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The Financing of Georgian Education

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Abstract

We analyze Georgian education finance and show that it is embedded in the overall structure of Georgian rayon finances, reflecting all their weaknesses: inequalities, lack of transparency, unmanageability, room for corruption. The budgetary and political independence of rayons is very limited. The steep fiscal inequalities between rayons are only partially and ineffectively addressed by the system of transfers. The transfers moreover are heavily negotiated and non-transparent.

Thus education finances depend on general income of the rayons, which effectively determines the level of financing. At the same time, however, the role of the rayons in the management of the sector is very limited.

The actual spending patterns for Georgian general education schools are very closely related to per capita income of the rayons without the transfers (about 75% of education spending), and to student teacher ratio (about 25% of education spending). The dependence of the education system on rayon wealth is our main empirical finding, and it contradicts widespread belief among Georgian education professionals.

It is not surprising therefore that the education sector in poorer and in mountainous rayons with very low student teacher ratio has to adapt to this situation. It responds by reducing the number of teachers per class, thus lowering standards of service delivery despite high per student costs.

The first step required to change this situation is to increase budgetary independence and education management role of rayons. Without strong local governments it will not be possible to decentralize Georgian education. Moreover the influence of fiscal inequalities on education finance should be broken by taking it out of general rayon income and by basing it on a per student education grant to rayons (education subvention). This would lead to significant redistribution of public funds in Georgia.

Such a move needs to be carefully prepared. It is necessary to subject education subvention to buffer mechanisms, in order to protect rayons from drastic changes to their present education spending patterns. Moreover, Georgia should begin thinking about a per student formula for education subvention, which recognizes unavoidable higher per student costs of providing education in different geographical and social settings.

1. Introduction[1]

Georgia emerged from the collapse of the Soviet Union and subsequent internal wars with large parts of the country beyond effective control of the central government, with significant informal economy, and widespread corruption[2]. At the same time, it was able to create democratic institutions, preserve the freedom of the press and enhance human rights, and cope with large numbers of internal refugees[3]. It is nevertheless clear that despite these successes Georgia urgently needs more stable economic policies, more transparent administration at all levels, and better schooling.

Those needs are well understood by the international community, which supports a number of projects aimed at helping the Government of Georgia. The goals of these projects are to build a long-term strategy of economic development, to design and implement a fiscal reform (including a new budget code), and to put in place structural economic reform (privatization of state enterprises, development of small businesses, financing of the private sector). The fiscal reform envisaged also includes decentralization of public finances, and a new structure of intergovernmental transfers. In this area education budget is extremely important for at least three reasons.

The first is the sheer size of education expenditures, which comprise over 33% percent of consolidated local budget expenditures[4] (and 47% if Tbilisi is not included). There are some rayons in which education accounts for more than 70% of budgets. This means that clear definition of the roles and financial responsibilities of different levels of public authorities in Georgia will affect a large proportion of public finances, while a failure to contain the spending irregularities and inefficiencies may put the whole reform at risk.

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[1] This report was written in September 2001 during a visit to Tbilisi, organized by CASE Warsaw and CASE Transcaucasus, as part of the project "Support of Economic Reforms in Georgia" financed by OSI, Budapest. I am very grateful for the staff of CASE Transcaucasus, most notably Tamaz Asatiani and Georgi Kavelashvili, for many helpful discussions. Professor Golinowska helped me prepare my visit to Georgia. The report is also based on a number of interviews conducted during my stay in Georgia, listed in Appendix G. Anthony Levitas and Sergo Durglishvili read earlier versions of the report and contributed very useful critical remarks.

[2] See UNDP human development reports on Georgia, UNDP 1999 and UNDP 2000.

[3] See however Amnesty International 2001 and Human Rights Watch 2001 for recent reports about human rights violations in Georgia.

[4] See Table 4.

The second reason is that education is politically a very sensitive issue, and will become ever more so as Georgia stabilizes its economic situation. The arrears in teacher pay have a potential of serious disruption in the future and to further exacerbate existing inequalities between regions. Moreover, the specific problems of Georgian education, among them a gradual disappearance of vocational education, difficulties of providing reasonable education in the mountains and almost complete lack of monitoring of schools, have to be addressed by well informed and competent authorities willing to take necessary, but potentially divisive decisions.

And thirdly, the present system of recurrent shortages of funds and constant negotiations for additional transfers[5], particularly relating to education finances, puts the Ministry of Finance at a disadvantaged position in any efforts to streamline and rationalize public finances. As long as the Ministry of Finance is seen as a rich uncle (or maybe the only uncle with some disposable money), and is daily confronted with new demands for resources, it will find it difficult to become the architect and arbitrator of general rules valid in equal measure for all the interested parties.

Another reason of interest in the financing of education in Georgia is the recently approved major World Bank loan for Education System Realignment and Strengthening Program[6]. The program identifies a number of issues facing Georgian education, among them new financing formulas (subcomponent B1 of Development of Policy Capacity). It is quite clear that the major goals of the World Bank program (such as development of new national curricula, of assessment and examination systems, professional development of teachers, provision of quality textbooks etc.) can only be efficiently achieved if the financing mechanisms become more functional and transparent.

It is in this context that a study of the way Georgian education is financed was undertaken and conducted. We tried to identify the key players in the education budgeting process and their roles in the sector. We talked to the Ministry of Education and Ministry of Finance, to the regional, rayon and city officials involved in education management and financing, and to school directors. In the report, we analyze fiscal inequalities between rayons and the effects they have on education finance. We argue that the fiscal inequalities are not addressed by an appropriate equalization program. On the basis of our analysis, we suggest a possible direction for reforming education finance within

[5] See Table 2.

[6] See World Bank 2001.

Georgian local government finance, in which general income of the rayons (primarily shared taxes) are partially replaced by grants for education based on student enrollment. We strongly believe that some such mechanism is necessary if Georgia is to begin to reduce the present unacceptable differences between the rayons. It would lead to very significant repercussions for the whole local finance system in Georgia, and cannot be introduced without some phase-in period and buffer mechanisms. It is also inconceivable that such a reform can be undertaken without an overall attempt to rationalize the public finance system of Georgia.

The plan of the report is as follows. We begin by describing the complex issues of local government finance in Georgia in Section 2. We then provide an overview of the Georgian general education system in Section 3, with emphasis on issues relevant for education finance. The analysis of education spending patterns is given in Section 4. In the fifth section we discuss the proposal to put education finance in Georgia on a per student basis. In Section 6 we discuss the political context of proposed reform of education finance. We list our conclusions and recommendations in the final section. A number of issues are relegated to Appendices.

2. Overview of Georgian Local Government Finance

Georgia is a federal country, consisting of two autonomous republics Abkhasia and Ajara, and 12 regions divided further into rayons. Abkhasia is beyond the effective control of Georgian government, as is the region of South Osetia. Neither of these areas can be discussed in the present report. Ajara enjoys remarkable degree of independence, as a result of which the financial relations between Batumi (the capital of Ajara) and Tbilisi are strained, and available financial and statistical data scarce or unreliable. Therefore no firm conclusions for Ajara republic can be made, and we have to treat this autonomous republic as a single entity, even though it is in fact divided into 5 rayons. The 12 regions are largely administrative, without significant communal functions or budgets assigned to them. The capital city Tbilisi, with about one fourth of Georgian population, is a separate entity, outside of the regional structure[7]. Thus our

[7] Tbilisi is itself divided into rayons, for which we however have neither financial nor school data.

analysis involves Tbilisi and 10 regions (without Abkhasia and South Osetia), or Tbilisi, Ajara and 58 rayons, as described in the following Table 1.

