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FINANCIAL PROBLEMS

Predicting the Budgetary Funding Need of Education in the Three-Year Budget for 2008–2010

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Abstract—The paper presents a technique developed by the authors, which makes it possible to determine the necessary amount of financing for education at all the budget system levels for 2008–2010, based on the Russian average value of financing, taking into account the budget expenditures index for two variants of student population, i.e. the actual number of on-budget students and the number of students required to meet the economy's need for trained workers. The technique was developed and the calculations were made on the basis of Russian long-term forecasts and the Russian three-year federal budget for 2008–2010.

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On the transition to normative financing of education.[1] Improving the quality of education is a relevant task for the current stage of Russia's social and economic development. One of the key issues in meeting this objective is the level of financing at all the educational stages [14].

Education is one of the most important social spheres where considerable public resources are spent. Every eighth ruble of the expenditures made from the Russian consolidated budget goes on the item "Education". However, the question about the valid needs of the education sphere is still open, though the state is currently implementing one of the four priority national projects in this sphere. At present, there are the following restrictions in financing the educational sphere:

—a model for financing each education level is not determined;

—there is no mechanism to coordinate the money spent and results achieved;

—transparency in cross-budget relations has not been achieved as regards education financing;

—constitutional guarantees of equal provision of budget services to all the Russian citizens regardless of their place of residence are not fulfilled.

Recently, the state authorities have redoubled their attention towards the education sphere, i.e. they annually increase the budget resources allocated for these objectives. The increased expenditures on education are distributed in equal proportions by education levels and by Russian Federation constituent entities. According to the Russian Constitution, all the Russian citizens have equal access to the budget service regardless of their place of residence. However, as regards education this last condition has not been met for many years.

One can contribute to solving the existing problems by changing over to normative financing of educational institutions. The radical change in the system of the education sphere financing is recognized as the basic principle of reforming this sphere's organizational and economic mechanism.

The concept of modernizing the Russian educational system for the period until 2010 envisages that the key elements in forming new effective mechanisms of education system development and financing should be:

—introduction of normative budget financing of general secondary and primary professional education providing for compliance with the state educational standards and necessary conditions of the education process;

—development of differential standards for budget financing of higher and (in the long term) secondary professional education institutions (organizations) reflecting the character of the implemented educational programs.

Transition to normative financing of education is also envisaged in other documents pertaining to modernization and reform of this sphere, i.e. in the Russian Government Action Plan targeting social policy and economy modernization for 2000–2010; the Federal Target Program for Education Development for 2006–2010; in the materials of the Public Council (March 24, 2006) devoted to the problems of education, etc.

Thus, at present normative per capita financing is recognized as one of the major tools of new financial-economic mechanism in the education sphere. Its main advantage is not financing an educational institution as

[1] Conceptual principles in the sphere of education modernization are elaborated in [1–3]. The issues of these conceptual principles implementation, i.e. normative financing of the education sphere, increasing the efficiency of its functioning, etc. are presented in [4–10]. It is necessary to perform forecasting of the education system development vector taking into account the labor market dynamics and needs. Analysis of these problems is conducted in [11, 12]. Development of the concepts of mid-term and long-term forecasting of budget system parameters at the level of the state and its implementation are contained in [13].)

an object but in providing an educational service. Financial authorities and government agencies need normative standards to conduct objective planning and "transparent" distribution of financial resources in the education sphere; the institutions need them for independent planning of their budgets and effective use of the allocated resources, which stimulates increase in the quality of the provided educational services.

There are various ways for development of financial standards for each educational level [10, 15, and 16]. Some of the techniques are already applied by individual constituent entities of the Russian Federation, for example, for financing general and primary professional education. The basic normative standard of higher professional education is to be introduced in 2009. In general, all the techniques use the traditional approach to calculate cost value, i.e. all the costs are divided in fixed (conditionally fixed) and variable (conditionally variable), or direct and indirect. This facilitates cost management providing for transparency of the cost formation process.

The normative approach to financing education has received recognition and legalization. However, normative standards for all the regions and education levels have not yet put to practice. The latter creates difficulties in planning the structure of the Russian consolidated budget expenditures and Russian Federation members consolidated budgets for education.

The presented below variant of prognostic assessment of the education sphere needs in the budget resources is based on the principle that the education system financed from the budget resources should provide for the Russia's economy needs in the staff of the respective qualifications as well as provide to all the citizens an equal access to budget services.

The technique of calculating the education sphere needs in the budget resources. The proposed technique contains a common for all the Federation entities' approach to financing every level of the education system and ensures transparency in cross-budget relations in financing education.

The above conceptual principles are implemented by means of using mean values of financing by education level as a single normative standard for prognostic assessment taking into account the index of budget expenditures (IBE) and number of students necessary to provide for the economy's needs in graduates of various levels of professional education. Under the current conditions (constitutional guarantees for equal rights approved parameters of the federal budget until 2010, absence of legally based social standards and financial normative standards), the mean value enables one to evaluate the amount of financing the budget system necessary for providing the economy with professional staff.

The concept of long-term socioeconomic development of the Russian Federation [17, 18] and retrospective analysis of the tendencies of education sphere budget financing [19] enable one to calculate the necessary amounts of the state financial resources for every educational level.

