for the rapid adjustment to global trends in education and a readiness to join the Bologna process. Moreover, the government seems to be reconsidering the share of education in public finance. Although the fiscal deficit in 2011 is going to reach high levels, the budget of the central government for 2011 year includes a substantial increase of expenditures on education. Furthermore, local governments that finance a much greater share of educational expenditures have declared they will provide additional funds for education in 2011 in order to satisfy its major needs.

4. Healthcare

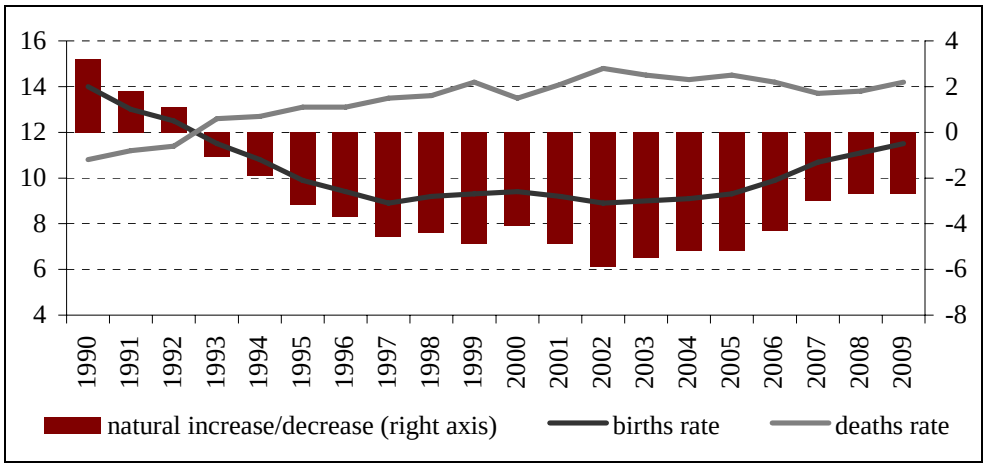
4.1. Sector indicators: current trends

The Belarusian health system guarantees its citizens universal access to health care services which are free of charge according to the Constitution. Its key objectives are postulated as protecting the health of the economically active population and addressing demographic concerns about low birth rates, high mortality rates and the shrinking Belarusian population. So, demographic parameters are viewed as key indicators for the health system. They set main targets for its further development and give some understanding about the efficiency of the existing healthcare system. Recently these parameters have often been mentioned by officials as evidence of improvements in the health care system. The reason for this is that there was a gradual slowdown in the negative rate of population growth in Belarus in the second half of the 2000s (see Figure 4.1). The slowdown was caused by an increase in births rates, which is officially attributed to the success of the demographic and healthcare programs. However, in practice their contribution was quite marginal, as the main growth factor for birthrates was an increase in the number of women in fertile age (baby-boomers of early 1980-s): The number of women aged 15–49 grew from 2.59 m in 1995 to 2.68 in 2005. At the same time, the death rates didn't show any improvement. They stabilized at the level of 14 deaths per one thousand people after rapid growth in the previous decade, which can not be considered a success of the Belarusian healthcare system.

The consistent trend of negative population growth, which has been observed in Belarus since 1993, led to the fall in the population. The population of Belarus was 9480.2 thsd people at the end of 2009, which is more than 750 thsd less than in 1993, when the Belarusian population was the highest, at 10243.5 people (see Figure 4.2). Besides, high death rates were interrelated with the fall in life expectancy at birth, which was especially sharp in the 1990s. By 2009, total life expectancy jumped back up to the level of 1990, which can be explained by macroeconomic stability and healthcare system provisions. However, this improvement refers mostly to the female population, whose life expectancy exceeded 1990 levels. Male life expectancy is still considerably lower than life expectancy in the early 1990s, and is growing much slower than female life expectancy. Hence, the difference between life expectancies for men and women is very high (11.7 years). This is explained, among others, by the high alcoholism rate among males. One of

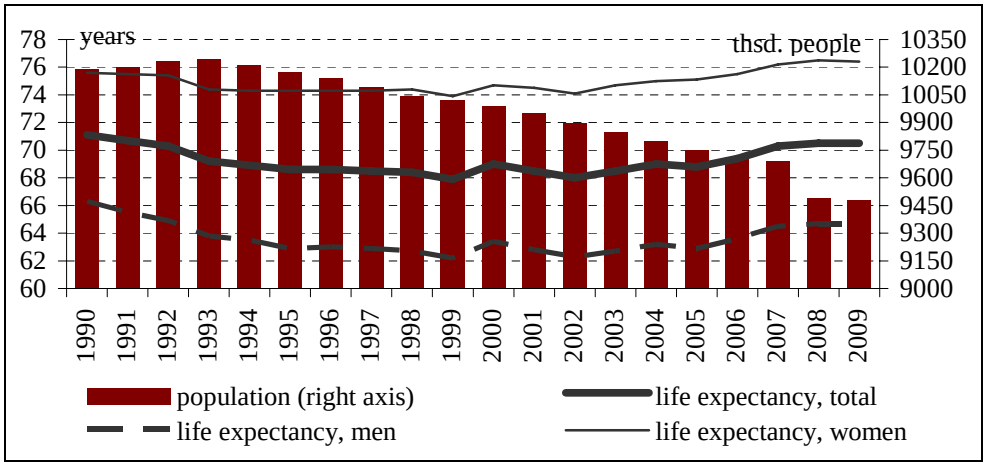
the consequences of widespread alcohol abuse is a high mortality rate from alcohol poisoning. This is one of the leading causes of death among the working age population after suicides, neoplasms, and cardiovascular and digestive diseases.

Fugure 4.1. Birth and death rates in Belarus, per 1000



Source: Belstat.

Figure 4.2. Population of Belarus and its life expectancy



Source: Belstat.

Table 4.1 reveals that most of the fluctuations of the death rate were caused by changes in the mortality due to cardiovascular diseases, as these kinds of diseases are responsible for more than half of all deaths in Belarus. Its rate fell in 2007, but began to grow again in 2008. There are only two steady developments among other diseases: a growth in the deaths caused by digestive diseases and a fall in

deaths due to diseases of the respiratory system. The first trend may reflect the worse state of nutrition of the Belarusian population, and the second shows the progress achieved in restraining the spread of tuberculosis. Besides, there was an increase in the number of deaths related to abnormal clinical and laboratory findings. This is partly overstated as medical institutions try to report it in order to lower statistics of lethal cases caused by neoplasms or cardiovascular diseases.

Table 4.1. Mortality rates, per 1000

	2002	**2005**	**2007**	**2008**	**2009**	**2002**	**2005**	**2007**	**2008**	**2009**
	total population					**in the working age**				
Certain infections	0.13	0.16	0.13	0.12	0.12	0.09	0.12	0.10	0.10	0.10
Neoplasms	1.95	1.90	1.88	1.94	1.92	0.50	0.51	0.51	0.55	0.53
Endocrine, nutritional, metabolic diseases	0.08	0.06	0.05	0.04	0.04	0.02	0.01	0.02	0.01	0.01
Mental disorders	0.08	0.08	0.07	0.08	0.10	0.05	0.05	0.04	0.04	0.04
Diseases of the nervous system	0.10	0.08	0.10	0.10	0.12	0.05	0.04	0.05	0.05	0.05
Cardiovascular diseases	8.00	8.13	7.26	7.44	7.70	1.05	1.10	1.01	1.05	1.06
incl. acute myocardial infarction	*0.19*	*0.18*	*0.17*	*0.18*	*0.18*	*0.04*	*0.04*	*0.04*	*0.03*	*0.04*
Respiratory diseases	0.64	0.54	0.48	0.42	0.43	0.13	0.13	0.11	0.11	0.15
Digestive diseases	0.40	0.44	0.47	0.48	0.53	0.19	0.21	0.22	0.22	0.24
Genitourinary diseases	0.12	0.10	0.11	0.10	0.10	0.03	0.03	0.02	0.02	0.02
Abnormal clinical and laboratory findings	1.49	1.23	1.61	1.77	1.62	0.10	0.11	0.10	0.10	0.08
External causes	1.73	1.73	1.48	1.51	1.47	1.24	1.29	1.07	1.09	1.05
traffic accidents	*0.22*	*0.21*	*0.20*	*0.21*	*0.17*	*0.17*	*0.17*	*0.15*	*0.16*	*0.13*
accidental poisoning of alcohol	*0.27*	*0.34*	*0.26*	*0.27*	*0.26*	*0.21*	*0.27*	*0.20*	*0.21*	*0.20*
Suicides	*0.33*	*0.31*	*0.27*	*0.28*	*0.29*	*0.25*	*0.24*	*0.21*	*0.21*	*0.22*
Total	**14.82**	**14.55**	**13.73**	**14.10**	**14.25**	**3.49**	**3.61**	**3.28**	**3.37**	**3.35**

Source: Belstat.