Table 1. Population, refugees, urbanization rates by region

	population	refugees	rayons	urbanization
Tbilisi	1 186.0	90.5	1	99.99%
Ajara	366.6	8.4	5	47.85%
Guria	143.7	0.6	3	31.04%
Racha-Lechkhumi & Kvemo Svaneti	50.7	1.9	4	25.05%
Samegrelo Zemo Svaneti	491.4	118.1	9	42.63%
Imereti	743.0	35.9	12	57.04%
Kakheti	400.4	1.3	8	24.50%
Mtskheta-Mtianeti	126.1	1.2	5	31.40%
Samckhe-Djavakheti	214.5	3.1	6	38.55%
Kvemo Kartli	547.3	11.5	7	45.26%
Shida Kartli	334.5	9.6	4	42.42%
Georgia	4 604.2	282.1	64	57.81%

There is some disagreement as to the population counts of Georgia as a whole and of its constituent parts[8]. Indeed, the census has not been conducted for many years now, there were major movements of people following the internal armed conflicts, and a massive though not well documented emigration, largely to Russia, which have made existing statistics completely unreliable. It is estimated that there are about 280 thousand refugees (internally displaced persons) in Georgia, of which 200 thousand from Abkhasia and 80 thousand from South Osetia[9]. The number of unregistered emigrants is estimated to be about 800 thousand that is about 20% of the total population. Table 1 based on data from State Department for Statistics of Georgia gives the estimates of Georgian population by regions, used in the present report, together with the

[8] See for instance State Department of Statistics of Georgia 2000, and Tsuladze, Maglaperidze 2000.

[9] We had not seen independent reports on the scholarization rates for IDP's, and been repeatedly told that essentially all refugee children attend schools. It seems however that sometimes the refugee students are concentrated in particular schools, and there are some schools exclusively for the refugees. This issue should be carefully analyzed, but lies outside the scope of the present report.

number of refugees (in thousand), the number of rayons and regional urbanization rate. The average size of a Georgian rayon outside of Tbilisi is 54 thousand inhabitants.

The regions have been introduced into the Georgian system in 2001, and they are not yet well established[10]. They have very limited staff and no own budgets. The personnel are appointed in Tbilisi, the Governor by the President, the heads of departments by respective ministers. Thus the head of a regional education department is appointed by the Minister of Education and is on the Ministry's payroll. It may be the case that the role of the regions will expand with the structural reform of Georgia, which may include the disappearance of the rayons, but presently it is restricted to liaison between the central government and the rayons (and the individual schools as well).

The rayons are the main level of local government in Georgia. The council (gamgeoba) is elected, but the officials are appointed by Tbilisi[11]. The rayon chief executive, gamgebeli, is appointed by the President, and heads of departments are appointed by respective ministers on gamgebeli's recommendation. Thus the head of education department at rayon level is appointed by the Minister of Education, and reports both to him and to gamgebeli. This double reporting lines mean that heads of rayon departments see themselves more part of the Ministry than of the local government. Indeed, as recently as three years ago, the heads of the rayon financial department were on the payroll of the Ministry of Finance (presently of the rayon). Some feel that since the changeover, their position in the rayon has weakened considerably.

The income of the rayons consists of the 85% share of PIT and CIT, and of 100% of a number of local taxes, of which the most important ones are the land tax and the property tax. Among the non-tax income the most important categories are the transfers (discussed in greater detail below) and the industrial land sale and lease revenue (about 3% of consolidated rayon budgets). The following table shows the income data of the rayons aggregated by region, for major income categories[12], for FY 2000.

[10] The following discussion owes much to the staff of Urban Institute, Georgia, who have provided me with the still unfinished copy of their major report, Urban Institute 2001, and with whom I had the chance to discuss the issues raised in this report.

[11] A local government reform in currently under way in Georgia will change this somewhat, see below the description of sakrebulo.

[12] Actual income, not budget plans. These data have been obtained from the Ministry of Finance. In Appendix A we describe some problems related to these data and how we resolved them.

Table 2. Rayon revenues by category (thousand Lari[13])

	PIT	CIT	transfers	land	property	revenues
Tbilisi	46 946	23 243	2 000	3 211	15 116	128 433
Ajara	10 630	9 634	0	1 479	1 363	52 951
Guria	462	103	1 653	604	202	3 941
Racha-Lechkhumi & Kvemo Svaneti	262	71	1 657	159	35	2 820
Samegrelo Zemo Svaneti	3 320	2 287	4 404	2 096	1 390	18 483
Imereti	4 818	1 722	5 225	3 124	2 334	27 420
Kakheti	1 834	360	2 366	3 237	755	13 782
Mtskheta-Mtianeti	1 296	672	1 955	653	746	7 242
Samckhe-Djavakheti	880	169	2 177	1 455	337	7 088
Kvemo Kartli	4 412	1 167	1 085	3 453	1 556	20 630
Shida Kartli	1 598	740	1 884	1 920	775	9 078
Georgia	76 458	40 167	24 407	21 391	24 609	291 868

Special note must be made of transfers. These are additional grants from the central budget to the rayons, individually negotiated between the Ministry of Finance and the interested rayon, which are supposed to cover the gap between the planned revenues and planned expenditures for the fiscal year. These individual negotiations seriously undermine the transparency and objectiveness of the budgeting process in Georgia, as they leave much room for corruption. In practice, although the transfers provide only 8% of all rayon revenue (and 12% of revenues of all rayons without Tbilisi), they are considered crucial for education, as most of the arguments relating to the distribution of transfer funds between the rayons concern education. Nevertheless transfers belong to general rayon income and can be used for any budgetary purpose.

We should note that although Tbilisi accounts for 44% of all rayon revenues, it collects over 61% of PIT shares and property taxes, and nearly 58% of CIT shares. Of interest is also the revenue structure. Indeed, in Tbilisi PIT and CIT contribute over 54% of revenues, while in Racha-Lechkhumi only 11%. On the other hand, transfers are insignificant for Tbilisi and Ajara, but account for over 58% of Racha-Lechkhumi revenues, and 42% in Guria. For rayons, the variation is even more significant; there are 7 rayons with transfers above 60% of all rayon revenues.

[13] Lari is about one half US dollar.

A better insight into rayon revenues is obtained by considering per capita income, as displayed in the following Table.

Table 3. Per capita rayon revenues by category (Lari)

	PIT	CIT	transfers	land	property	revenues
Tbilisi	39.58	19.60	1.69	2.71	12.74	108.29
Ajara	29.00	26.28	0.00	4.03	3.72	144.44
Guria	3.22	0.72	11.50	4.21	1.41	27.43
Racha-Lechkhumi & Kv. Sv.	5.17	1.39	32.68	3.14	0.69	55.62
Samegrelo Zemo Svaneti	6.76	4.65	8.96	4.26	2.83	37.61
Imereti	6.48	2.32	7.03	4.20	3.14	36.90
Kakheti	4.58	0.90	5.91	8.09	1.89	34.42
Mtskheta-Mtianeti	10.28	5.33	15.51	5.18	5.92	57.43
Samckhe-Djavakheti	4.10	0.79	10.15	6.78	1.57	33.04
Kvemo Kartli	8.06	2.13	1.98	6.31	2.84	37.69
Shida Kartli	4.78	2.21	5.63	5.74	2.32	27.14
Georgia	16.61	8.72	5.30	4.65	5.34	63.39

The richest rayon is the city of Poti in Samegrelo region (per capita revenues over 164 Lari), the poorest is Zugdidi in the same region (under 18 Lari), with over nine-fold difference. Table 3 demonstrates that per capita rayon income is not a good measure of the rayon wealth, as it is heavily distorted by transfers. The best available measure of wealth and registered economic activity would probably be per capita PIT and CIT shares. On this measure, Tbilisi is about 15 times richer than Guria.

