

# Cross-country Analysis of Budget Expenditures Profile and Efficiency

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# The effects of the taxes structure, the Expenditures profile and the budget balance on the economic growth

Financing at the expense of:	Productive expenditures	Non-productive expenditures	Budget surplus
Taxes adversely affecting investment decision-making	Positive /negative (subject to low/high ratio between the public expenditures and the GDP)	Negative	Indefinite
Neutral taxes	Positive	Zero	Indefinite
Budget deficit	Indefinite	Negative	

# Macroeconomic functions of budget sector

- **Allocation function**

Provision of public goods, i.e. the process when the aggregate resources are divided between producing private goods and public goods, the assumed level of public goods is defined and faster economic growth rates / higher economic development indicators and lower unemployment are achieved

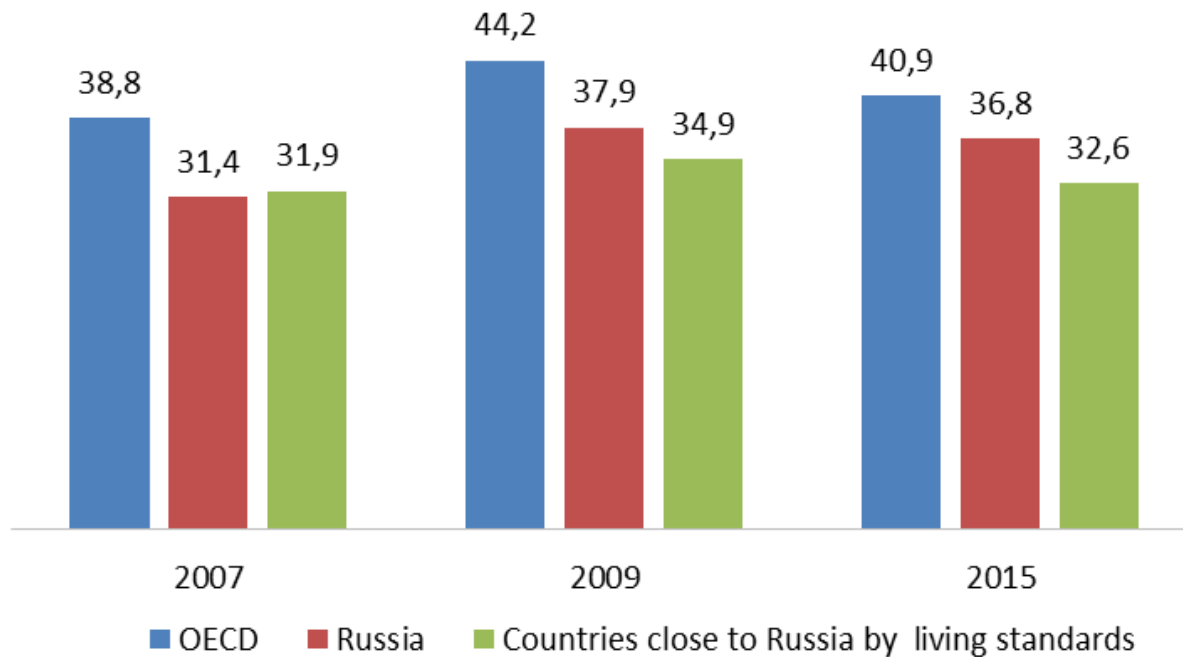
- **Redistribution function, i.e., income levelling function**

Adjustment of the existing distribution of income and wealth to bring it in line with the commonly accepted perceptions about “fair” distribution

- **The stabilising function**

The budget policy as means to assure low inflation rate and sustainable economic growth (the stabilising function). Positive results may be achieved here only in combination with the adequate monetary policy.