Fig. 1 presents an algorithm for calculating the education system's need for budget resources reflecting the basic stages of the proposed technique.

Brief description of the algorithm.

(1) Specification of the normative requirements of budget financing at all the levels of the budget system per student in Russia (4 education levels). As source data for 2001–2006 we use the Russian average indicators by actual data, for 2007–2010, —predictive indicators based on the three-year budget.

Note again that determining the normative standards by means of direct calculation by cost elements is an individual complex task. Further on, in legalization of the developed standards for every education level, the proposed technique enables one to replace the mean value of per capita financing by the set standard.

(2) Formulation of the normative requirements of budget financing by region per student for the four education levels. To do this, the normative requirements of budget financing in Russia are multiplied by IBE.

(3) Specification of the number of students based on the budget financing with the use of the cited student population indicator.

(4) Calculation of the necessary amounts of budget financing by region as the product of items (2) × (3) by 4 education levels: general education, primary professional education (PPE), secondary professional education (SPE), and higher professional education (HPE).

(5) Formation of the share coefficient matrix by Russian average proportions for 2006, distributing the budget resources by each of the 4 educational levels and three levels of the budget system (federal, regional, and municipal).

(6) Formation of the amount of the necessary budget resources for each of the 4 levels of the education system at the three levels of the budget system by constituent entity by means of multiplying the values obtained at stage (4) by matrix (5).

(7) On the basis of the database we form the actual distribution of the budget resources for each education level by three levels of the budget system for 2001–2006 by constituent entity.

(8) Construction of the balance between the necessary normative financing for the existing student population (6) and actual budget financing for 2001–2006. (7). As a result we form the balance table, showing the deficit (surplus) of budget financing resources for the regional education system by 4 education levels and three levels of the budgets in the retrospective period.

(9) Calculation of the number of students necessary to provide for the needs of the regional economy in qualified staff for 2001–2010.

(10) Formation of the necessary for the region volumes of budget financing for the education system from all the budget levels at the condition of providing for the economy's needs in the staff by four education levels for 2001–2006 by multiplying the values obtained at the stages (2) and (9).

(11) Construction of the balance between the volumes of the calculated normative financing for the student population to proved for the economy's needs in the staff (10) and actual financing for 2001–2006 (7). As a result, we form the balance table showing the deficit (surplus) of the budget financing resources for the education system by education and budget levels for the previous year budgets on the condition of providing for the economy's labor need.

(12) Construction of balance table between (10) and (8) for the predictive period 2007–2010 showing the difference in the financial resources which could have been received by the region on the condition of normative financing of the actual number of budget students (whose tuition is financed from the budget resources) and number of students needed to provide the economy's needs in the specialists.