This level of fiscal inequality should be addressed by some direct equalization program. No such official dedicated program exists in Georgian local finances. Nevertheless, we can see from Table 3 that this role is partially fulfilled by transfers. The transfers are however a rather defective equalization tool. For instance, we see that two regions with lowest per capita income, Shida Kartli and Guria, have very low PIT and CIT shares, but it is not compensated by the revenues from transfers. The following chart shows the relation between per capita combined shares of PIT and CIT and per capita transfers for individual rayons[14] (we ignore here three rayons with over 40 Lari per capita PIT and CIT shares: Tbilisi, Ajara and Poti with 72 Lari).

[14] The individual rayons shown in this and the following charts are Tbilisi, Ajara and 58 rayons, as identified in Table 1.

Chart 1. Per capita PIT and CIT shares and per capita transfers

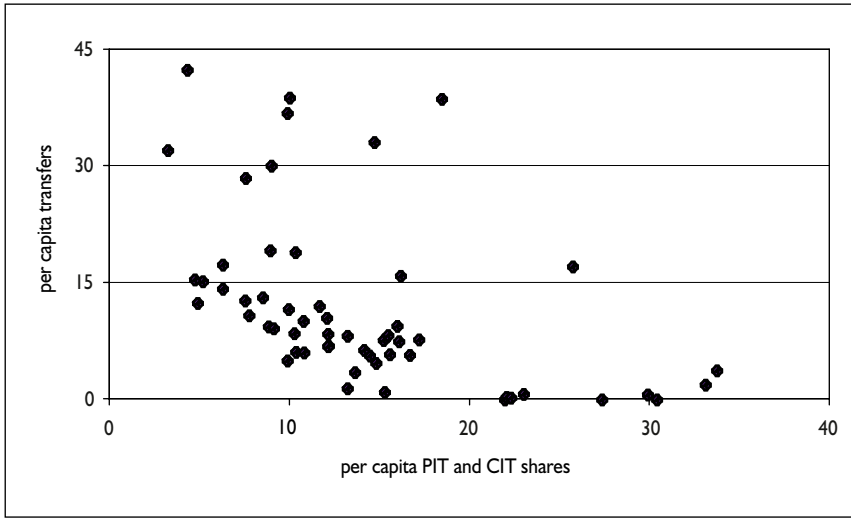

Table 4. Rayon expenditures (thousand Lari)

	sec. sch.	education	all	% educat.
Tbilisi	23 373	28 510	128 512	22.18%
Ajara	14 041	15 210	52 951	28.72%
Guria	1 903	2 054	3 941	52.11%
Racha-Lechkhumi & Kvemo Svaneti	1 041	1 320	2 895	45.59%
Samegrelo Zemo Svaneti	6 818	7 868	17 841	44.10%
Imereti	10 343	12 010	27 422	43.80%
Kakheti	5 132	6 524	13 785	47.33%
Mtskheta-Mtianeti	2 757	3 189	7 242	44.04%
Samckhe-Djavakheti	3 933	4 201	7 218	58.21%
Kvemo Kartli	8 451	9 622	20 614	46.68%
Shida Kartli	4 194	4 804	9 049	53.09%
Georgia	81 987	95 311	291 469	32.70%

Chart 1 displays some tendency of smaller per capita transfers for higher per capita tax shares, but the correlation is low due to a group of rayons with large per capita transfers. Thus transfers only partially fulfill the role of equalizing

grants. This is not surprising, as they are negotiated mostly on the basis of expenditure needs in education, and not of overall poverty of the rayons.

The expenditures of the rayon budgets include financing of enterprises, education, culture, and social security. Table 4 gives spending on general education schools, on education, total expenditures, and budget share of education by rayons, for FY 2000[15].

The comparison of Table 2 and Table 4 shows that overall, the rayons spend on education significantly above the transfers (more than four times more). This means that education is financed in Georgia from general income of the rayons (mostly shares in state taxes and taxes on land and on property). We will discuss below how this influences the spending patterns for education between rayons.

However for particular rayons and even regions the relation between transfer revenues and education spending is different. If, for each rayon, we calculate the education spending above transfers and the education spending within transfers (the latter defined as the smaller of two values: transfer and education spending), and aggregate over regions, we obtain the following table[16].

Table 5. Rayon expenditures on education (thousand Lari)

	within transfers	above transfers	within transfers	above transfers
Tbilisi	2 000	26 510	7.02%	92.98%
Ajara		15 210		100.00%
Guria	1 624	430	79.05%	20.95%
Racha-Lechkhumi & Kvemo Svaneti	1 320		100.00%	
Samegrelo Zemo Svaneti	4 389	3 478	55.79%	44.21%
Imereti	5 208	6 802	43.36%	56.64%
Kakheti	2 366	4 158	36.27%	63.73%
Mtskheta-Mtianeti	1 639	1 550	51.40%	48.60%
Samckhe-Djavakheti	2 106	2 096	50.12%	49.88%
Kvemo Kartli	1 085	8 537	11.28%	88.72%
Shida Kartli	1 884	2 920	39.22%	60.78%
Georgia	23 620	71 691	24.78%	75.22%

[15] Actual expenditures, not budget plans. The spending on secondary schools is an estimate, described in Appendix A. The inclusion of actual school spending and its composition (in particular, teacher wages) would greatly enhance the discussion below.

[16] This rough calculation assumes that all transfers are education grants. For a number of poorer rayons this assumption is not justified.

We see that transfers account for 25% of overall education spending, but this varies from zero to 100% for different regions. The distinction of within transfers and above transfers education spending is not theoretical, we shall see below that it is relevant for understanding of the variation of education spending in Georgia.

The lowest level of local government in Georgia, below the rayons, is the sakrebulos, or local self-governments, democratically elected. There are over 900 of them. New elections to sakrebulos are expected in spring. Under the new local government law[17], the elected sakrebulos will choose their heads, who will become the members of the gamgeoba, the rayon council (there will be no elections to rayon councils). The new gamgebeli (heads of rayon administration) will then be appointed by the President from among the members of the rayon council, thus reducing the present freedom of the President.

Sakrebulos correspond to individual cities or villages, and many of them are very small. Nevertheless they have their own budgets, which are controlled by rayons and, when approved, become parts of the rayon budget. The functions of the sakrebulos are limited, though some rayon functions can be delegated to them by mutual agreement. One such function, often delegated to sakrebulos, is the financing of education[18]. As in the case of the regions, the present reform envisages increasing the powers of sakrebulos, alongside their consolidation. However, at present sakrebulos' budgets are parts of rayon budgets. As we have no available data, either financial or statistical, by the sakrebulo, our analysis is restricted to the rayon level. We note that this may lead to some important omissions, especially in the case of large cities.