## Budget share in GDP (B %)



Data of OECD, IMF, Rosstat, authors' estimations

## Expenditures profile and changes in Russia and OECD countries in 2007-2015, %

	OECD 2007	Russia 2007	OECD 2015	Russia 2015	OECD, change of Expenditures share during 2007-2015, p.p.	Russia, change of Expenditures share during 2007-2015, p.p.
<b>Nation-level issues</b>	14.4	10.3	13.2	8.4	-1.2	-1.9
<b>National defense</b>	6.0	7.3	5.1	12.1	-0.9	4.7
<b>National security and law enforcement</b>	4.6	7.6	4.3	7.0	-0.3	-0.6
<b>National economy</b>	9.8	13.7	9.3	12.4	-0.5	-1.3
<b>Environmental management</b>	1.3	0.2	1.3	0.3	0.0	0.0
<b>Housing and utilities</b>	1.9	9.7	1.4	3.2	-0.5	-6.5
<b>Healthcare and sports</b>	17.0	12.1	18.7	10.8	1.7	-1.3
<b>Culture, cinematography and mass media</b>	1.7	2.2	1.5	1.7	-0.1	-0.4
<b>Education</b>	13.3	11.8	12.6	9.9	-0.7	-1.9
<b>Social policy</b>	30.0	25.1	32.6	34.8	2.6	9.8

Source: RF Ministry of Finance, OECD, Government at Glance 2017, authors' estimates. OECD data are calculated as simple average indicators by countries.

# The sample of countries for comparative analysis

- Russia
- fourteen EU countries (Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia and Greece)
- a number of developing economies (Brazil, Mexico, Chile, India, Indonesia, Thailand, Turkey and Uruguay)
- two former Soviet republics (Azerbaijan and Kazakhstan)

The average GDP by PPP per capita in 2010-2015 is within the range from \$5,000 (the level of India; without India the lower level of this indicator would be \$10,000) to \$31,000 (the level of Cyprus), with the average value of \$21,400.

# Evaluation of macroeconomic functions performance by the budget sector

- The achievements in the revenues redistribution sphere (income levelling function) are evaluated by Gini coefficient.
- The overall success in performance of stabilisation function is reflected in inflation indices and stable economic growth rate.
- Finally, the success in performance of the budget resources distribution functions and allocating such resources to other sectors of the economy may be evaluated by the indicators of unemployment and average rate of economic growth in the mid-term period.

Evaluation of  
macroeconomic  
functions  
performance by  
the budget sector

	Evaluation of exercising the distribution function	Evaluation of exercising the income levelling function	Evaluation of exercising the stabilisation function	Integral indicator of the effectiveness of exercising the macroeconomic functions
Indonesia	1.20	0.88	3.19	1.76
Thailand	3.36	0.89	0.86	1.70
India	1.78	0.99	1.58	1.45
Slovakia	0.95	1.33	1.35	1.21
Kazakhstan	1.40	1.27	0.88	1.18
Poland	1.00	1.08	1.31	1.13
Lithuania	0.99	0.99	1.38	1.12
Czech Republic	0.98	1.33	0.97	1.10
Chili	1.19	0.69	1.11	1.00
Slovenia	0.74	1.36	0.88	1.00
Estonia	1.03	1.05	0.89	0.99
Latvia	0.79	0.98	1.19	0.99
Cyprus	0.48	1.02	1.31	0.94
Mexico	1.05	0.73	1.02	0.93
Turkey	1.19	0.87	0.69	0.92
Azerbaijan	0.97	1.10	0.67	0.91
Uruguay	1.14	0.84	0.73	0.91
Hungary	0.79	1.14	0.66	0.86
Bulgaria	0.59	0.97	1.00	0.85
Romania	0.82	1.00	0.64	0.82
Portugal	0.51	0.97	0.67	0.72
Russia	0.93	0.84	0.34	0.71
Croatia	0.36	1.07	0.58	0.67
Brazil	0.84	0.66	0.35	0.62
Greece	-0.08	0.95	0.74	0.54



# Evaluation of the effectiveness and efficiency of certain types of budget expenditures

- To evaluate the **administration expenditures** effectiveness, we use WEF indicator characterising the level of corruption, the redundancy of government regulation, the quality of the judicial system and the protection of ownership rights.
- To evaluate the **education expenditures** effectiveness, we use the results of the PISA testing and WEF indicator “education system quality”.
- For the **healthcare expenditures** effectiveness we use the indicators of the World Bank reflecting infant mortality and life expectancy.