In contrast to mortality rates, there was clearly a growing trend in morbidity rates (see Table 4.2). Several groups of diseases contributed to this growth, but most of the growth came from diseases of the eye and adnexa, cardiovascular, and respiratory diseases. As far as cardiovascular diseases are concerned, they largely follow the mortality trends of these kinds of diseases. In contrast, the number of cases of respiratory diseases is growing, while the mortality rate is falling. This may indicate that the treatment of these diseases is improving. However the growing number of patients means that measures of prevention of respiratory diseases are not effective enough. Besides there was a slight growth of certain diseases, including diseases of the ear and mastoid process, diseases of the skin and subcu-

taneous tissue, and diseases of the musculoskeletal system and connective tissue, indicating that the general state of health of the population of Belarus is deteriorating. Moreover, there was a growth in mental disorders, which is in line with the high number of suicides in Belarus, and stresses the rather poor mental health of Belarusians. Only the spread of diseases of the digestive organs has been falling, which contradicts the growing mortality from these diseases. This is either due to the increasing complication of the cases or the lag between the registration of the illness and the lethal outcome caused by it.

Table 4.2. Morbidity rates, per 1000

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Number of cases, of which:	768.7	781.1	791.4	831.0	827.2	829.4	838.8	917.5
Certain infectious and parasitic diseases	36.9	36.0	36.0	36.6	36.7	36.4	35.0	34.2
Neoplasms	8.2	8.6	9.7	9.9	9.9	10.1	10.3	10.6
Diseases of blood, blood forming organs and certain disorders involving immune mechanism	2.3	2.5	2.7	2.5	2.6	2.6	2.5	2.5
Endocrine, nutritional and metabolic diseases	7.0	7.0	7.1	7.2	6.9	6.7	8.1	7.3
Mental disorders	12.1	13.6	14.9	15.6	16.4	16.6	16.6	16.5
Diseases of the nervous system	8.3	7.0	7.4	7.4	7.1	6.8	6.5	6.3
Diseases of the eye and adnexa	25.8	27.6	28.4	29.1	28.3	28.9	30.7	30.4
Diseases of the ear and mastoid process	19.9	20.5	23.0	23.1	23.4	23.6	22.6	23.5
Cardiovascular diseases	21.4	22.8	25.3	26.2	26.2	27.7	32.3	29.1
Respiratory diseases	391.1	390.8	385.4	419.2	414.7	418.9	421.6	509.6
Digestive diseases	30.3	30.1	30.2	29.4	27.5	26.0	28.0	24.1
Diseases of the skin and subcutaneous tissue	41.4	42.7	42.5	45.7	45.2	45.0	43.9	44.4
Diseases of the musculoskeletal system and connective tissue	39.0	40.9	44.0	43.8	45.5	45.2	46.1	43.7
Genitourinary diseases	29.4	30.8	31.5	31.9	32.3	31.2	32.5	31.7
Congenital anomalies, deformations and chromosomal abnormalities	1.0	1.2	1.1	1.1	1.1	1.2	1.2	1.3
Injuries, poisonings and other conditions resulting from external causes	77.5	80.5	83.0	82.7	83.8	82.8	81.3	82.1

Source: Belstat.

There was a stabilization of death rates within the last decade, following their rapid growth in the 1990s. At the same time the number of cases of different diseases continued to grow. On the one hand, it is possible to conclude that the

healthcare system managed to cope with them with increasing effectiveness, resulting in the increase in life expectancy at birth. On the other hand there is the problem of non-communicable diseases, which actually caused a growth in the total morbidity rate. Hence, the existing healthcare system does not prevent the development of these illnesses, concentrating rather on treatment and restraining the spread of communicable diseases.

The healthcare system infrastructure has experienced some changes in recent years. There was a gradual decrease in the number of hospitals and hospital beds (see Table 4.3). Their increase in 2005–2006 can be explained by a change in the functioning of rural hospitals, some of which were reestablished to provide long-term nursing services. The change in methodology also explains the fall of 2009. However, the general trend of reducing the hospital beds ratio per capita is clearly observed and should be considered positive. The number of beds was artificially high, as in the Soviet times the financing of hospital organizations was determined by this indicator. After this practice was abolished in 2002, the number of beds has been significantly falling, still being over the rational level. There was also a decrease in the average length of stay at the hospital, which also corresponds to international practices. However, it should be noted that this indicator is so high due to the praxis of providing long-term nursing services for elderly people within the hospitals in rural areas during winter time.

Table 4.3. Main indicators of the health system infrastructure

	1990	**1995**	**2000**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Physicians of all specialties, persons	39597	42713	45817	45010	45276	45649	46359	46965	48124	49380
Paramedical personnel, thsd.persons	119.9	117.6	122.6	117.0	117.3	118.5	118.3	118.2	120.6	122.2
Number of hospital organizations	874	865	830	729	704	711	725	792	773	661*
Hospital beds	132.6	125.1	126.3	113.7	107.4	111.6	112.0	112.4	111.3	110.7
Average length of stay at hospital, days	15.3	--	13.9	12.7	12.2	11.8	11.7	11.7	11.6	11.4
Bed occupancy rate, %	81.3	--	90.3	84.3	85.0	83.6	84.0	85.3	85.7	86.4
Number of outpatient and polyclinic organizations	1468	1622	1843	1918	1983	2005	2022	2027	2208	2205
Outpatient and polyclinic organizations, visits per shift	185.6	212.3	231.7	238.2	242.6	247.1	250.1	252.3	--	--

* Since 2009 the statistical recording procedure for hospital organizations has changed.
Source: Belstat.

In contrast, the number of outpatient and polyclinic organizations was growing as the official policy of shifting public support from the secondary to the primary sector of the healthcare system was adopted. It was accompanied by a growing number of visits by the patients to these organizations, which actually exceeded the rates of infrastructure improvement.

Physicians and paramedical personnel were growing both in numbers and per capita ratios. The growth occurred in almost every type of physician (see Table 4.4), and their number should have been sufficient to satisfy the needs of the population. In reality, there is a big difference between these numbers and the physicians who are actually practicing, and there is a problem of their distribution between primary and secondary health care, as well as between rural and urban health care organizations. There is a shortage of physicians in primary care, while secondary care enjoys a satisfactory level of health personnel, as remuneration in the secondary sector tends to be higher. A lack of physicians is typical for rural areas, and in the Gomel and Mogilev regions in particular, as they suffered the most from the Chernobyl explosion. Primary care doctors (including district internists, district pediatricians and general practitioners) form less than 15% of all active physicians in the country[18]. Therefore, although the overall number of physicians per capita has been rising, fewer of them are working in primary care.

Besides, Table 4.4 highlights the existing deep fragmentation of specialist care, leading to high numbers of narrow specialists, whose numbers are constantly increasing. The reason is that there is a dual level of narrow specialists in primary and secondary healthcare, who are further split into adult and pediatric narrow specialists. The difference between primary and secondary narrow specialists starts from training procedure, as those working in polyclinics require just a 4 month training course and those in hospitals require two years of clinical training. It boils down to differences between them in qualifications, use of equipment, and remuneration.

Table 4.4. Health system personnel, per 10000

	1990	**1995**	**2000**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Total, of which:	**38.9**	**42.0**	**45.9**	**46.2**	**46.8**	**47.7**	**48.5**	**49.8**	**51.1**
Therapists	10.5	11.3	12.2	11.9	12.0	12.5	12.4	12.3	12.7
Surgeons	4.7	5.4	6.2	6.4	6.5	6.6	6.7	6.9	7.2
Obstetricians-gynecologists*	4.2	4.5	5.0	5.1	5.0	4.9	4.9	5.0	5.1
Paediatricians**	21.7	20.7	23.3	24.9	25.6	26.5	27.4	--	--
Ophthalmologists	0.8	0.8	0.9	1.0	1.0	1.0	1.0	1.1	1.1

[18] 12% in 2006 according to Ministry of Health of Belarus (see Richardson, Anker (2008)).