We now make a few comments about the budgeting process in Georgia[19]. It seems that the independence of the rayon budgets from the central budget is rather restricted. The law states that the budgets are approved by rayon gamgeoba, but their drafts are subject of detailed discussions with the Ministry of Finance, which puts forward some changes to be introduced. These changes are usually of two types: the projected income is increased, and the projected

[17] For the analysis of the new law, see Urban Institute 2001.

[18] Many sakrebulos, especially in rural areas, provide school accounting services.

[19] This issue, strictly speaking, is beyond the subject of the present report, but is extremely important for the financing of education and cannot be ignored. The budgeting process in Georgia requires serious analysis and no recommendations can be made without first-hand experience of the actual budgetary practice.

expenditures are decreased. The rationale for these changes is very clear. Indeed, it is the gap between the revenues and the expenditures that the transfers are supposed to cover, and the Ministry attempts to minimize those gaps, as a preliminary step to negotiations about the size of transfers. The law also obliges the rayons to adopt only balanced budgets, which increases the temptation to formally inflate expected income from taxes and other sources. Thus not only are the financial authorities of the rayons subordinate to the Ministry of Finance, as argued above, but also the responsibility for finally approved budgets at least partially rests with the Ministry.

This of course means that the statutory 85% share of PIT and CIT, which should be retained at the rayon level, is in fact a negotiated share, not a firm commitment from the central government to the rayons.

This institutional setup clearly weakens the resolve and initiative of local governments to increase revenues and control expenditures. Furthermore, it encourages the attitude that the main goal of local officials is to comply with the rules set up by the central government. This attitude is strengthened by the fact that all important executive officials of the rayons, beginning with gamgebeli, are appointed. The financial dependence of the rayons is thus parallel to their political dependence, limiting transparency of the responsibility for planning and executing the budgets.

On the other hand the rayons enjoy a certain degree of independence, which follows not from the application of the laws but rather from their disregard. Indeed, as UNDP report makes clear[20], in some rayons of all the funds allocated to the education at the rayon level, only 15% reaches the schools. Clearly, this indicates serious corruption at the rayon level. The situation is not helped by the fact that the State Chamber of Control is expressly authorized to control only the state institutions, and cannot control rayon finances. This is rather remarkable, since as we have seen the rayon administration is an extension of the central government. We can conclude that administrative and political control of the rayon budgets by the Ministry of Finance does not prevent major irregularities, while lack of transparency and openness makes control by local social institutions, such as gamgeoba, sakrebulo, NGO's, or the press, very difficult and inefficient.

[20] See UNDP 1999.

3. Overview of Georgian General Education System[21]

Georgia inherited from the former Soviet Union a rigid school system, in which the basic education services are provided by a single general education school, covering grades from 1 to 11 (a reform to extend the schooling to 12 grades is being implemented)[22]. Of the 11 grades, first 6 are compulsory and first 9 are provided free of charge. However the school may charge students for the teaching provided in grade 10 and 11[23]. The schools follow the same fixed *teaching plan*, which sets the number of weekly hours for each subject in each grade[24]. A number of schools enjoy the status of so called *specialized schools*,[25] which have a slightly different teaching plan (and easier rules for splitting classes into groups).

Basic data about general education schools by regions are provided in Table 7 and in more detail in Appendix D.

Formally, the general schools are divided into primary schools (first four grades), basic schools (grades 1 to 9) and general secondary schools (all 11 grades). However, although elementary and basic schools comprise about half of all general schools, they are extremely small and so about 85% of students attend the general secondary schools, as the table 6 shows[26]. We will therefore refer to all these schools as general education schools, as is often done in Georgian publications.

One of the key structural problems of Georgian general education schools is extremely low student teacher ratio, related to small classes (see Table 7 and Table 16 below). We discuss this issue in some detail in Appendix D, showing not only significant variation between the rayons, but also how the education system coped with this problem in period of scarcity. What happened was the reduction

[21] For some comments on education other than mainstream see Appendix C.

[22] See Grdzelidze 1998 and World Bank 2001.

[23] The fee is 10 Lari per month. There are about 30% exceptions based on merit and social circumstances of the student. Refugee children are exempt from this charge. Moreover, richer rayons cover this charge from rayon budget, helping parents. Fees contribute about 4% of school budgets, see Archvadze 2001.

[24] In Appendix F we report a sample teaching plan for specialized classes in a Tbilisi school.

[25] This is also inherited from the Soviet education system: similar secondary specialized schools operate, for instance, in Ukraine.

[26] Data for the school year 2000/2001, taken from Main Center of SITU 2001.

Table 6. Elementary, basic and secondary schools

	elementary	basic	secondary	all
Grades	1 to 4	1 to 9	1 to 11	
Schools	800	705	1 652	3 157
School distribution	25.34%	22.33%	52.33%	100.00%
Students	20 621	85 123	591 664	697 408
Student distribution	2.96%	12.21%	84.84%	100.00%
School size	25.78	120.74	358.15	220.91

of teacher numbers per class for small classes. This in turn, as demonstrated on a sample of Tbilisi schools in Appendix E, is probably indicative of shorter teaching time and hence lower education quality.

Low student teacher ratio indicates over-employment of teachers. We refer to Appendix B for a discussion of teacher employment and wages, and for comments on attempts to reduce teacher numbers in Georgia.

The general education schools system is under the authority of the rayons, in the sense that rayons finance them. In a number of cases this responsibility was delegated to lower level governments (sakrebulo, see Section 2), usually consisting of a single city or village. The rayons are responsible for covering the current and maintenance costs of schools and for school investments[27]. However they cannot open or (more importantly) close schools, which is the responsibility of Ministry of Education, and have no influence over the selection of the school directors, who are appointed by the Minister for Education. Similarly, the rayons cannot influence teacher employment, which is managed by the school director according to rules and procedures defined by the Ministry of Education[28]. The local governments are not involved in the pedagogical process in schools. Indeed, when some citizens complain to the rayon or the city officials about the bad teachers or other poor school practices, the officials can only ask the school director to take some action, and this will often be ignored. Rayon role in education is thus very restricted.

The limited role of the city in the education sector is symbolically expressed by the city official, who was unable to make the school directors take care of

[27] In the last ten years there were virtually no school investments and very little school maintenance in Georgia due to strained financial situation, and the school facilities are in dire need of capital repairs. See World Bank 2001.

[28] Often, the Ministry will olso find the required teachers as requested by the school director.

leaking taps. Wishing to cut increasing costs of water, he set up external water stopcocks and had city employees close water supplies to all schools every night. Unable to influence the way the schools operate, he had to introduce controls external to the school.

Georgian schools do not have separate budgets[29], and their finances are composed of two separate parts: salaries, based on the tarification process (as described below), and maintenance costs, established and managed by the city (these costs, including electricity, heating, water and school supplies, often are not even known to the school director). If the school earns some additional funds, through for instance renting space, the funds obtained (so called *special funds*) are taken over by the city and need not even partially return to the school. This effectively stops any attempt by the school to find additional funding other than through sponsors[30]. There are no separate funds available to school director, no bonuses for teachers and no money for teacher retraining within the school budget[31].

The salaries part of the budget is calculated using the number of teaching hours plus non teaching staff, multiplied by their respective salaries. This process, called tarification, consists of assigning teachers their weekly work loads and of calculating the costs of providing education on the basis of that assignment[32]. This process is described in purely administrative terms, and its results are seen as the automatic outcome of specified rules. The curriculum requirements and rules for class sizes and for breaking classes into groups are valid uniformly in Georgia[33]. So are the rules for so called *facultative hours*[34].