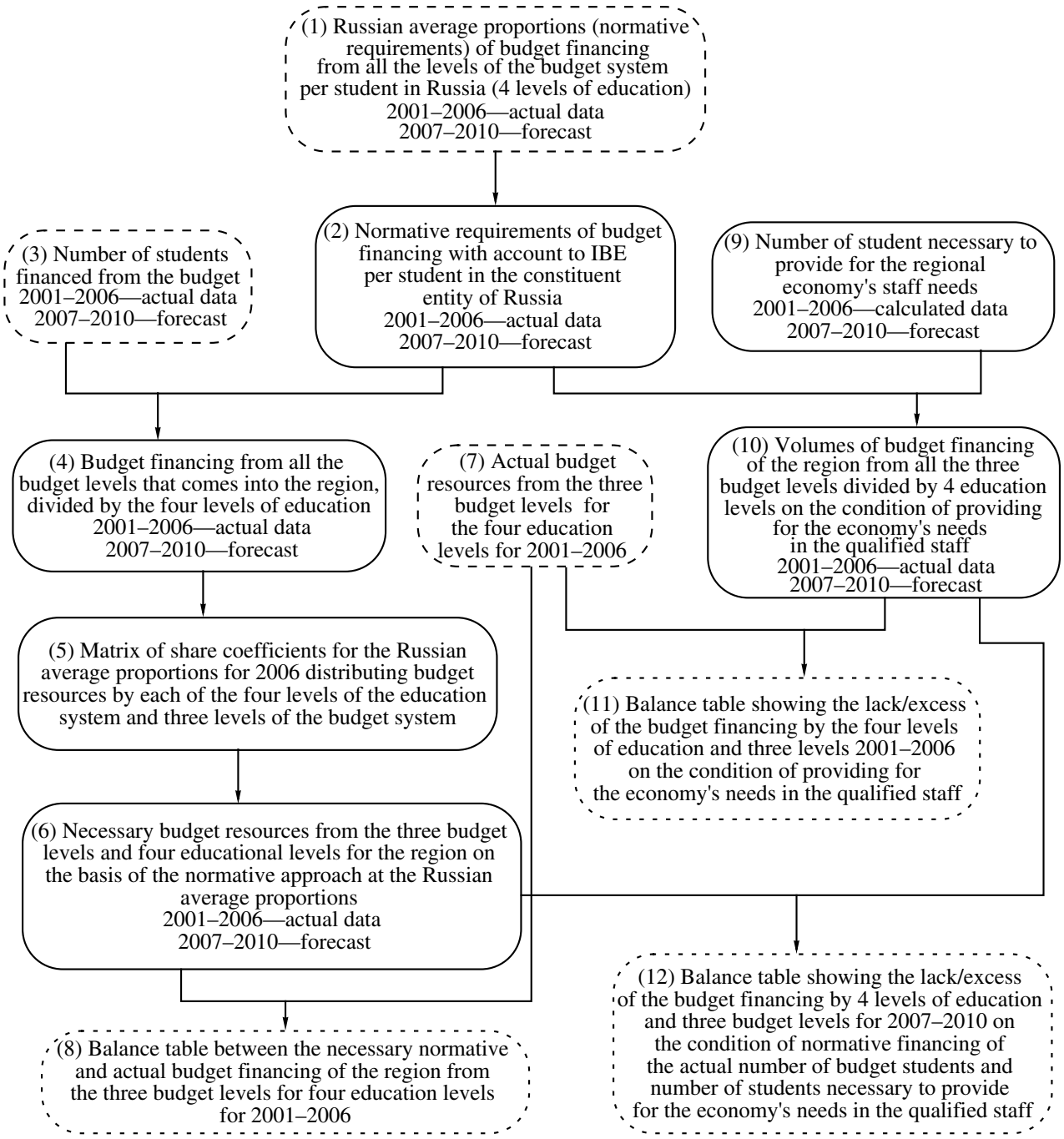

Fig. 1. Flow-chart of the algorithm for calculating the financial needs of the Russian education system.

In the absence of social and financial standards for the education system the developed algorithms and technique on its basis enable one to implement the norms of federal and regional legislation, which imply transition of the general and professional education to the per capita budget financing scheme in accordance with the principle: "budget money should follow the student". When financing students from the budget, the money goes to meet the needs, meanwhile financing of the educational institution enhances motivation to increasing its costs. In essence, in case of normative financing the student becomes the customer ordering educational services and educational institution is compelled to increase its competitiveness since leaving of even one student will necessarily be reflected in its budget.

Substantiation of the use of per capita financing across Russia at the core of the algorithm. The important parameter when implementing the calculation tech-

Table 1. Per capita financing by education level in Russia, thousand rubles

Education level	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010
General	5.40	7.40	13.70	18.50	23.60	33.20	41.60	40.90	42.80	46.90
Professional										
primary	8.00	10.70	18.40	22.20	30.80	37.00	46.50	48.30	50.40	52.90
secondary	6.40	8.90	14.90	18.80	27.10	35.10	42.30	44.40	46.80	50.40
higher	8.70	12.00	20.60	25.60	41.90	58.30	78.50	85.40	102.20	116.10

Table 2. Permanent number of Federation members financing level groups 2001–2006

Range of deviations of the calculated values from the Russian average	Russian Federation constituent entities								Total
	General education		PPE		SPE		HPE		
	units	%	units	%	units	%	units	%	
A	1	2	3	4	5	6	7	8	9
Lack of more than 50%	1	1.00	2	0.67	3	0.69	0	0.00	6
Lack of 11–50%	33	0.86	21	0.83	11	0.61	13	0.68	78
Deviation of the actual per capita financing from the Russian average level (±10%)	25	0.83	23	0.72	11	0.46	20	0.74	79
Excess over the Russian average values of 11–50%	6	0.59	10	0.57	24	0.88	18	0.75	58
Excess of more than 50%	3	0.90	2	0.55	4	0.67	5	0.63	14
Total: units	69	–	58	–	53	–	56	–	–
%	0.79	–	0.67	–	0.62	–	0.65	–	–

Note: In columns 2, 4, 6, and 8, the percentages represent the share from the average number in the group; in the line "total"—from the total number of constituent entities.

All the further calculations presented in the graphs were performed by the authors on the basis of the official data of the Federal Treasury.

nique is the average per capita, i.e. Russian average financing per student by education levels (Table 1) [20, 21].

Our research into the tendencies in the education sphere enables one to use the mean values of financing by education level in Russia and to perform on their basis the calculations for Federation members. To do this, one has performed calculations of per capita financing by all the education levels (general, primary, secondary, higher professional) for the period 2001–2006 by Federation member and, respectively, revealed the deviations in the calculated values from the Russia average. Further on, the constituent entities are grouped by the values of the deviation in the existing financing from the Russian average by each education level. On the basis of the data obtained, we have formed the final list of the constituent entities that in the period 2001–2006 remained every year in the same range of the financing level (Table 2).

The integral data in Table 2 show that, in general, the Russian education system is characterized in the retrospective period by stable distribution of state financial resources among the regions. Thus, from 53 constituent entities (62% of the total) in the SPE system to 69 (79% of all the regions) in the general education system permanently form a certain group in the budget provision. Stability of the singled out groups is also confirmed by the share of the permanent regions in each range, which amount to more than a half (from 0.55 to 0.90) of their total number.