	1990	1995	2000	2004	2005	2006	2007	2008	2009
Otorhinolaryngologists	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9
Neurologists	1.1	1.3	1.4	1.5	1.5	1.5	1.5	1.6	1.6
Psychiatrists	1.2	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.6
Physiotherapist	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Dermatovenerologists	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.7
Roentgenologists and radiologists	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.0	1.1
Exercise therapy and sports	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.3
Sanitary and anti-epidemic group	2.0	2.0	1.9	1.9	2.0	2.0	2.0	1.9	2.1
Dentists	3.2	3.6	4.5	4.5	4.7	4.8	4.9	5.3	5.4

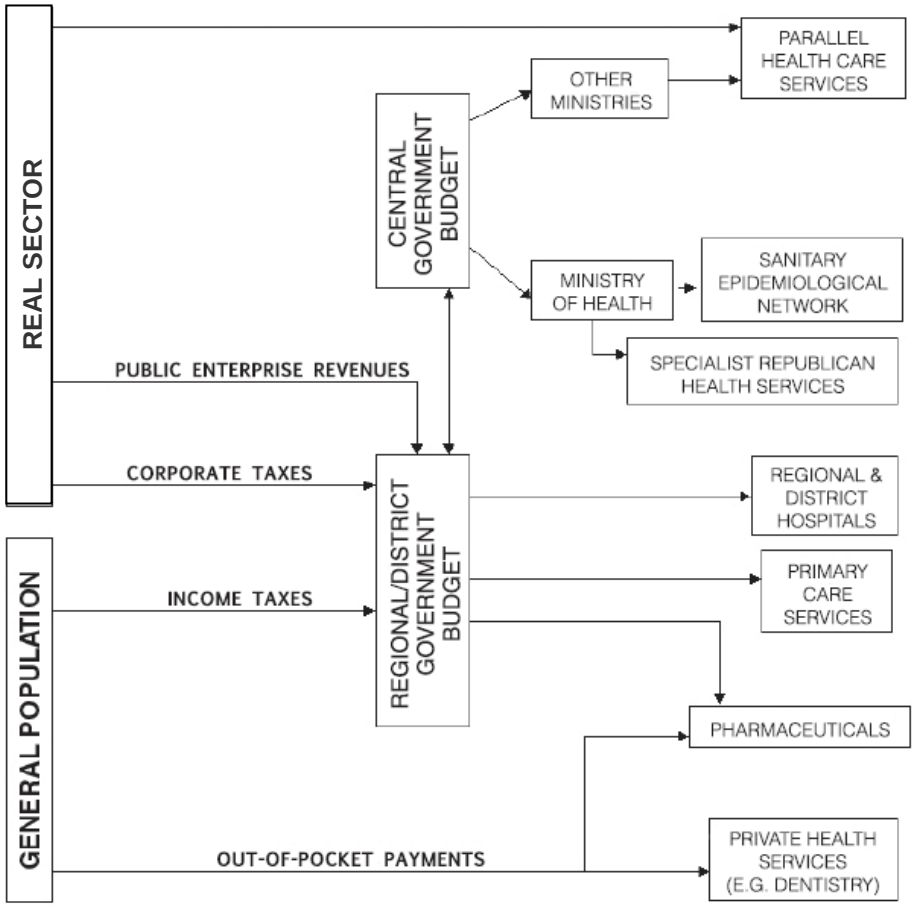
Note. * per 10000 women, ** per 10000 children at the age 0-14. Later on the ratio is provded for children at the age 0-17: It is 22.1 for 2008 and 2009.
Source: Belstat.

4.2. Structure of the sector and policy reforms

Belarus inherited the so-called Semashko healthcare system from its Soviet past. The system guarantees universal access to health care; it is financed by taxes and characterized by highly centralized resource planning. The care is focused on inpatient treatment while primary care is weakly developed. Such a system guarantees equality of access to the healthcare system, but the quality differs significantly between regions, as all specialized institutions are situated in big cities and Minsk in particular. Moreover, there are parallel healthcare organizations for people from government organizations, strategic enterprises and military forces, which provide services of much higher quality than average (see Figure 4.3).

Since regaining independence, Belarus did not implement radical changes in the inherited healthcare system. A key role in the healthcare system is played by the Ministry of Health. It makes all decisions on planning and financing, which are implemented at the local level as local governments are responsible for providing funds for primary and secondary care. The Ministry of Health directly funds only highly specialized tertiary services. There were incremental reforms targeted at the decentralization of the system but they did not go further than providing some financial independence for the regions in implementing the policy and reaching the targets set from above. Still, it resulted in a growing disparity between the regions, as rich cities enjoy a more developed healthcare system than rural areas.

Figure 4.3. Structure of the health system



Source: Richardson, Anker (2008).

So changes in the healthcare system in rural areas were inevitable. Among the most prominent one should mention general practice, which was introduced in the rural areas in the late 1990s. Besides, excessive hospital beds in rural areas were transformed into long-term social-care facilities that are partly financed by the Social Security Fund. Another measure targeted at a more efficient allocation of sources among the regions was the introduction of capitation budgeting. Since 2001, the upper financial limits for hospital services have been based on the number of residents in the region and districts. This provided an incentive for the district and regional health care authorities to cut the excessive number of hospital beds that were kept earlier in order to attract additional state financing. As a drawback of this reform, one can mention that there is no risk adjustment (for example, based on the number of people in the elderly population, Chernobyl catastrophe and so on).

There were also attempts to increase of the role of primary care in healthcare. Primary health care is provided through the polyclinic system, which also provides outpatient specialist care and diagnostic services. The system of polyclinics consists of two parallel subsystems for children and adults. However, a program of retraining physicians into general practitioners for rural areas allowed reduced the scale of duplication of primary care services. About 70% of rural outpatient clinics (out of more than 600) have general practitioners (Richardson, Anker (2008)), while in 1997 there were only 2 of them (World Bank (2002)).

The incremental change approach allowed Belarus to maintain universal access to services,[19] which are provided on a satisfactory scale. However, the problem of high expenses for the maintenance of the system and the low efficiency of resource allocation remained largely unsolved. Moreover, although efforts to empower local health care administrations have been undertaken, there is no real experience of privatizing health care facilities or delegating regulatory functions to non-state bodies.

4.3. Spending trends

Most of the health expenditures in Belarus come from the public sector; all diagnostic and treatment services, emergency care, out-of-hours care, public health services, some long-term care for elderly and all long-term care for people with mental disorders are provided free of charge. Most of these expenditures come from the budget, which is under the control of the Ministry of Health. There are also parallel healthcare systems, provided by some other Ministries and state enterprises for their employees which are funded from the respective Ministry budget.