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[29] Moreover, they are not independent legal entities and do not have bank accounts. All teacher salaries are paid in cash.

[30] Some schools find it possible to rent some parts of the school building not for monetary payment, but in exchange for other resources, such as computers. This however requires much more careful management of the whole process of renting school space.

[31] School directors can cooperate with the parental organizations in the school, which collect off budget resources. The spending of these funds are then subject to no formal control. They may be used for repairs or investments (such as computers) or for current expenses (such as medical check-ups).

[32] Actual salary of a Georgian teacher depends on the number of weekly hours he/she is teaching in the given school year. This, as well as the role of the tarification process, had been inherited from the Soviet times and is common to other post Soviet republics.

[33] Classes are broken into groups for some subjects above the size of 26. The system has also many exceptions and loopholes. For instance, while the class size is stipulated to be between 20 and 35, in mountain areas it is permissible to open first grade with only 3 students.

[34] Those are additional weakly teaching hours at the disposal of school director, depending on the number of classes, from 4 hours for small schools, to 36 hours for schools with over 30 classes.

The checking of the correct application of those rules is indeed one of the main functions of sakrebulos, rayons and the new regions: the officials at all three levels maintained that one of their duties lies in verifying the tarification process.

There are also rules for the permitted number of administration staff (the number of deputy directors with reduced teaching load depends on the student number), for non teaching pedagogical staff (one psychologist and one librarian per school), for technical staff (depending on school area) [35]. Thus we see that spending in Georgian schools, most of which is in fact on salaries, is controlled administratively through a complex system of rules and parameters.

This administrative control system poses two serious problems. One is that it is nearly impossible to assess the impact of any particular rule or parameter on the teaching and non teaching costs of Georgian schools. For instance, a change in the rules for splitting classes into smaller groups would have quite unpredictable effects on the whole system, which turns out to be rather difficult to manage.

The other problem is that administrative controls are very weak[36]. This is revealed by the differences in basic education ratios across rayons and regions (see Appendix D), by the differences in teaching time in a sample of Tbilisi schools (see Appendix E). We will also reveal significant variation in actual spending patterns and discuss its origins in the following section. This significant variation in education inputs is hardly recognized in Georgia. Indeed, many education professionals in Georgia believe that the Georgian education system offers all student roughly similar level of services. We had been repeatedly told that the average teaching load a student receives is uniform across the country, governed by fixed rules, and supposedly maintained through the tarification process described above. The analysis offered in Appendices D and E shows that this belief is false.

[35] Some persons working in the school are not school staff. For instance, the kitchen personnel is employed by some inter-school organization, and the medical staff is usually employed by a polyclinic to which the school had been assigned.

[36] The concern with unsatisfactory control over schools is indicated by the fact that officials at many levels claim to check and verify detailed school reports. Indeed, some critical Georgian observers think that there are no controls in the system altogether.

4. Education Spending Patterns

Georgia spends on education about 2% of its GDP[37], despite significant economic decline. This is not only low by international comparisons, with OECD mean of 4.8% of GDP[38], but especially low compared to some other post Soviet countries. For instance, despite the rapid decline of GDP in the Ukraine through the nineties there has been a determined effort to protect education and health sectors, and the public spending on education is now over 7% of GDP. No such effort has been made or is foreseen in Georgia.

This means that the financing of education is conducted in the conditions of great stress and scarcity of resources. The money allocated to schools may not all reach schools (as discussed in UNDP 1999). What reaches the schools is basically spent on salaries. There has been very little capital improvements and virtually no investment. Many schools, like most public buildings in the country, show signs of technical decay.

The 2001 budget law mandated the introduction of a financial education standard[39], but the Ministry of Finance, having found extreme variation in per student spending patterns across rayons and schools, did not pursue the matter further[40]. The establishment of such a standard is necessarily a compromise between historical spending patterns (as described below) and more fair and equitable resource utilization. The standards, to be realistic, will have to be based on observed education expenditures and on relative costs of different types of schooling in different settings (such as rural areas or mountains). On the other hand, it cannot follow the empirical patterns very closely, because there is no guarantee that those patterns are fair and rational and should be maintained in the future. The challenge of a financing formula lies in it being able to stimulate rationalization and streamlining of the system, without imposing unacceptably high burdens on levels of government managing and providing education. Thus

[37] See World Bank 2001. Some estimates put it as low as 1.7%, see World Bank 1998.

[38] See OECD 2000.

[39] Whether the financial standard was supposed to go to local governments or directly to schools was not specified. Those two solutions have dramatically different impact on education finance and management.

[40] Based on discussions in the Ministry of Finance. We note that this is hardly surprising: for instance Polish Minister for Education was legally obliged to issue teacher employment standards (playing in Poland analogous role in the education finance), but failed to do it because of technical and political difficulties. See Levitas, Herczyński 2001.

any change in the financing mechanism of education must be preceded by some analysis and understanding of the system which is supposed to be changed.

While we cannot hope to provide the analysis required in detail, we can draw attention to some important aspects of the financing of Georgian education.

The first question concerns the level of per student education spending across rayons. The following table provides per student spending for general education schools (as estimated in Table 4), the student teacher ratio (already discussed in previous section), and per capita income of rayons.

On average, in 2000 Georgia spent about 118 Lari per each general education school student. The actual rayon values are more divergent than the data aggregated for regions in Table 7, and vary from under 61 Lari in Kvareli to over 202 Lari in Poti, more than three times more (we ignore the high value for Ajara, as the data for this autonomous republic are less reliable, see Appendix A). These differences, although very significant, are much smaller than differences in per capita rayon income (see Table 3), due to partial equalizing performed by transfers.

Table 7. Per student spending and other ratios by regions

	per student spending	student teacher ratio	per capita income	per class spending
Tbilisi	148.55	13.42	108.29	4 176
Ajara	205.39	9.47	144.44	3 404
Guria	86.63	7.97	27.43	1 275
Racha-Lechkhumi & Kvemo Svaneti	158.75	4.75	55.62	1 182
Samegrelo Zemo Svaneti	101.53	8.67	37.61	1 613
Imereti	94.41	9.17	36.90	1 706
Kakheti	81.89	9.15	34.42	1 584
Mtskheta-Mtianeti	133.97	7.87	57.43	1 706
Samckhe-Djavakheti	99.20	8.02	33.04	1 406
Kvemo Kartli	98.47	10.35	37.69	1 870
Shida Kartli	78.48	9.72	27.14	1 485
Georgia	118.29	9.77	63.39	2 193