Thus, analysis of the budget provision in the retrospective period shows that Federation members belong to certain stable groups distributed relative the Russian average level of education financing. At the same time, whilst there has been improvement in the education financing with time in absolute figures, then relative to the average level of financial resources distribution the situation has not changed. The regions that were financed substantially below the indicated parameter continue to receive insufficient amount of state resources. This also concerns the well provided for regions: their state does not change with time, i.e. their financing remains to be always high.

On can assert on the basis of the data obtained that the budget provision equalization policy in the education sphere conducted in Russia does not perform its functions and facilitate lowering of the existing dispro-

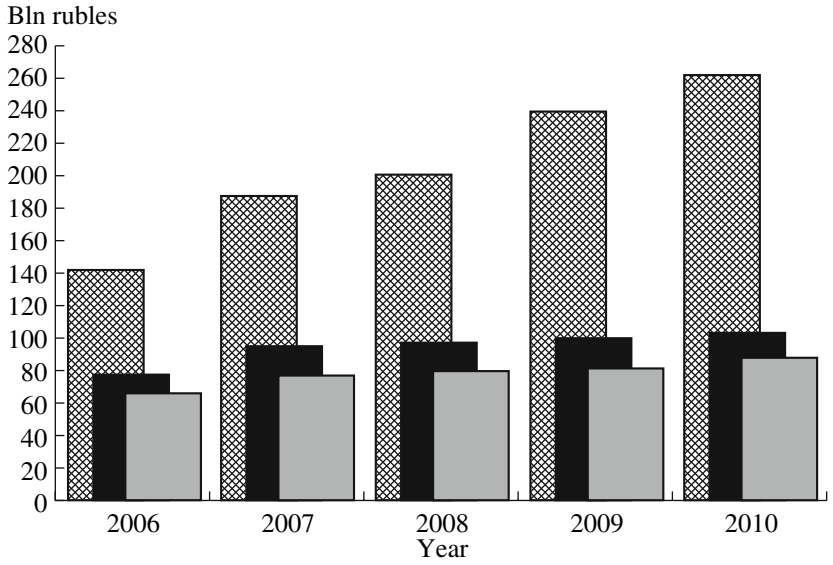

Fig. 2. Predictive estimation of the necessary amounts of the budget financing for the professional education system on the condition of providing for the Russian economy's need for trained labor under the three-year budget for 2008–2010: ⊠ HPE; ■ PPE; ▨ SPE

portions [22]. In view of the positive dynamics of state expenditures on education there have been no significant shifts in the regional distribution of financing level: the both well and poorly provided for regions have remained at their positions. Moreover, today the process of allocating the powers in the education sphere is already finished, and one does not expect any radical changes in the nearest years.

The above enables us to assert that the situation with financing education will not undergo any significant changes until 2010, which made it possible for the authors to use at the core of the algorithm the Russian average values of per capita expenditures.

Predictive amounts of education financing for the existing student population. The concept of Russia's long-term socioeconomic development (February 2008) cites the main parameters of the Russian economy development by the innovation path. The selected variant of development raises "high demands to the quality of the professional staff and education system, including the level of qualified workers training against the background of the increased demand for this personnel category, to the qualification of the graduates of the secondary and higher professional education system graduates, to their capacity and readiness to lifelong learning and ensuring this opportunity within the framework of the national education system" [17].

In view of the placed high demands to the education sphere one needs to increase public investments into this sphere, which is possible in case of implementing the innovation variant of the Russian economy development. According to the Concept of Russia long-term development the general expenditures on education will increase from 4.6% GDP (2006–2007) to 5.5% GDP in 2020 (and 6% GDP in 2030), including the budget system expenditures—from 3.9 to 4.5% GDP; the growth rate of state investments in the period of 2008–2010 will be 12–16%, and no less than 10% in 2020. For comparison, according to the Rosstat (Russian Statistical Agency) data, at present the state expenditures on education amount in Germany to 4.8% GDP, the United Kingdom—5.3, France—5.6, the United States—5.6, and on average among the G8 countries (without Russia)—5.0% GDP.

Taking into account the expenditures per student until 2010, and the fact that the state order on preparing the students will remain in the midterm period at the same level (the fluctuations may amount to ±5%), one can calculate the necessary amount of normative financing into the education sphere formed from all the levels of the budget system for 2007–2010. According to the accepted normative approach to financing education, the budget resources are distributed across the levels of the budget system as follows (Table 3).

Thus, the amounts of financing are growing, and each education level will be financed mainly from one level of the budget system.

For each constituent entity of the Russian Federation the amounts of expenditure will also grow. The noted growth will take place in different proportions, however, it will provide for equal financing of the budget services in the education sphere taking amount the costs of their provision in each region. As we noted above, the latter was made possible through the use of IBE. For example, in 2007–2010 the financing of the HPE system will be distributed among the constituent entities as follows (Fig. 2). Note that the student population by Russian region is distributed extremely inhomogeneously; its detailed distribution is given in [12].