## Effectiveness of budget expenditures

	Administration	Education	Healthcare	Integral effectiveness indicator
Estonia	1.37	1.20	1.66	1.41
Cyprus	1.19	1.17	1.59	1.32
Slovenia	0.94	1.14	1.80	1.29
Portugal	1.12	1.16	1.42	1.23
Czech Republic	0.99	1.09	1.47	1.18
Lithuania	1.01	1.10	1.30	1.14
Poland	1.03	1.07	1.11	1.07
Chili	1.25	0.97	0.92	1.04
Greece	0.92	0.92	1.28	1.04
Croatia	0.83	0.97	1.25	1.02
Latvia	1.07	1.06	0.87	1.00
Uruguay	1.30	0.90	0.81	1.00
Hungary	0.84	0.97	1.00	0.94
Kazakhstan	1.05	1.02	0.68	0.92
Indonesia	1.09	1.04	0.57	0.90
Thailand	0.98	0.97	0.74	0.90
Romania	0.96	0.95	0.77	0.89
Turkey	0.99	0.94	0.73	0.89
Slovakia	0.77	0.91	0.97	0.88
Russia	0.81	1.04	0.79	0.88
India	1.12	0.97	0.52	0.87
Bulgaria	0.84	0.95	0.78	0.85
Mexico	0.84	0.86	0.74	0.81
Azerbaijan	0.98	0.87	0.56	0.80
Brazil	0.72	0.78	0.67	0.72