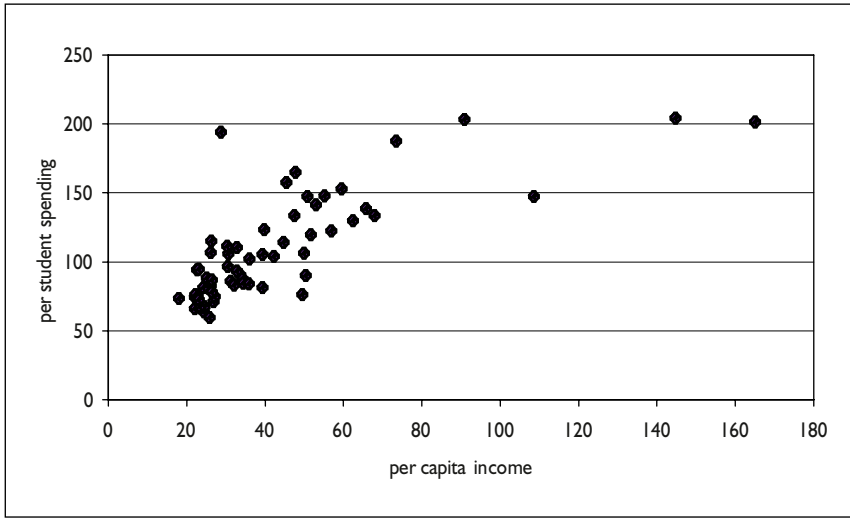
The third and fourth columns of the table point to two main factors driving the per student spending in the rayons: the student teacher ratio and per capita

rayon income. We can see from the table that those two factors are somewhat complementary. Thus the high per student spending in Tbilisi (or indeed Poti) can be attributed to the large income, while that of Racha-Lechkhumi is clearly due to low student teacher ratio, and in fact is financed mainly from transfers, see Table 2. For regions with similar student teacher ratio (for instance, Imereti, Kakheti and Shida Kartli), the per student spending increases with per capita income.

We also note that regions with lowest per student spending, Shida Kartli and Guria, are precisely those poor regions, where the transfers do not compensate for poverty (see remarks after Table 3).

This behavior appears also for the individual rayons. The following is the chart depicting the rayons on two axes, the capita income and per student spending.

Chart 2. Per capita income versus per student spending



The two variables are clearly related to each other (the correlation coefficient R=0.77), although we can see a number of rayons with unexpectedly high values of per student spending: those are, presumably, the rayons with lower than average student teacher ratio.

To avoid circularity present in Chart 2, in that the transfers are part of rayon income which is used to finance education of some poor rayons, we analyze the relation between the per capita rayon income *without* transfers and the

education spending *above transfers* (see Table 5). The results are displayed in the following chart.

Chart 3. Per capita income versus per student spending, without transfers

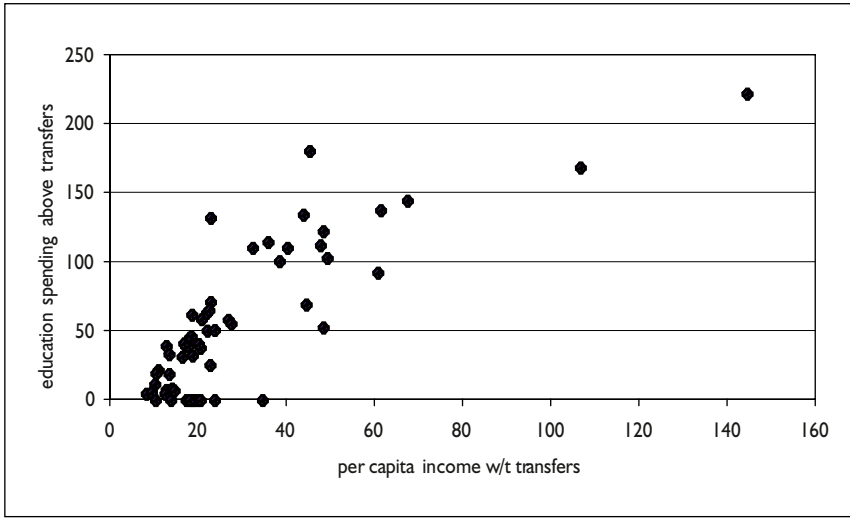
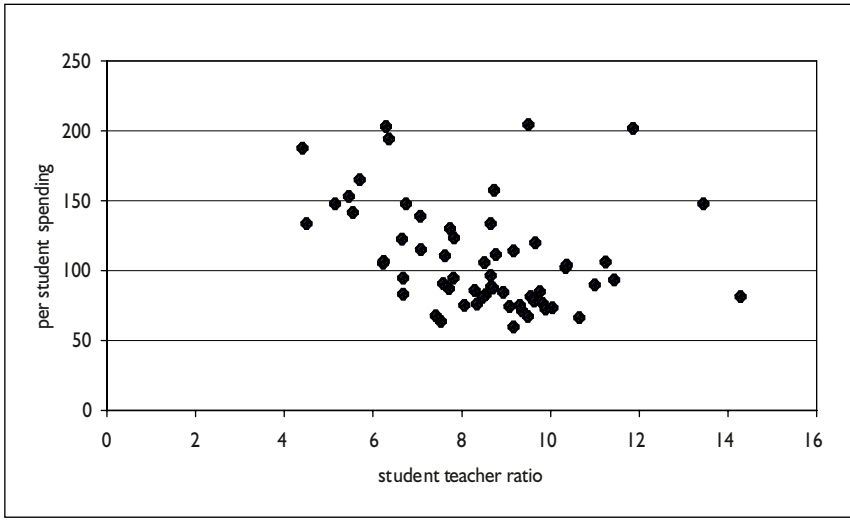


Chart 4. Student teacher ratio versus per student spending



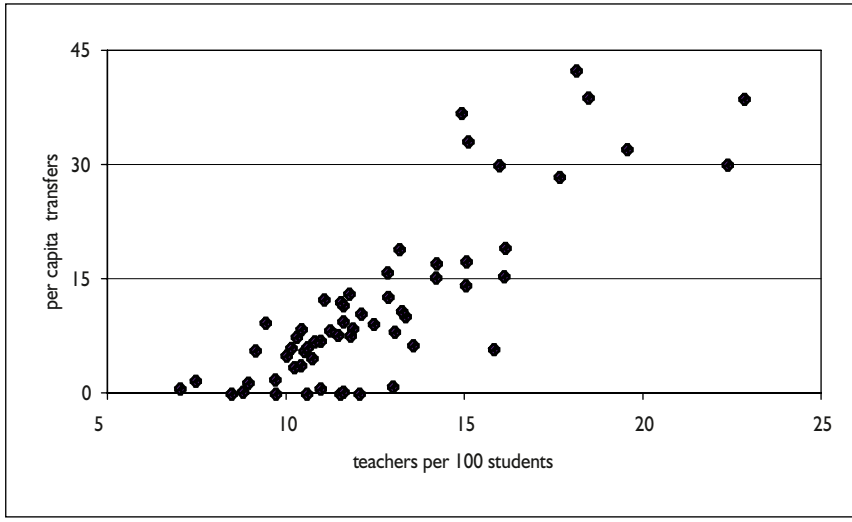
Here the relationship is much closer than in Chart 2 (correlation coefficient R=0.85). We recall (see Table 5) that education spending above the transfers accounts for 75% of all education spending, which makes the chart above one of our crucial findings.

The Chart 4 provides analogous display for the student teacher ratio and per student spending.

The variables in Chart 4 are less related than per capita income and per student spending of Chart 2 (correlation coefficient R=-0.32). But even here we can distinguish a number of rayons, which lie above the *main line* of the graph, for which the per student spending is unexpectedly high: those are, presumably, the rayons with high per capita income.

What is really interesting, however, is that student teacher ratio is very closely related to per capita transfers (for technical reasons we use the inverse variable, namely the number of teachers per 100 students).

Chart 5. Student teacher ratio versus per capita transfers



The chart above shows that in fact the transfers are quite well related to teacher student ratio (correlation coefficient R=0.84). Thus we see that 25% of education spending (represented by within transfer spending, see Table 5) is driven by small class and school sizes. We can also conclude that the actual role of transfers in the system is to help maintain current distribution of small schools.