Table 3. Education system financing from at all the levels of the Russian budget system until 2010

Survey level (year)	Federal budget resources	Russian consolidated budget			All budget levels
		Budget resources of constituent entity	Budget resources of cities and districts	Total	
General					
2007	5862.5	123113.1	457277.1	580390.1	586252.7
2008	5770.3	121175.2	450079.5	571254.7	577024.9
2009	6024.6	126516.4	469917.9	596434.2	602458.8
2010	6581.9	138220.7	513391.2	651612.0	658193.9
PPE					
2007	9190.1	50239.0	1838.0	52077.0	61267.0
2008	9541.5	52160.2	1908.3	54068.5	63610.0
2009	9926.8	54266.7	1985.4	56252.1	66178.9
2010	10404.9	56880.3	2081.0	58961.3	69366.2
SPE					
2007	22605.0	48035.7	1130.3	33907.6	56512.6
2008	23731.8	50430.1	1186.6	35597.7	59329.6
2009	25038.5	53206.9	1251.9	37557.8	62596.4
2010	26940.5	57248.5	1347.0	40410.7	67351.2
HPE					
2007	169426.0	8917.2	0	8917.2	178343.1
2008	184667.4	9719.3	0	9719.3	194386.8
2009	221749.1	11671.0	0	11671.0	233420.1
2010	251843.0	13254.9	0	13254.9	265097.9

In the forthcoming period, the most part of the HPE system will go into the constituent entities, such as Mosow, St. Petersburg, Sakha Republic (Yakutia), Krasnoyarsk krai, and Rostov oblast, and the smallest amounts, to Leningrad oblast and all the autonomous districts (Table 4).

Predictive amounts of financing proving for the economy's needs in qualified staff. The professional education system financed from the state budget funds is to provide for the economy's needs in the qualified staff. [2] In view of the above it is interesting to assess the needs in budget resources necessary for the regional systems of professional education to perform this function.

To calculate the student population necessary to meet the economy's need for skilled labor the most adequate tool is a macroeconomic model [24, 25].

The technique is based on the normative approach unified for all the Russian regions based on the forecast of the economy growth rates and investment by types of economic activity and necessary to achieve these planned figures of labor resource quantity. At the same time, the forecast of the annual average employment is calculated taking into account the forecast of the goods and services output (GRP), state of the fixed assets, investment, labor productivity, etc.

To determine the yearly need of the economy in the qualified staff the annual average employment is structured by education levels and types of economic activity taking into account the share of the annual staff renewal. At the last stage the yearly needs in the qualified staff are itemized by consolidated specialty groups using matrices of professional-qualification correspondences.

The economy's needs in the staff are provided for by means of student preparation. To calculate the student population needs for the year $i + 1$ taking into account the labor market needs in the qualified staff, the student population of the year i is added to the population predicted for the year $i + 1$ minus the predicted number of graduates of the year i.

On the basis of the macroeconomic model we made predictive calculations of the student population providing for the economy's needs. Then we calculated the amounts of financial resources taking into account the

[2] This was noted, in particular, in the Russian President's Message to the Federal Assembly on May 26, 2004: "…the effectiveness of the education reform should be measured today by the indicators of education quality, its accessibility and conformity to the labor market needs" [23].

Table 4. Regional distribution of predictive financing of the HPE system 2007 to 2010 on the normative calculation basis, mln rubles

Russian Federation constituent entity	2007	2008	2009	2010	Total
A	1	2	3	4	5
Moscow	26122.7	29038.0	34787.4	39476.7	129424.7
St. Petersburg	10903.0	12069.2	14443.5	16407.9	53823.6
Sakha (Yakutia), Republic of	6356.0	6991.3	8377.9	9517.4	31242.6
Krasnoyarsk krai	5389.4	5750.6	7389.4	8388.5	26918.0
Rostov oblast	5316.3	5811.4	6954.6	7900.5	25982.7
Tatarstan, Republic of	4139.4	4580.6	5488.3	6227.2	20435.5
Sverdlovsk oblast	4106.1	4456.7	5333.4	6058.8	19955.0
Irkutsk oblast	3781.7	4040.8	4839.7	5552.3	18214.5
Primorskii krai	3734.8	4066.5	4870.4	5532.9	18204.6
Tomsk oblast	3790.0	4029.5	4825.7	5482.1	18127.3
Bashkortostan, Republic of	3562.1	3900.6	4667.9	5302.8	17433.4
Nizhni Novgorod oblast	3551.8	3855.2	4618.9	5247.1	17273.0
Novosibirsk oblast	3455.0	3873.2	4640.0	5265.5	17233.8
Samara oblast	3480.0	3817.3	4568.3	5189.6	17055.1
Tyumen oblast	3348.7	3610.7	4323.8	4911.9	16195.0
Khabarovsk krai	3111.6	3295.1	3948.2	4485.2	14840.1
Chelyabinsk oblast	3004.7	3287.6	3938.9	4474.6	14705.9
Krasnodar krai	3046.1	3200.9	3830.6	4351.6	14429.3
Omsk oblast	2811.0	3099.9	3713.9	4219.0	13843.8
Saratov oblast	2822.1	3066.5	3674.2	4168.8	13731.5
Voronezh oblast	2759.4	2962.8	3545.6	4027.9	13295.8
Dagestan, Republic of	2759.4	2938.4	3520.6	3999.5	13217.9
Kemerovo oblast	2643.2	2828.8	3389.1	3850.0	12711.1
Altai krai	2666.8	2814.8	3368.5	3826.7	12676.7
Volgograd oblast	2591.6	2802.2	3353.4	3809.5	12556.7
Moscow oblast	2483.0	2748.3	3288.9	3736.2	12256.4
Stavropol krai	2563.4	2724.2	3263.9	3703.4	12254.9
Perm krai	2310.3	2478.8	3039.7	3453.1	11281.9
Orenburg oblast	2204.4	2430.7	2912.0	3308.1	10855.2
Arkhangelsk oblast	1946.1	2035.1	2437.0	2768.5	9186.7
Buryatia, Republic of	1822.8	1935.3	2317.5	2631.0	8706.6
Udmurt Republic	1691.6	1825.8	2187.5	2482.2	8187.1
Ivanovo oblast	1652.3	1805.8	2161.1	2455.0	8074.2
Komi, Republic of	1612.3	1749.5	2095.0	2379.9	7836.6
Amur oblast	1584.9	1729.0	2071.9	2352.1	7737.9
Penza oblast	1629.8	1717.4	2055.3	2334.8	7737.3
Orlov oblast	1437.0	1573.7	1883.3	2139.4	7033.4
Yaroslavl oblast	1378.2	1508.2	1804.9	2050.3	6741.5
Vologda oblast	1308.9	1467.1	1757.5	1994.5	6528.0
Kursk oblast	1322.8	1421.7	1701.4	1932.8	6378.8
Ryazan oblast	1304.2	1414.1	1692.3	1922.5	6333.2
Tambov oblast	1280.0	1412.0	1689.7	1919.6	6301.3
Tula oblast	1281.0	1392.0	1665.8	1892.4	6231.2