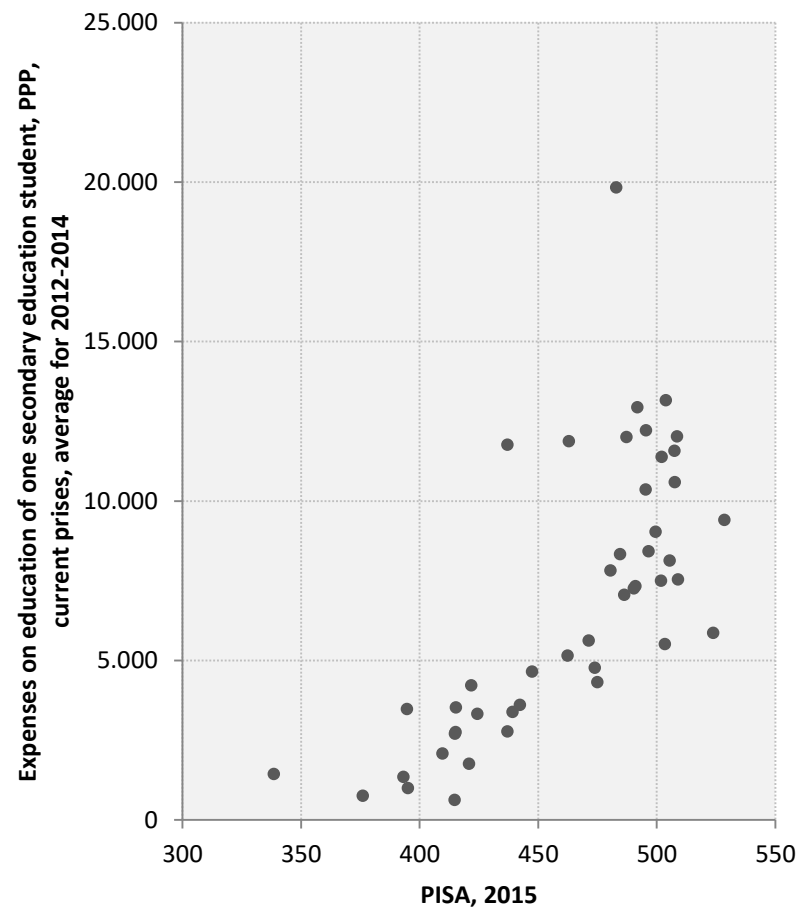
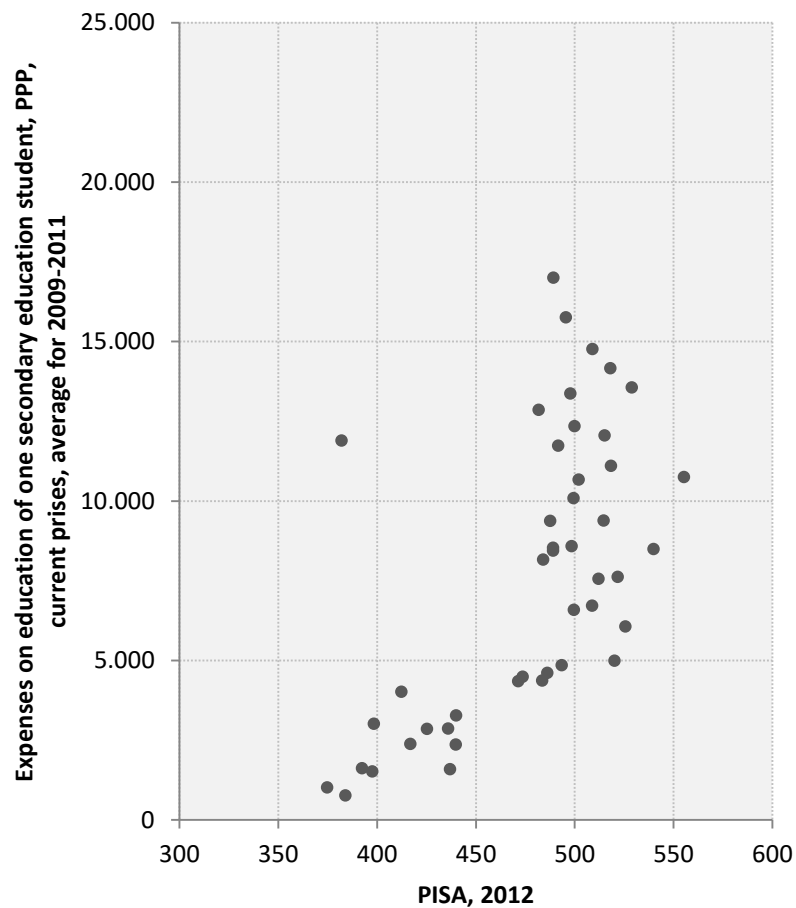
## Budget expenditures % GDP

	Budget expenditures, % of GDP	Healthcare expenditures	Education expenditures	GDP by PPP per capita, \$, current prices
Cyprus	1.13	0.81	1.48	1.48
Czech Republic	1.17	1.49	1.15	1.42
Slovenia	1.29	1.58	1.25	1.38
Portugal	1.37	1.54	1.17	1.30
Slovakia	1.14	1.36	0.92	1.28
Greece	1.43	1.43	0.95	1.23
Estonia	1.07	1.17	1.13	1.22
Lithuania	1.01	1.08	1.11	1.18
Poland	1.18	1.10	1.11	1.13
Russia	0.95	0.87	0.93	1.12
Hungary	1.35	1.17	1.02	1.12
Kazakhstan	0.59	0.56	0.63	1.06
Latvia	1.06	0.88	1.10	1.01
Chili	0.64	0.83	1.00	1.00
Croatia	1.31	1.53	0.98	0.99
Romania	0.96	1.06	0.71	0.91
Uruguay	0.85	1.37	0.98	0.90
Turkey	0.90	1.00	1.00	0.87
Azerbaijan	0.98	0.28	0.56	0.78
Bulgaria	0.96	0.97	0.85	0.77
Mexico	0.75	0.75	1.16	0.76
Brazil	1.05	0.89	1.30	0.71
Thailand	0.60	0.74	0.96	0.69
Indonesia	0.49	0.26	0.72	0.45
India	0.74	0.29	0.83	0.24
Correlation with income per capita	0.658 (p < 0.01)	0.698 (p < 0.01)	0.506 (p < 0.01)	