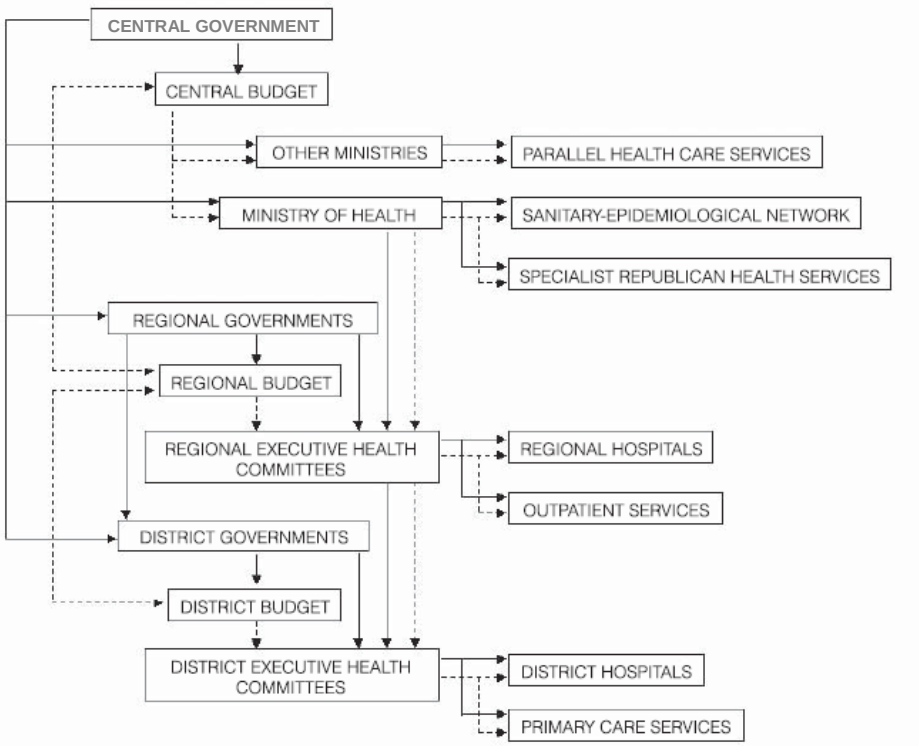
Most public health expenditures are funded by local governments. They provide funds for primary and secondary healthcare services for the population of the region. Primary services enjoy less financing compared to secondary, but their share has started to grow slightly. In 2008, the primary healthcare sector received 32% of all funds, while in 2009, the share grew up to 35%. In 2010, it was planned to be increased up to 40%[20]. Specialized tertiary care and specialized vertical programs are financed largely from the central government budget, along with scien-

[19] For instance vaccination rates for 1 year-olds are 97.8% for tuberculosis, 95.4% for diphtheria, 95.6% for wooping cough, 96.1% for poliomyelitis, 98.2% for measles, 98.2% for mumps.

[20] http://pacient.by/busines/621--2010-2008-.

tific research[21] (see Figure 4.4). The general volume of expenditures is determined by the Ministry of Health (in line with the decisions of Ministry of Finance, and being controlled by the Parliament and President), and budget decisions are passed from the central to local governments for implementation. Thus the scale of the implementation of the expenditure decisions made by the Ministry of Health depends on the financial stance of the local budgets. If the local government is able to collect enough taxes to finance additional expenditures on health they are free to do so. At the same time, if the available sources are insufficient, there are possibilities to lobby to rearrange downwards the plans set by Ministry of Health.

Figure 4.4. Financing of the health system



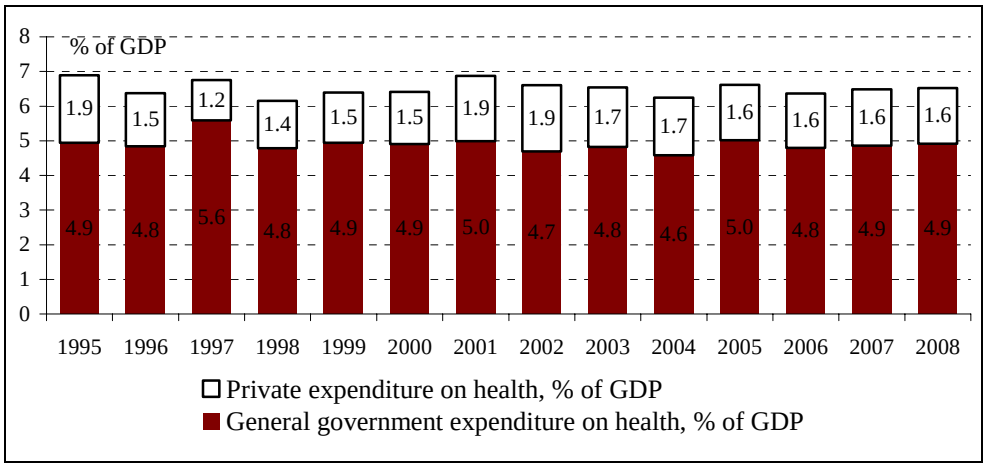
Source: Richardson, Anker (2008).

[21] 100% of scientific research expenditures are covered from the central budget (see Table 2.7). In 2009, they constituted 0.6% of total public expenditures on healthcare. Special programs are covered partly by the central government budget. For example, the program of preventing and treating oncological diseases (2010–2014) is financed from the central government budget by 85% (BYR 728.7 bn from 858.2 bn), the "Tuberculosis" program (2010–2014) – by 100% (BYR 43.0 bn), the program for the rehabilitation of the disabled (2006–2010) – by 32.7% (BYR 20.7 bn from 63.3 bn).

There are also health related expenditures covered from the Social Security Fund. They include social care and long-term care, as much of the long-term care for elderly is provided through the hospitals, using "social beds", starting from 2005[22].

Figure 4.5 reflects the total amount of expenditures on health in Belarus as a share of GDP, estimated by the World Health Organization (WHO). Since 2000, according to this data, the public sector has been spending on average about 4.9% of GDP, which is 75% of total health expenditures. This level was stable in the last decade with two drops in 2001 and 2004. However this data contradicts the statistics of GG expenditures presented in the Table 2.5. First, it is a bit higher, starting from 2005 (on average by 0.2% of GDP), as the WHO also includes Social Security Fund expenditures in health expenditures, which are recorded in social expenditures according to Belarus's budget classification. Second, there was a drastic fall of 0.6% of GDP of GG health expenditures in 2008, according to the Ministry of Finance, which was not registered by the WHO. Perhaps this is due to the fact that data for 2008 provided by the WHO are only provisional.

Figure 4.5. Total expenditures on health



Source: WHO.

However, the share of expenditures on health in total GG expenditures was falling even according to WHO estimates (see Table 4.5). Still, it can not be considered troublesome. On the one hand, this fall is explained by the steady growth of GG revenues. On the other hand, it is interrelated with the decrease in the population. It also explains the growth of public expenditures on health on a per capita basis.

[22] Before SSF expenditures on healthcare were lower, as hospitals in rural areas were partly reformed into long-term care institutions only in 2005.

Wages and related payments absorb up to 60% of regional expenditures on health (see Tables 4.7 and 4.8). At the same time, capital expenditures constitute less than 15% of the total. In the beginning of the 2000s, the focus within capital expenditures was on new facilities construction for the sector while equipment was modernized actively only in operating theatres and the intensive care units. Since 2004 the policy changed and more attention was paid to refurbishing existing stock and investing into equipment instead of construction (Richardson, Anker (2008)).

Table 4.5. Expenditures on health, main characteristics

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008
Public expenditures on health, % of GG expenditures	11.2	10.7	10.7	10.1	10.2	10.2	10.7	10.2	9.9	9.9
Expenditures on health from SSF, % of public expenditures on health	3.0	5.8	5.0	2.9	4.0	2.2	2.4	2.7	2.7	2.7
Private insurance, % of private expenditures of health	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Out of pocket expenditure, % of private expenditures of health	64.5	57.1	64.3	69.4	69.7	68.3	68.9	69.4	69.4	70.6
External resources on health, % of total health expenditures	0.0	0.1	0.2	0.1	--	--	--	0.2	0.2	0.2
Public expenditures on health, USD PPP per capita	168	251	275	278	313	343	426	465	528	602

Source: WHO.

The total volume of private expenditures on health has been stable since 2003 at the level of 1.6–1.7% of GDP (see Figure 4.5). A major part is formed by out-pocket expenditures, the share of which has also been stable at around 70% of total private expenditures recently (see Table 4.5). Private health insurance is not wide-spread in Belarus although it can be provided by the state insurance companies. Its share in private expenditures is close to nil.

Private out-pocket expenditures on health are largely related to pharmaceuticals, dentistry and optician costs[23]. In general, patients pay full cost for pharma-

[23] Informal payments are also wide-spread, but there is no statistical proof of this. According to the data from the General Office of the Public Prosecutor there were only 166 cor-

ceuticals within the outpatient care. However, there is a list of pharmaceuticals that are provided for people with some specific chronic diseases for free. Until 2007 there was a wide range of privileges for different groups of people, including pensioners and invalids. These were abolished, as the government made the shift towards a more means-tested social support system. Within inpatient care, pharmaceuticals are largely free. Dentistry is partly subsided by the state, but people tend to pay for this service, as the quality of public service is very basic. Besides, there are different private services provided both by private medical centers and the state healthcare system, but they are used only by those who can afford it, and the number of such people is not great.