We consider the correlations exhibited in Chart 3 and Chart 5 to be our main empirical findings. Namely, that the per capita income (without transfers) drives the variability of 75% of education spending (above the transfers), and that student teacher ratio is closely related to the remaining 25% of education spending (within transfers).

We remark parenthetically here that the two identified variables, per capita income and student teacher ratio, are not well related (correlation coefficient R=0.11), and therefore can be considered independent. Similarly, per capita income is not related to the class size or school size.

We now return to the final column in Table 7, namely the per class spending. This variable is very relevant, because the class is the natural unit of teaching, as governed by tarification procedure[41]. When we consider per class spending, we ignore the class size and are able to compare actual input a student receives.

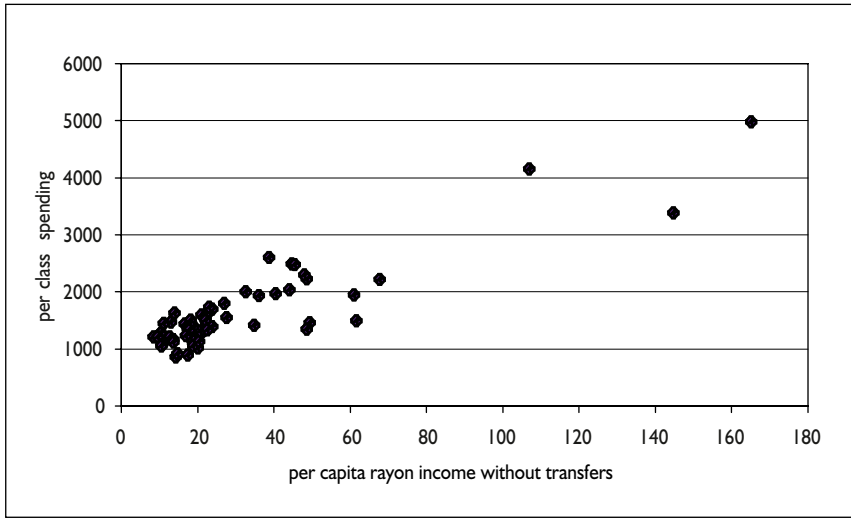
We see already from Table 7 significant variation between regions. For instance, Racha-Lechkhumi, despite very high per student spending, has the lowest per class spending (this is of course due to small class size, see Table 16). For rayons this differentiation is more marked, of course. Ignoring the three highest values for Tbilisi, Ajara and Poti, we note that rayon per class spending varies from under 900 Lari per year to over 2,600 Lari, as exhibited in Chart 6.

We thus see that per class spending is by no means uniform across Georgia, and that it is well correlated with per capita income without transfers (correlation coefficient R=0.89). Richer rayons may spend not only on higher teacher wages, but also on additional education services or better teaching materials and equipment. Nevertheless, we can suspect that at least some of the variation exhibited in Chart 6 is due to different teaching received by student in different rayons and regions.

Lacking good school spending data (in particular, lacking the share of teacher salaries and other major parts of education budgets) we cannot confidently say how the higher per student spending manifests itself in the school. We can only expect that in the cities it goes to teacher salaries, and in the mountains it goes to supporting small classes. Most likely, the first is financed mostly from own rayon income, and the second from transfers. More

[41] In principle, each class of a given grade should receive very similar number of teaching hours as dictated by the curriculum.

Chart 6. Per capita rayon income without transfers versus per class spending



detailed analysis would be extremely interesting and useful for future reforms of Georgian education.

In conclusion, we have seen that two variables drive the per student spending[42]. The impact of student teacher ratio is well recognized in Georgia, and is, as shown in Appendix D, closely related to small classes in small schools. This is a variable, which it is not easy to change through simple measures, and which will probably remain very important for Georgian education for some time to come.

However the impact of the second variable, per capita rayon income, has not been recognized sufficiently in Georgia, and it deserves more attention. The very high correlation of that variable with per student spending is worrying. Indeed, unless special circumstances prove it otherwise, it must be assumed that triple differences in per student spending between the rayons are not acceptable, as they lead to unjustified differences in the quality of education service provided to Georgian children. Even more unjustly, it is precisely the children of poorer, less educated rural and mountain families who require more education inputs in the school system. The present system of financing of Georgian education punishes them instead of helping them.

[42] Together, these two variables explain about 75% of variability of per student spending. The remaining variability may be largely due to influence of schools in mountain areas.

5. Alternative Financing Formula

The previous Section has revealed to what extent the present financing of education is slanted in favor of more prosperous rayons and regions. The apparent geographical inequalities in the public delivery of education services are not acceptable. To the extent that Georgia wishes to have an equitable education system, it needs to revisit the present financing mechanisms and introduce more serious redistribution from prosperous to poor and very poor rayons. However, the redistribution could take many forms, and the choice has to be ultimately based on political principles guiding the reform of education finances. Such principles should be the result of a serious discussion involving many actors in the education sector. They will certainly relate to historical inheritance of the education system in Georgia and to the popular perceptions of the society's priorities (such as the need to maintain small schools in the mountains or the perceived role of vocational education). The present report is no place to either initiate such debates, or propose their resolution in terms of new formulas to be adopted.

Instead we focus first on the principles of more equitable distribution of education funds, and then propose a very simple model formula. This radical model formula is not meant as a definite proposal. We rather use it to show what types of analysis and political considerations are involved in **any** more redistributive formula. In other words, while not defending the model formula on political or programmatic grounds, we point to the typical issues, which must be considered in proposing, negotiating and fine-tuning a new formula.

The starting point of our discussion is the equity principle. It states that every Georgian child has a right to adequate education of reasonable standard, guarantied in all Georgian schools. The basic way to assure the provision of reasonable education is to make sure that all the rayons, with whom the decisions about the school budgets ultimately rest, have adequate resources at their disposal to cover the recurrent costs of that education. While there is a need to monitor education outcomes (through testing and other forms of control), the state has an obligation to assure that all the rayons can allocate sufficient education inputs in terms of funds, manpower and other resources.

This may sound simple, but in fact raises a number of difficult questions. Indeed, the ability of all rayons to allocate sufficient resources to education means that their own income other than direct transfers meant for education

are of significance in this process. Some sort of redistribution is necessary, given the extreme variability of per capita income rayon income in different rayons of Georgia. But it is not easy to make redistribution acceptable and practical. For instance, if we simply check the rayon budgets to see their current (or previous year's) share for education and supplement it to some prescribed level of per student financing, we create a perverse incentive for the rayons to lower their direct education budgets. A slightly more sophisticated approach would be to use not some predefined minimum per-student spending as a benchmark, but for instance the country-wide average of per student spending, either in the current year's budget plans, or in previous year's executed budgets. This would however allow very large rayons (such as Tbilisi) to manipulate the averages to their advantage. An even more sophisticated approach would be to use what in USA is called *power equalizing*, in which we supplement the poor rayon's education budget according to the effort of spending on education from own resources[43]. However, as we argued already, it is not permissible to equate per capita rayon revenues with the rayon level of prosperity. Moreover such subtle fiscal mechanisms presuppose a level of legal and political stability, which cannot be realistically expected in Georgia in the coming years.