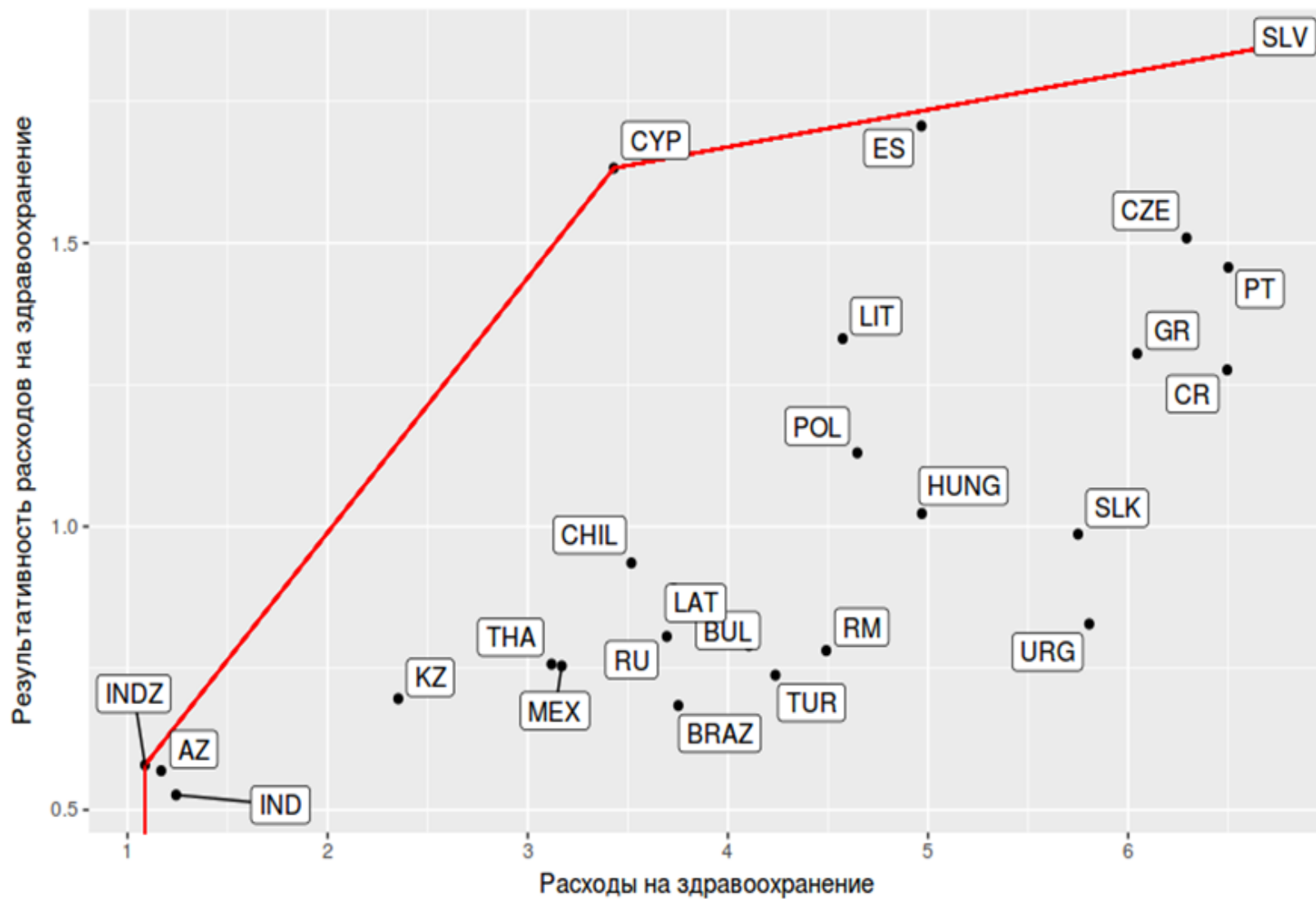
## Efficiency of budget expenditures

	Healthcare	Education
Indonesia	2.22	1.44
Azerbaijan	2.03	1.55
Cyprus	1.96	0.79
India	1.77	1.17
Estonia	1.42	1.06
Kazakhstan	1.23	1.62
Lithuania	1.20	0.98
Slovenia	1.14	0.91
Chili	1.10	0.97
Thailand	1.01	1.01
Poland	1.01	0.96
Latvia	0.99	0.96
Czech Republic	0.99	0.95
Mexico	0.99	0.74
Portugal	0.93	0.99
Russia	0.91	1.11
Greece	0.89	0.97
Hungary	0.85	0.95
Croatia	0.81	0.99
Bulgaria	0.80	1.12
Brazil	0.76	0.60
Turkey	0.72	0.94
Romania	0.72	1.35
Slovakia	0.71	0.98
Uruguay	0.59	0.92

# Results of PISA testing for 2012 and 2015 (scores, horizontal axis) and education expenditures per one secondary education student, average for 2009-2011 and 2012-2014 (PPP, current dollars, vertical axis)



# Efficiency frontier for the healthcare expenditures DEA



**Ranking countries  
by their healthcare  
expenditures  
efficiency based on  
integral indicator of  
healthcare  
expenditures  
efficiency and using  
DEA model**

	Integral indicator	DEA	
		Rank	Efficiency indicator
Indonesia	1	1	1.00
Azerbaijan	2	5	0.92
Cyprus	3	1	1.00
India	4	7	0.81
Estonia	5	4	0.98
Kazakhstan	6	13	0.61
Lithuania	7	9	0.78
Slovenia	8	1	1.00
Chili	9	15	0.57
Thailand	10	18	0.51
Poland	11	12	0.66
Latvia	12	17	0.54
Czech Republic	13	6	0.83
Mexico	14	19	0.50
Portugal	15	8	0.79
Russia	16	20	0.49
Greece	17	10	0.72
Hungary	18	14	0.59
Croatia	19	11	0.70
Bulgaria	20	21	0.47
Brazil	21	25	0.41
Turkey	22	24	0.44
Romania	23	23	0.46
Slovakia	24	16	0.55
Uruguay	25	22	0.46