External sources of health expenditure financing are very limited. They account only for 0.2% of total health expenditures. International organizations and non-governmental organizations are involved in the issues of HIV/AIDS, tuberculosis, and Chernobyl, and provide funds for some pilot projects as well, but their role is marginal in the sector as a whole.

4.4. Efficiency of spending

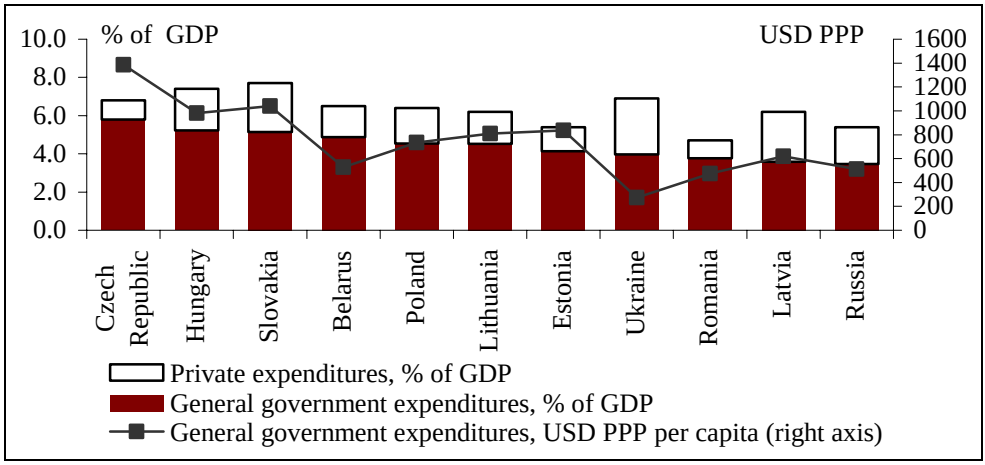
Belarusian public expenditures at the level of 4.9% of GDP in 2007 were close to the level of Central European countries such as Czech Republic, Hungary, Slovak Republic, leaving the Baltic states and Poland behind, according to WHO estimates. Belarusian GG health expenditures are significantly higher than those in the neighboring CIS countries like Russia and Ukraine (see Figure 4.6). However, the difference between Russia and Belarus is marginal if measured in USD PPP, while the level of Baltic and Central European states can be only a long-term goal for Belarus. It proves that Belarusian macroeconomic conditions are not that favorable for the sustainability of the statutory health care system.

A stable public finance situation allows Belarus to maintain a large number of medical personnel and a high hospital beds ratios. They are higher than those in the CEE region and in the CIS (see Table 4.6). At the same time, there is still a lack of physicians and nursing personnel in the primary sector, which signalizes that the available human resources are used inefficiently. The underdeveloped

ruption-related crimes in the healthcare system (out of a total 3366 in Belarus). However, the sentences are very strict. For example, one physician was sentenced for 6 years in jail for counterfeiting a medical certificate for bribe of 45 USD (see http://naviny.by/rubrics/disaster/2010/3/11/ic_articles_124_167021/).

general practice and low level of primary services financing, resulting in low wages[24], create incentives for the health personnel to either move to the secondary sector or leave it all together. There is also a deficit of pharmaceutical specialists and health organizations must compete for them. The number of beds in hospitals is still excessive, despite the reform of secondary sector financing. This highlights the existence of room for optimizing public health expenditures, which should make primary health care a priority.

Figure 4.6. Expenditures on health in selected CEE and CIS countries, 2007



Source: WHO.

Despite high public expenses on health, the nominally high number of physicians and an excessive number of hospital beds, the level of mortality in Belarus is higher than in neighboring EU countries (see Figure 4.7). First of all, this is explained by the frequent cases of death due to non-communicable diseases. Rates of such deaths in Belarus exceed rates in other analyzed countries, except Russia, and are largely equal to rates in Ukraine. Death rates due to communicable diseases are in line with the CEE average, thus providing ground for considering Belarusian

[24] In the healthcare sector, the average wage in 2009 was BYR 840.8 thsd (23% less than the average wage in Belarus), including BYR 1444.5 thsd for physicians and 816.0 thsd for nursing staff. The average wage of a graduated physician in the primary healthcare sector was much lower, at about BYR 600-700 thsd (see http://oboz.by/articles/detail.php?article=1847). In Minsk, in January-May 2010, a graduated physician (both in primary and secondary sectors) was receiving BYR 914.2 thsd (for comparison, the average wage was BYR 1078.2 thsd). Within the whole country, the wage of a graduated physician in the primary sector was BYR 846.2 thsd and in secondary – BYR 915.9 thsd. (see http://medvestnik.by/news/content/quick/5672.html).

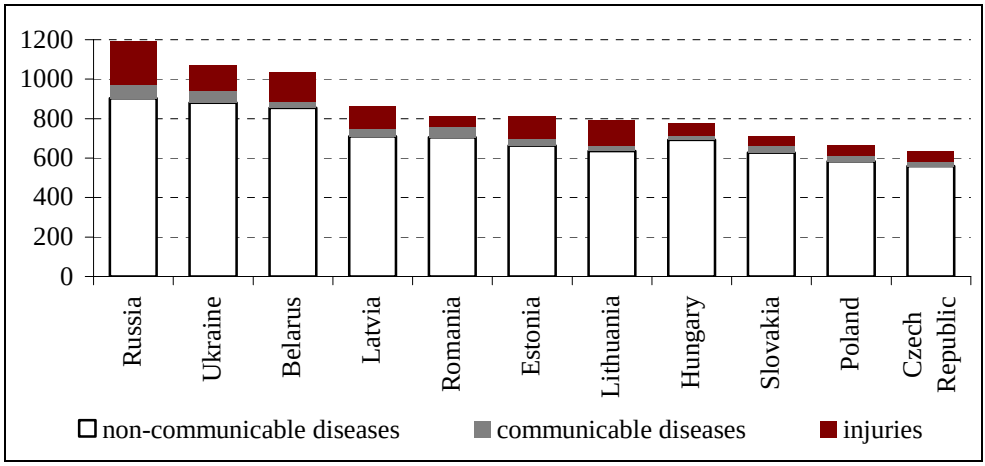
epidemiological services efficient. So the existing health system mainly does not cope with prevention of non-communicable diseases, as there is not enough promotion of a healthy life style.

Table 4.6. Selected mortality rates and health personnel availability in CIS and CEE countries

	Maternal mortality ratio, 2000-2009 (per 100,000 births)	TB mortality rate, 2008 (per 100,000)	Incidence of TB, 2008 (per 100,000)	Physicians, 2000-2009 (per 10,000)	Nursing and midwifery personnel, 2000-2009 (per 10,000)	Dentistry personnel, 2000-2009 (per 10,000)	Pharmaceutical personnel, 2000-2009 (per 10,000)	Hospital beds, 2000-2009 (per 10,000)
Belarus	7	5.2	43	49	126	5	3	112
Czech Republic	6	0.6	9	36	90	7	6	81
Estonia	0	1.9	34	33	70	9	7	56
Hungary	8	1.0	16	28	92	4	5	71
Latvia	26	5.5	50	30	57	7	--	76
Lithuania	9	9.3	71	40	76	7	8	81
Poland	3	2.6	25	20	52	3	6	52
Romania	14	7.7	130	19	42	2	0.5	65
Russia	24	15.0	110	43	85	3	1	97
Slovakia	6	0.7	12	31	66	5	5	68
Ukraine	15	15.0	100	31	84	4	5	87

Source: WHO.