Table 4. (Contd.)

Russian Federation constituent entity	2007	2008	2009	2010	Total
A	1	2	3	4	5
Ulyanovsk oblast	1238.8	1342.7	1608.8	1825.3	6015.6
Vladimir oblast	1217.9	1317.2	1576.4	1790.8	5902.3
Belgorod oblast	1197.8	1312.6	1570.8	1784.5	5865.7
Chuvash Republic	1193.1	1293.4	1547.9	1758.4	5792.9
Tver oblast	1178.1	1280.3	1532.1	1740.5	5731.0
Mordovia, Republic of	1161.7	1252.2	1500.3	1704.3	5618.5
North Ossetia-Alania, Republic of	1137.5	1257.2	1506.3	1711.2	5612.3
Chita oblast	1154.2	1213.1	1452.9	1649.2	5469.4
Bryansk oblast	1080.6	1182.3	1414.9	1607.4	5285.3
Kirov oblast	1073.5	1176.7	1408.2	1599.7	5258.0
Murmansk oblast	1076.4	1159.2	1388.1	1576.9	5200.5
Magadan oblast	948.9	1126.8	1351.6	1535.4	4962.7
Lipetsk oblast	1003.6	1087.9	1303.5	1479.0	4874.0
Karelia, Republic of	976.6	1046.4	1253.2	1423.6	4699.8
Kurgan oblast	911.7	984.8	1178.5	1338.8	4413.7
Kabardino-Balkariya Republic	859.5	927.9	1110.4	1261.5	4159.3
Smolensk oblast	816.7	885.5	1060.9	1205.2	3968.3
Kaliningrad oblast	812.9	882.4	1056.0	1199.6	3950.9
Kostroma oblast	817.7	875.5	1047.8	1190.3	3931.2
Marii El, Republic of	803.1	863.6	1033.5	1174.1	3874.3
Kaluga oblast	770.1	848.3	1016.3	1154.5	3789.1
Kamchatka oblast	697.4	784.2	1022.4	1161.0	3665.0
Adygeia, Republic of	729.9	804.3	963.6	1094.7	3592.6
Novgorod oblast	675.8	734.4	879.8	998.5	3288.5
Astrakhan oblast	670.9	723.5	865.8	983.6	3243.7
Pskov oblast	589.2	643.7	770.3	875.1	2878.3
Karachai-Cherkessian Republic	543.6	587.5	703.1	798.7	2632.8
Tyva, Republic of	476.5	603.4	723.1	821.1	2624.1
Altai Republic	555.3	579.4	694.1	788.5	2617.3
Sakhalin oblast	543.9	570.1	682.6	775.4	2572.0
Khakassia, Republic of	377.8	410.2	490.9	557.7	1836.7
Kalmykia, Republic of	329.6	354.4	424.6	482.3	1590.8
Ingushetia, Republic of	300.4	312.6	374.0	424.9	1411.9
Leningrad oblast	172.1	188.6	225.9	256.6	843.2
Jewish Autonomous Oblast	168.8	176.5	211.4	240.2	796.9
Russian Federation	178343.1	194386.8	233420.1	265097.9	871248.0

economy's needs in the qualified staff for different levels of education by constituent entity within the framework of the three-year budget for 2008–2010.

The results of the calculations for the Russian Federation are presented in Fig. 2.