# Conclusions

- Structural changes in budget expenditures in Russia in 2007-2015 were more drastic than in OECD countries, but it is even more important, that they were not oriented towards the productive expenditures growth. One can say, that such changes do not provide for faster economic development in the mid-term and long-term horizon. In 2015, Russia had significantly smaller shares of education and healthcare expenditures in the budget expenditures profile –9.9% and 10.8% respectively versus 12.6 and 18.7% in OECD countries.
- Russia is ranked 19 among 25 countries in terms of education and healthcare expenditures effectiveness, as well as in terms of administration quality. Such low rank is to a great extent explained by relatively high infant mortality and low life expectancy (the indicators forming the final evaluation in healthcare). In addition, Russia is below average for the sample in terms of all the selected administration quality indicators – corruption, redundancy of government regulation, independence of the judicial system, protection of ownership rights. Based on WEF evaluation, the judicial system independence received the lowest score – 70% of the average level. Education expenditures effectiveness in Russia is relatively good – above average.
- Evaluation of the healthcare expenditures efficiency by international comparisons method based on the life expectancy and mortality indicators and by the DEA method demonstrate rather low efficiency of these expenditures in Russia. The Diagram composed in the process of calculations using the DEA method shows, that Russian indicators are far from the efficiency frontier and that the expenditure effectiveness needs to be improved. Similar calculations for the education expenditures show their relatively high efficiency in Russia and demonstrate the potential for improving the effectiveness by increasing the size of the education expenditures in Russia.