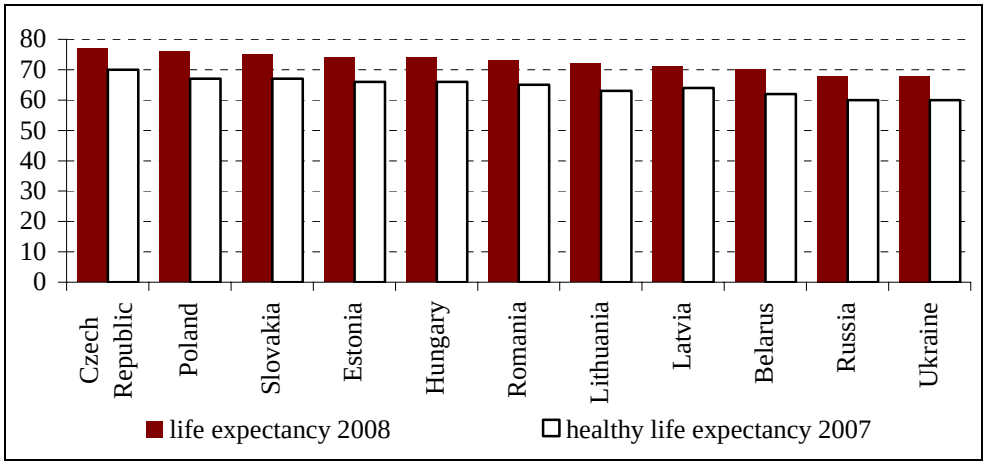
Figure 4.7. Age standardized mortality rates by causes per 100,000, 2008



Source: WHO.

As a result, life expectancy, and healthy life expectancy in particular, is considerably lower in Belarus than in the rest of the CEE region (see Figure 4.8). The existing health care system and generous public expenditures allow Belarus to maintain life expectancy rates at a rate just slightly exceeding rates in Ukraine and Russia, where the GG health expenditures measured as a % of GDP are much lower. Along with the excessive hospital bed rates and the non-rational allocation of the health workforce, it casts doubts over the efficiency of the existing Belarusian health care system.

Figure 4.8. Life expectancy in the CIS and CEE region, years



Source: WHO.

4.5. Sector development within the crisis

Total public expenditures on healthcare did not decrease due to the crisis. As is shown in Table 2.4, GG expenditures on health-related issues remained the same in 2009 as in 2008 if measured as a % of GDP. They have even increased if measured as a share of total GG expenses, from 7.9% to 8.4%. However, there were changes within the structure of expenditures and a division between the budgets.

The crisis, which hit public finance sector expenditures in 2009, forced local governments to cut expenses on healthcare. But this cut was marginal: health expenses dropped slightly from 3.11% of GDP to 3.06%. At the same time, this fall was accompanied by an increase of central government expenditures, from 0.79% of GDP to 0.85%. Hence the crisis increased the level of centralization in public expenditures on healthcare, while the role of local governments is still crucial.

In the structure of expenditures on healthcare, according to the functional classification, most changes occurred in the line of "other expenditures" (usually comprised of capital expenditures, construction in particular), which fell by 0.04% of GDP in local government budgets while in the central government budget they grew by 0.08% of GDP. As a result, this line grew by 0.04% of GDP in total. At the same time, the main line of expenses "medical assistance to citizens" was reduced by 0.02% of GDP in both the central and local government budgets simultaneously.

Developments in the structure of expenses by economic classification can be traced by examining the Vitebsk and Hrodna local budgets[25]. The total volume of expenditures on healthcare by these regional budgets was falling both if measured as a % of GDP[26] and as a share of total local government expenditures (see Tables 4.7 and 4.8). The fall occurred in both cases due to capital expenses. Their share in local government expenditures was reduced from 11.1 to 4.5% in the case of the Vitebsk region and from 14.2 to 10.2% in the case of Hrodna. The fall happened in all lines of capital expenditures, including equipment purchases, new facilities construction and capital repair of existing ones. Instead of capital expenditures, local governments tended to finance current expenses, such as medical staff salaries and transfers to the population. The growth in expenditures on salaries was explained by the increase of their share in GDP (due to slow GDP growth). In the health sector, wages grew slower than average: The gap between average wages and health care sector wages widened from 17.5% in 2008 to 18.8% in 2009 (i.e. average wage in health care sector is by 18.8% lower than average across Belarus in general). The growth of expenses on transfers to the population[27] can be explained by the worsened economic conditions of population.

Table 4.7. Vitebsk region budget expenditures on health

	2007	**2008**	**2009**
Heath expenditures, % of GDP	0.50	0.43	0.40
Heath expenditures, % of local budget expenditures	22.79	19.83	19.42

[25] Belarusian regions are quiet homogenous, so these two regions out of seven (six regions and Minsk as a separate administrative unit) can be considered representative. Moreover they represent eastern and western parts of Belarus; the marginal difference between them is caused by cross-border effects of neighboring Russia and EU respectively.

[26] % of gross regional product would be a more relevant measure; however, this is not estimated in Belarus.

[27] These transfers include, for example, dental services or prosthesis that are provided free of charge for some groups of the population. The growth of these transfers reflects reduced possibilities of the population to get such healthcare services on a commercial basis (where quality is higher).

	2007	2008	2009
current expenditures	**88.4**	**88.9**	**95.5**
Purchase of goods and services	85.5	86.9	93.1
Salary	*42.7*	*42.5*	*47.4*
Taxes on salary	*14.4*	*14.4*	*15.8*
Inventory and consumables	*15.5*	*16.3*	*17.0*
Business trips	*0.1*	*0.1*	*0.1*
Transport expenses	*1.6*	*1.7*	*1.7*
Communication expenses	*0.2*	*0.1*	*0.2*
Utility expenses	*8.5*	*7.9*	*8.6*
Other purchases	*2.6*	*3.8*	*2.3*
Subsidies and transfers	2.9	2.0	2.4
Capital expenses	**11.6**	**11.1**	**4.5**
Capital expenses on assets…	11.6	11.1	4.5
Purchase of equipment	*2.5*	*2.2*	*1.3*
Construction	*5.8*	*5.3*	*1.1*
capital repair	*3.3*	*3.6*	*2.1*
Expenses on non-tangible assets and territory	0.0	0.0	0.0

Source: Financial department of the Vitebsk local executive committee.

Table 4.8. Hrodna region budget expenditures on health

	2006	2007	2008	2009
Heath expenditures, % of GDP	0.41	0.43	0.36	0.33
Heath expenditures, % of local budget expenditures	22.18	21.02	18.42	17.75
current expenditures	**87.7**	**82.5**	**85.8**	**89.8**
Purchase of goods and services	83.7	78.8	83.0	86.3
Salary	*45.5*	*40.6*	*42.3*	*45.8*
Taxes on salary	*15.2*	*13.8*	*14.2*	*15.3*
Inventory and consumables	*12.8*	*12.6*	*14.3*	*13.5*
Business trips	*0.1*	*0.1*	*0.1*	*0.1*
Transport expenses	*1.5*	*1.4*	*1.6*	*1.5*
Communication expenses	*0.2*	*0.2*	*0.1*	*0.1*
Utility expenses	*5.7*	*7.0*	*7.2*	*7.4*
Other purchases	*2.9*	*3.2*	*3.2*	*2.5*
Subsidies and transfers	4.0	3.7	2.8	3.6
Capital expenses	**12.3**	**17.5**	**14.2**	**10.2**
Capital expenses on assets…	12.3	17.5	14.2	10.2
Purchase of equipment	*2.4*	*4.7*	*5.3*	*2.4*
Construction	*6.9*	*9.8*	*5.2*	*4.7*
Capital repair	*3.1*	*3.0*	*3.7*	*3.0*
Expenses on non-tangible assets and territory	--	--	--	--

Source: Financial department of the Hrodna local executive committee.

The crisis also affected private, out-pocket expenditures on health. It forced households reduce their expenditures on healthcare in favor of basic consumer goods. An especially sharp reduction was observed in middle-income households (see Table 4.9), which tended to have the greatest share of total expenditures on health, and poor households. The latter had to reduce healthcare related expenditures, even though they were not that high initially, limited to basic needs. Rich people almost did not reduce their expenditures on health, as they had possibilities to cut less expenditures in other areas, such as real estate, cars, savings and others.

Table 4.9. The share of out-pocket expenditures on health in total household expenditures depending on the income level, %

	2007	**2008**	**2009**
1st decile	1.70	2.13	1.51
5th decile	2.43	2.67	2.13
10th decile	2.10	2.15	2.04
Average	**2.16**	**2.32**	**2.05**

Source: Belstat, Household budget survey.

4.6. Mid-term outlook

The post-global economic crisis conditions make public expenditures rationalization even more urgent. Changes that occurred within the health care system, namely the transition from input-based to output-based financing via an introduction of capitation in the expenditure planning, and rural health care system modernization via the introduction of general practitioners and transformation of excessive hospitals into nursing long-term care centers, were of very high importance but they did not manage to reach the initial goals.