To evaluate the current situation Fig. 3 shows the volumes of actual financing of HPE in 2006 and required financial resources according to the developed model. As we see, there is a lack of provided resources and "over-expenditure" in the HPE sphere on the condition of providing for the economy's needs in the qualified staff as well as at the existing budget constraints. Considerable underfinancing of the HPE sphere is experienced by Russian Federation members, such as

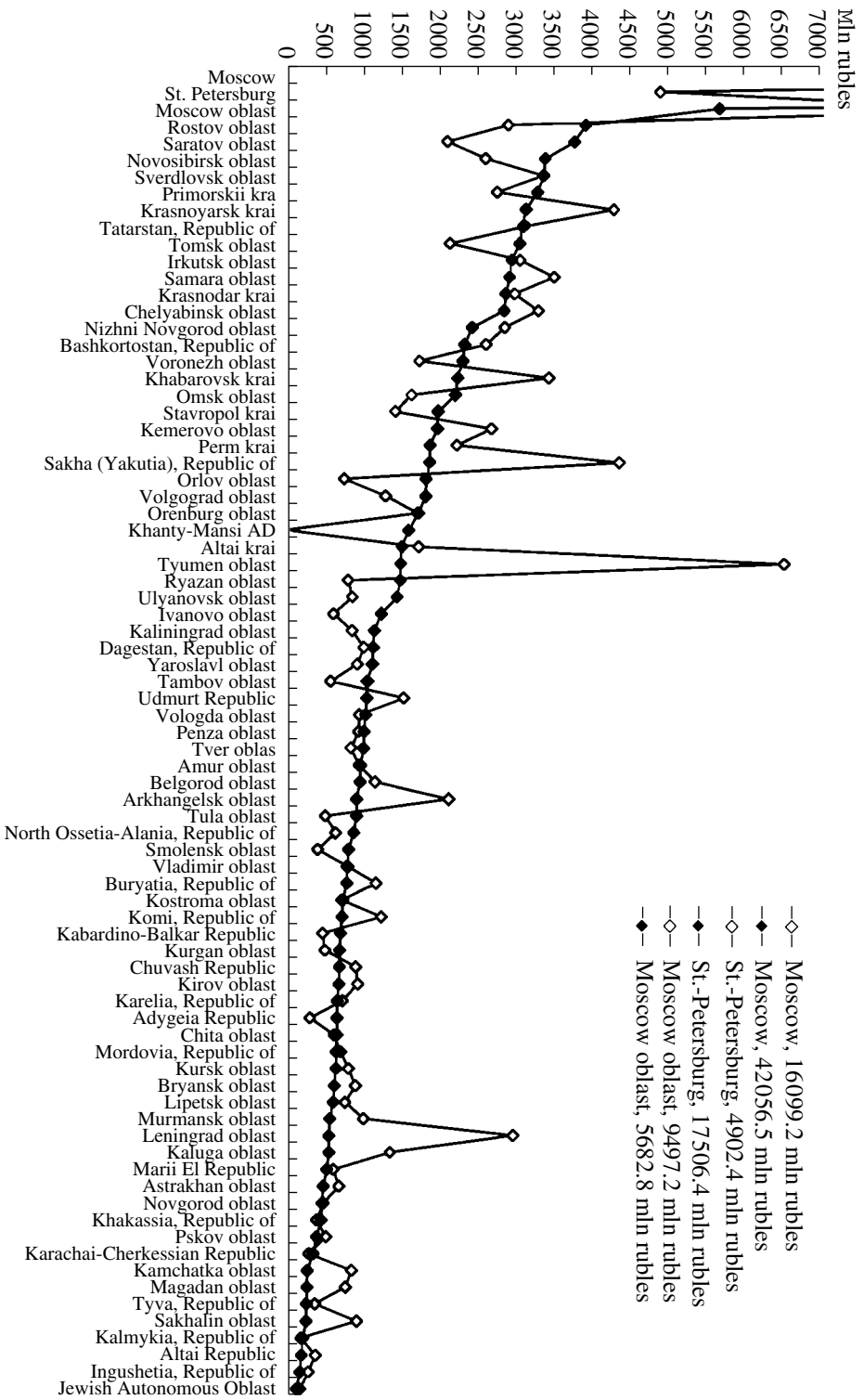

Fig. 3. Comparative budget expenditure on HPE in Russian Federation constituent entities 2006.

Tyumen oblast, Sakha Republic (Yakutia), Leningrad oblast, and Moscow oblast. The economy's needs are "overfinanced" in the following regions: Moscow, St. Petersburg, Rostov oblast, and the Khanty-Mansi Autonomous District.

Comparison of the predictive volumes of financing by the actual number of students and economy's needs in the qualified staff. In the absence of social standards and legally set financial normative standards for the system of general and professional education