Despite efforts to reorient resource allocation in the Belarusian health system towards primary care and efforts to reorient prevention measures away from specialist and inpatient care, the hospital sector continues to absorb most of the financial, physical and human resources available. The shortage of health personnel in primary care, both in urban and particularly in rural areas, is an especially acute problem considering that there is no shortage of medical students and graduates; the hospital sector continues to absorb trained specialists, while polyclinics struggle to fill empty posts.

Most of the reforms that are necessary in the health care system have been officially accepted and are clearly stated in the Concept on the Development of Health-

care in the Republic of Belarus for 2003–2007. They include payment procedure improvements for health care personnel via the introduction of output based payments and increasing remuneration of physicians in the primary care sector. Besides, there is a desire to improve the efficiency of resource allocations by giving priority to primary health care improving prevention services. The latter requires paying more attention to the diseases that have the greatest impact on the working-age population (namely cardiovascular diseases, diseases of the respiratory system, alcoholism) and improving prevention strategies and health education.

Moreover, developing the necessary legislative base for the introduction of a new health care financing model is also an important goal. However, this reform, as many of the others, is unlikely to be achieved in the near future. Belarus tends to reform its healthcare system incrementally, putting aside measures that may cause social tensions and hamper the accessibility of health care services. Only fiscal pressures that may arise due to middle and long term challenges in the Belarusian public sector can accelerate reforms in the healthcare sector.

5. Conclusions

The pre-crisis period of 2003-2008 was the most prosperous in the recent history of the Belarusian economy. The economy enjoyed a jump in foreign demand for a majority of goods produced in the landscape of high oil prices and strengthened growth in the CIS-region. Exploiting the favorable economic environment allowed Belarus to achieve macro-stabilization (although the inflation rate was substantially higher than in other CEE countries, it was decreasing and the demand for national currency was growing). Furthermore, a range of factors at the cross-section between economics and politics – low gas prices, special duties on Russian crude oil, preferences in access to the Russian market – helped boost economic growth. In these conditions, the trends in public finance seemed positive as well: during several years Belarus even generated a fiscal surplus. This was mainly due to positive shocks in collecting budget revenues. In the mid-2000s, there was a positive shock in revenues from indirect taxes other than VAT. Furthermore, since 2007, due to trade in oil products, taxes on foreign trade almost doubled. Thus, the government succeeded in ensuring a stable inflow of revenues, which seemed more than enough for financing the needed amount of expenditures. As a result, the perspectives of public finance stability looked safe.

However, an increase in taxes on foreign trade did not capture their ultimate impact on the budget because a huge fraction of these additional revenues should have been redirected to oil-traders in order to make oil-refining profitable for them. This was a consequence of the scheme of sharing export duties on oil products with Russia introduced in 2007. Hence, the net effect of oil-trading taxation was not so good. Herewith, through this entire period, the government looked for mechanisms of expenditure optimization. Evidently this process could not miss the main expenditure items – healthcare and education. Moreover, there were good reasons for revising the principles of financing these sectors, which experienced distortions inherited from the Soviet times. Negative demographic trends also justified these cuts. In addition, each sector represented additional peculiarities, which allowed for seeking expenditure optimization.

In education, the government put most of its attention on general secondary education, which was the main expenditure item in this sector. In the late 1990s, the government launched a thorough reform of secondary general education, which included a gradual shift to a twelve-year schooling cycle. Evidently, this reform

meant the increase of corresponding expenditures both in absolute values and in per capita terms. However, the preliminary results of the reform were assessed in 2008 by the authorities as unsatisfactory. The reform was reversed very rapidly (in two years), which allowed the government to reduce its financing of this sub-sector. At the same time, the tendency of growing per capita expenditures in secondary education was maintained. The total effect of changes in secondary education provided a reduction in expenditures in terms of share of GDP.

In other educational sub-sectors, clear trends were visible with respect to pre-school and vocational education. In pre-school institutions, the enrolment rate was not that high, while the demand for their services was rather stable. Hence, the government had to provide additional financing for expanding pre-school facilities. Thus, there was a clear upward trend in spending for these purposes. As for vocational education, it became one of the priorities, as the lack of working specialties began to disturb the labor market in the 2000s. Per capita expenditures and expenditures in real terms were growing. However, it should be emphasized that the growth rates in financing these sub-sectors were considerably lower than real GDP growth rates. This effect was strengthened by demographic trends, providing a reduction in the corresponding expenditures in terms of their share in GDP.

In higher education and special secondary education, the orientation of the government towards more commercialized education was evident. Despite a boom in the number of students during the last decade, corresponding expenditures in real terms were almost stable. Actually they mirrored the trend of considerable increases in the number of students, who studied at their own expense. Thus, public expenditures both in per capita terms and as a share of GDP were diminishing during the pre-crisis period. A similar tendency of engaging more private resources may be stressed in regard to other fields of education, such as out-of-school education, research etc.

In absolute values, expenditures in all sub-sectors of education were far from satisfactory. For instance, a considerable and increasing gap in wage rates (between education and the average wage in the economy) indicates the decreasing competitiveness of education on the labor market. Capital needs were also not financed at the necessary level. Thus, we may argue that during the pre-crisis years, fiscal considerations usually took priority over the needs of the education sector.

In healthcare a range of structural reforms alongside demographic changes allowed the government to cut financing in this sector as well. As the starting point, a high number of medical personnel and an excessive number of hospital beds inherited from the Soviet period should be emphasized. At the same time, the inherited system suffered from regional disparities in the quality of healthcare be-

tween urban and rural areas, which reduced the effectiveness of spending. As a result, the main reforms were directed at rural areas. First, the introduction of general medical practice in rural areas should be mentioned. Second, excessive hospital beds in rural areas were transformed into long-term social-care facilities that were partially financed by the Social Security Fund. Another measure targeted at a more efficient allocation of resources between the regions was the introduction of capitation budgeting. Planning the financing of hospital services with upper expenditure limits based on the number of residents in the region and districts has been in place since 2001. This has provided an incentive to the district and regional health care authorities to cut the excessive number of hospital beds that were kept earlier in order to attract additional state financing. These reforms had a positive effect on healthcare, and due to them some cuts in expenditures at the beginning and mid 2000s might be justified. Furthermore, there were also attempts to increase the role of primary care and prevention measures but these reforms are far from complete. Inpatient care still absorbs most of the financial, physical and human resources available.

Overall, GG expenditures for healthcare were relatively stable in the late 2000s. The only considerable reduction that might be partially associated with increased spending efficiency in certain sub-sectors took place in 2008. However, the efficiency of spending in the sector as a whole and the adequacy of the budget financing to the sector's needs are still questionable. Doubts with respect to the efficiency of healthcare expenditures arise when comparing international life expectancy indicators. Despite higher expenditure in Belarus compared to Russia and Ukraine, the indicators of life expectancy are broadly the same. Furthermore, there is still a lack of physicians and nursing personnel in the primary sector, which signalizes that the available human resources are used inefficiently. The underdevelopment of general practice and the low level of primary services financing, resulting in low wages, creates incentives for the health workforce either to move to the secondary sector or leave it all together. Besides, there is a lack of pharmaceutical specialists and health organizations must compete for them. The latter shows a problem similar to the one in education: at a given level of finance, the government faces a trade-off between financing increasing wages or capital investments, which is inconsistent with the effective functioning of the healthcare system.

Thus, in respect to the pre-crisis period, our main findings may be summarized as follows:

1. Mainly due to demographic trends, the government succeeded in reducing the share of expenditures on education and healthcare in terms of share of GDP, which limited the pressure on public finance.

2. At the background of a prosperous environment, the government carried out notable reforms in the education and healthcare sectors, aimed at increasing the efficiency of spending and limiting the pressure on public finance.
3. Signals of increasing efficiency in spending may be admitted both in education and healthcare. However, the full picture in terms of efficiency is still unclear as a number of indicators needed for a credible judgment are either absent or demonstrate ambiguous results.
4. A number of policy measures that may be associated with restricting pressure on the expenditure side and increasing efficiency in the short-term may become a threat in the long-term. More specifically, there is a threat of losses in welfare in the long-term associated with lost opportunities with respect to number of years of education and life-expectancy.

The global crisis hurt the Belarusian economy. However, the macro indicators of the Belarusian economy were quite good in comparison to other countries. The deterioration of public finance was limited: the shortage of revenues was felt by the government mostly at the very end of 2008 and in the beginning of 2009. The shock affected mostly the revenues side as due to the peculiarities of the Belarusian economy, the increase of expenditures associated with automatic stabilizers was not considerable.

A drop in GG revenues of 5.1% of GDP in 2009 in comparison to 2008 became the result of both the deterioration of the economic performance and changes in taxation. The fall occurred only due to the drop in tax revenues, as non-tax revenues and social contributions grew in 2009 by 0.8 and 0.3% of GDP respectively. The crisis affected all kinds of tax revenues but taxes on foreign trade, taxes on income and profit, and taxes on goods and services were most exposed to the crisis.

In this situation, spending trends in 2009 should have been adjusted to those on the revenues side, while SBA agreements with the IMF set the upper level of the deficit for local budgets. As for the central budget, the government took the obligation to finance expenditures on a non-deficit basis in 2009. In functional breakup, the biggest cuts in expenditures affected the ‘expenditures on national economy’ item and the ‘general public expenditures’ item as they contained a number of items associated with specific mechanism of economic regulation. In economic classification, the most severe reduction touched capital expenditures and current subsidies and transfers (mainly due to a reduction of subsidies to oil-traders).

The strategy of expenditures adjustment – restriction of capital expenditures and freezing wages – touched almost all the functional directions of the consolidated

expenditures. Expenditures on education and healthcare followed this trend as well but with certain peculiarities. In education, expenditures on pre-school education were almost not affected by the crisis. This may be interpreted as the continuation of the long-term tendency of widening pre-school facilities, as one of the priorities in education policy. The most severe reduction in terms of share in GDP and in real terms took place in general secondary education, which mainly determined the corresponding reduction of the whole sector. However, in 2009, per capita expenditures in general secondary education maintained growth in real terms, which reveals the limited influence of the crisis on these kinds of expenditures. We can argue about the domination of long-term trends in respect to secondary specialized and higher education as well. Pursuing the goal of increasing the share of private resources in these fields, the government simply kept this policy during the crisis as well. Thus, the tendency of decreasing expenditures per capita continued in both subsectors (by 0.1% of GDP in 2009 comparing to the previous year).

In certain sub-subsectors of education, the long-term trends were changed. For example, before the crisis, vocational education was considered a priority due to the deficit of working specialties in the labor market. Therefore, the government increased expenditures for this subsector, trying to eliminate this deficit. In 2009, these expenditures were almost constant both in real terms and as their share in GDP. But due to the reversal of the secondary school reform, in 2009 vocational schools saw a major jump in the number of new entrants. This could be an argument for additional financing for vocational education. However, it did not happen in the crisis period, leading to a decrease in per capita financing within this sub-subsector. Severe adjustments also took place in the 'supportive' sub-sectors of education such as out-of-school education and applied engineering and research. Here we may argue that the government considers them of secondary importance. Finally, we may conclude that the adjustment in the educational sector coincided with the common trends for the entire budget sector and with long-term policy trends in education. Alongside restricting expenditures due to demographic trends, the government made severe restrictions in 'supportive' sub-branches, which resulted in a reduction of 0.2% of GDP in education expenditures.

Expenditures on healthcare experienced fewer adjustments in light of the crisis and any changes were more a continuation of long-term trends. The main functional directions of healthcare were financed at the level of the previous year, thus exploiting the results of the in-sector reforms in the previous period. The most severe change took place in financing additional medical needs that are traced in the 'other' item in the consolidated budget. This item was reduced at the level of municipalities, which was more than compensated at the central level. Hence, this item had an overall small increase of 0.05% of GDP. At the same time, this mechanism slightly increased the level of budget centralization within the sector. In

functional classification, a certain reduction in expenditures was reported within the item 'medical assistance to citizens', which however was not significant (0.04% of GDP). Overall, the vulnerability of healthcare expenditures to the crisis was relatively small and the whole amount of expenditures was roughly at a constant level.

Despite rather weak adjustments in the overall amount of expenditures for both education and healthcare during the crisis, changes in their structures should be admitted. These changes were a consequences of the government's policy in respect to the entire budget sector – restricting capital expenditures and freezing the level of wages to a level that is slightly greater than the 2008 level. As a result, the problem of financing capital needs is becoming more vital to the branches. Taken in one row with the substantial gap in wages between education and healthcare on the one side, and average wages in the economy on the other side, this signals the necessity of additional financing for both sectors to increase their effectiveness.

Finally, we conclude that policy reforms in the education and healthcare sectors and demographic trends offered the possibility of restricting financing in these branches. Nevertheless in healthcare, policy reforms seem to have no effect the quality of its services. As far as education is concerned, the absence of a negative impact of reforms on its quality is at least doubtful. Generally, adjustments in the expenditure levels in previous years allowed avoiding shock adjustments during the crisis. The latter resulted in the restriction of capital expenditures, along with a slight increase in expenditures on wages and related ones. But from the medium-term perspective, one may argue that the existing trade-off between capital and wage expenditures, unsatisfactory values of a range of quality indicators are evidence of a shortage in financing of both education and healthcare. In our opinion, providing financing at the level needed for enhancing the effectiveness and efficiency of education and healthcare should be a priority, taking into consideration their role in increasing productivity in the long-term.

Thus, the impact of the crisis on financing public services in Belarus may be summarized as follows:

1. Mainly, public services like education and healthcare did not suffer from sudden restrictions in financing due to the crisis agenda. The majority of adjustments in these sectors corresponded to long-term trends peculiar to these sectors.
2. Some minor adjustments consequent to crisis took place only at the level of sub-branches, but this had a limited influence on the dynamics of entire sectors. Nevertheless, it determined some changes in the structure of the sectors.
3. The basic strategy of the government was managing public expenditures on economic criteria during the crisis. For instance, in

2009 the government restricted capital expenditures and almost froze wages, which affected education and healthcare as well.

4. However, restrictions of capital expenditures along with some doubts in respect to the spending efficiency actualize a threat of long-term losses in welfare.

The main findings of our study lead us to the following policy recommendations aimed at facilitating spending efficiency and staving off long-term threats.

1. National evaluation systems on school, local and national level should be established. Along with the increased participation of parents in school bodies, this will make the quality of education more evident and transparent. In turn, it will facilitate greater competition at the school level and a higher efficiency of fiscal spending.
2. Involvement in international educational programs like PISA, PIRLS, TIMSS. Taking part in these programs will enable a comparison between the Belarusian educational system and international standards and provides more grounds for quality management in the sector.
3. Promotion of capitation approach in education and setting per capita standards as the actual benchmark for expenditures within the sector. Alongside this, it is worth considering at least a partial introduction of forms of government financing of educational institutions that promote competition (like educational vouchers, project financing, etc.) and thus lead to an improved quality of education.
4. A further increase in per capita income in pre-primary education should be a priority in education, in order to neutralize the alarming tendency of enrolment reduction in pre-primary education.
5. A strategy in regard to attracting private resources to tertiary education should be launched and publicly discussed. Before this can happen, a reduction of per capita financing of tertiary education that is not always accompanied by an adequate inflow of private resources should be eliminated.
6. Increasing the number of secondary school years to bring Belarus closer to benchmarks in developed countries should be considered in the medium-term period.
7. A balance between different types of expenditures (i.e. current and capital) should be maintained depending on the needs of the sector, not depending on macroeconomic targets.

8. Efficiency of public finance allocation in healthcare should be increased by reshaping it in favor of primary care. The shortage of health personnel in primary care, both in urban and particularly in rural areas, is an especially acute problem considering that there is no shortage of medical students and graduates.
9. Payments procedures to health care personnel should be improved via the introduction of output-based payments and increasing remuneration of physicians in the primary care sector.
10. More attention should be paid to the non-communicable diseases with a stress on primary prevention. Especially focused attention should be paid to the diseases that have the greatest impact on the working-age population (namely cardiovascular diseases, diseases of the respiratory system, alcoholism) and improving prevention strategies and health education.
11. Technologies allowing the reduction of expenses on healthcare like outpatient care, day care and day surgery should be developed more widely in Belarus.

Private health insurance schemes should be developed, which implies that private insurance companies are allowed to operate in this market.

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