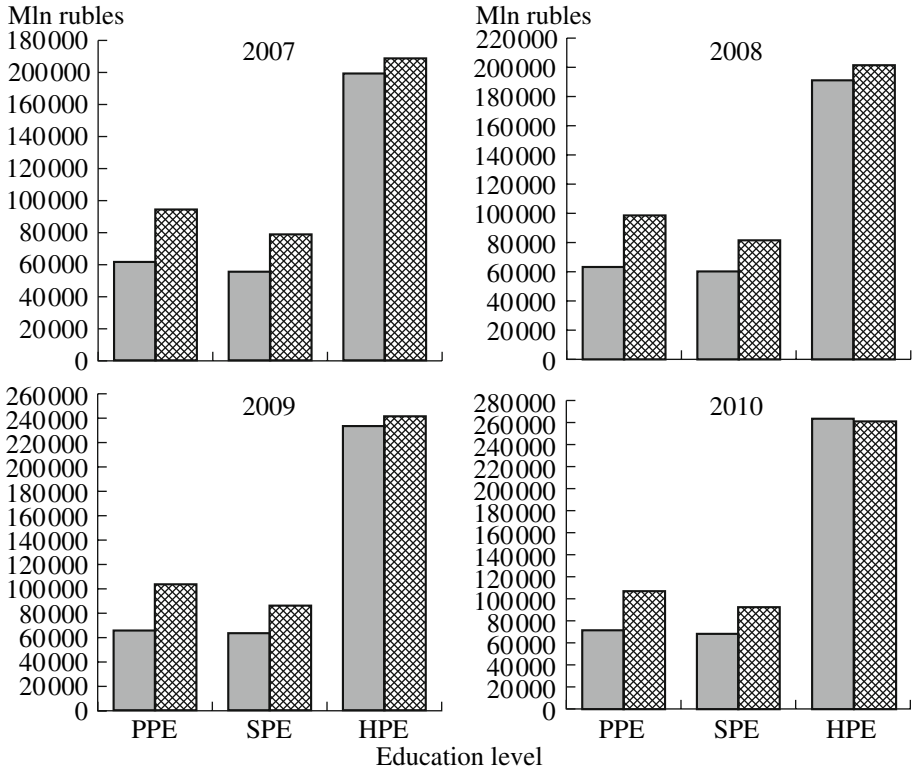

Fig. 4. Financial expenditure on education 2007–2010 under normative financing.

both on the federal and regional level, the developed technique enables one to determine the necessary amount of financial resources formed from all the levels of the budget system for 2007–2010 based on the Russian average value of financing, taking into account IBE for two variants of student population.

In the first variant the required sum of financial resources was determined as the product of financial standard multiplied by the actual number of budget students. In the second variant, based on the macroeconomic forecast of the economy's need for trained labor, the amount of financial resources was calculated for the respective student population.

Comparison of the results of the two approaches to calculating the budget financing for Russia in general for the period 2007–2010 is shown in Fig. 4

Analogous calculations on the basis of normative financing performed for all the regions and Russia in general, reveal insufficiency of the existing volumes of financial resources for the education sphere and provision of the economy's need for labor of relevant qualifications. For example, the predictive assessment for 2010 shows that by the second variant for Russia in general there is a need to increase financing to PPE by 35.4 bln rubles, SPE—by 23.8 bln rubles In the sphere of HPE, there will be "excessive" financing in the amount of 1.7 bln rubles In general, by expenditures of the budget system on the sphere of professional education one needs another 57.4 bln rubles to meet the economy's need for skilled labor. staff.

Thus, comparison of the two variants of calculations has shown that financing the number of students to ensure the economy's needs more budget resources that for students (which is envisaged by the Constitutional regulations). However, retaining the traditional principles of financing (by actual population) and "saving" the budget resources one cannot achieve their effective spending: "overproduction" of specialists not demanded for by the market will continue on increased scale and the developing economy will be left without the needed qualified staff.

* * *

Thus, analysis of the situation in the education financing sphere has shown the general inertia of the system. The long-lasting reforms of this sphere have not led to any significant changes or breaking of the existing tendencies. At the same time, the budget reforms requires new financing mechanism, increasing effectiveness of the budget resource spending, achieving specific results of education activity in the interests of the country's social and economic development.

As an instrument of planning the government expenditures in the education sphere to meet the market needs in the qualified staff the authors have proposed the respective technique. It enables one to evaluate the existing tendencies in financing the education levels in

all the constituent entities of Russia as well as conduct calculations of the predictive needs of the education sphere in financing within the framework of the three-year budget for 2008–2010. The proposed scheme of normative financing calculations enables one to partially solve the structural tasks in the education sphere set by the Concept of long-term socioeconomic development of Russia until 2020, namely, "increasing effectiveness of the mechanisms to compensate for the lack of budget resources in the grant-receiving regions providing for equalization of resource provision of the secondary (complete) general, primary professional, and secondary professional education."

The developed technique for determining the predictive financing need of the education sphere has the following benefits:

—preserving the common educational space in the Russian Federation on the basis of the common approach to determining the normative standards;

—providing for the economy's needs in the qualified staff in the needed volume;

—possibility of assessment (comparison) of the budgetary resources levels per student by education levels;

—possibility of defining the percentage ratios of the expenditures by levels of the budget system for each education level;

—taking into account regional differences in the costs of providing budget services when forming the normative standard of financing;

—existence of scientific prognoses and mathematical calculations preceding managerial decision-making.

The conducted predictive calculations give one the possibility to adjust the distribution of budget resources for the Russian education system in general as well as by particular levels of the education system and by regions. The well-timed managerial decision enable one not only to provide the citizens with an equal access to equal (no less that the specified level) budget services, and conduct rightful distribution of financial assistance to the regions within the framework of the Regions Financial Support Fund.

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