Thus a natural redistribution mechanism would be to take education finance altogether out of rayon own resources and to base it on a direct education grant, or education subvention[44], transferred to the rayon according to some measure of education tasks faced by each rayon, presumably the enrollment.

Another important principle is the transparency of financing, so that all the stakeholders involved in the process have clearly identified roles and responsibilities. As argued in Section 2, this transparency is now lacking, and the actual use of resources marked for education in the rayon budgets is not easily controlled[45]. In fact, the rayons spend their general income as they spend the specific transfers negotiated with the Ministry of Finance, usually on most pressing needs. The separation of resources for education into a separate grant

[43] This means that a poor rayon spending a certain percentage of its general income on education would be supplemented according to that percentage *as if* it were a medium rich rayon. Power equalizing stimulates local governments to increase spending on education, recognizing at the same time that similar percentages of the budget may represent, for different types of jurisdictions, different levels of fiscal effort.

[44] The terms *transfer* and *grant* have specific meaning in the Georgian fiscal system, so we suggest to use the neutral word *education subvention* to describe the direct transfer from the state budget to the rayon budgets earmarked for education.

[45] We refer once again to UNDP 1999 for the description of serious irregularities in the sector.

allocated on a per student basis would certainly increase the transparency of the system. Of course, the rayons should maintain the right to add to the education funds beyond the education subvention they receive.

Finally, we mention the issue of system manageability. As argued above, the present system uses purely administrative controls. We demonstrated in practice how weak and inefficient those controls are. But as the Georgian economy stabilizes and more money can be used for education, it is very important to retain good control over how the additional funds are being used. Retaining the current system of administrative controls with the strong impact of general rayon income on education finance will not allow the central government to predict, monitor and correct the actual use of education resources at the rayon level. Direct education subvention would be a system much easier to monitor and control[46].

These considerations, on the basis of the analysis conducted in Section 5 and in Appendix D, allow us to make the following recommendation: that the financing of education in Georgia should be based not on own rayon income, but on per student education subvention from the state budget. At the same time, the redistribution hinted at above should be performed in a fiscally neutral way, that is we cannot assume that the reform itself would increase the Georgian education spending. Although this is certainly advisable, it is a separate decision requiring separate discussion, with priorities other than education openly taken into account.

The redistribution would thus consist in the following procedure: a reduction in general rayon income, for instance by lowering of the share of PIT and CIT retained at local level, accompanied by the introduction of education subvention, which would channel the same resources back into rayons, but with a quite different allocation mechanism. While fiscally neutral to the Georgian budget, this would lead to significant reallocation of education funds, primarily from Tbilisi and some other relatively affluent rayons to the poor, rural and mountainous rayons of Georgia.

We now perform this rather simple calculation. The data in Table 2 (based on fiscal data for 2000) show that 85% of PIT amounts to 76 million Lari, and 85% of CIT amounts to 40 million Lari, together 116 million Lari. Hence the whole PIT and CIT collection amounts to 137 million Lari. The estimated spending of rayons

[46] Transparency and manageability also require extension of powers of State Chamber of Control to cover rayon functions. This is of course needed for a number of reasons, going well beyond education.

on general education schools, see Table 4, is equal to 82 million Lari, that is just under 60% of PTI and CIT yield. If those funds are to reach the rayons as education subvention, the share of state taxes (PIT and CIT) to remain as general income of the rayons should be reduced to 25%. The remaining 60% would be converted to education subvention and should be allocated to the rayons not according to the PIT and CIT yield, but according to student enrollment[47].

An open issue related to this calculation is how to treat transfers, totaling 24 million Lari (see Table 2). As the transfers are usually meant for education, the introduction of education subvention would significantly reduce the need to maintain the transfer system, with much gain in overall transparency. Inclusion of the transfers in the sum converted to education subvention would mean that only 57 million Lari of PIT and CIT shares should be changed to the subvention[48]. Thus the PIT and CIT share would drop from 85% to 43%, not 25%. The fiscal redistribution would be much less radical. We will call this a moderate version below.

One warning has to be made: if the financial data were reliable and stable, then although detailed percentages may change from year to year, the analysis presented above would remain valid also for subsequent years. However due to incompleteness of Georgia's financial data, a recalculation using both older and more recent data is very much needed.

The allocation formulas are usually built around the weighted student numbers, with the choice of the particular weights and their values reflecting the historical spending patterns, the policies towards education and the available data. The following categories of students in Georgia could be included with special weights attached to them:

- students in schools located over 1500 meters, over 2000 meters, and over 2500 meters above the see level,
- students in specialized schools,
- students in schools for minorities, teaching in language other then Georgian,
- students of elementary schools and students of basic schools.

Each of such potential weights may be justified on programmatic and historical grounds. Eventually, as seems most likely, all of the above and some

[47] We leave without comment the question of whether the education subvention should also include, and in what form, the funds for preschools and other education services.

[48] Here we assume that all the transfers are meant for education, which is not true. More realistic calculations should consider this issue more carefully.

other weights may be used. However, the model formula we will use will be based on pure enrollment, without any weights attached. We make this choice for three independent reasons.

The first is that the use of any weight would involve us in the complex discussion of the numerical value of that weight. While such a discussion is certainly feasible, it would have to be quite extensive, going well beyond the scope of the present report. It would also obscure the main points of the following analysis.

The second reason is that very important as those weights may be, they involve very limited numbers of students and, unless their numerical values were to be very high, their impact on the education grant allocation will not be very significant. What may be crucial for any particular rayon, may become less pronounced when viewed for all the rayons together.

And finally, the weights listed above will mostly apply to students outside of Tbilisi. Since as we have seen in the previous chapter, Tbilisi spends much more per student than most rayons in Georgia, the redistribution mechanism will largely consist of cutting Tbilisi income and redirecting some of it to other rayons. The inclusion of any weights would magnify this effect, making the redistribution under discussion even more politically problematic.

Thus in order to explore the effects of a shift from the present system to the education subvention we use a radical model formula, based exclusively on enrollment. In other words, we shall evaluate the income changes following such reallocation of funds spent on education in FY 2000.

Table 8 shows, aggregated to regions, the effects of this reallocation on rayon revenues. It gives old PIT and CIT shares (85% of tax yield), new shares (25% of yield), education subvention calculated according to enrollment numbers, and the difference between the new tax share with education subvention, and the old tax share (it is negative when a given region loses in the new arrangement compared to the present one; the fact that all rayons together "lose" a small sum is the effect of rounding).

As we can see, not surprisingly, the direction of reallocation is very clear. On the rayon level, Tbilisi, Ajara and Poti lose, all other rayons win. This could be guessed already from Table 7, which shows that Tbilisi and Ajara have very high per student spending. Interestingly, Racha-Lechkhumi wins, although it's per student spending is very high. This in fact is due to the fact that this region earns little from tax shares, due to poverty of its population, and transfers remain the major source of its revenues (see Table 2), and thus the source of its education funds.

Table 8. Effects of simple allocation formula

	old PIT CIT shares	new PIT CIT shares	education subvention	difference
Tbilisi	70 189	20 644	18 599	-30 946
Ajara	20 264	5 960	8 081	-6 223
Guria	566	166	2 596	2 197
Racha-Lechkhumi & Kvemo Svaneti	332	98	775	541
Samegrelo Zemo Svaneti	5 607	1 649	7 938	3 980
Imereti	6 540	1 924	12 951	8 335
Kakheti	2 194	645	7 413	5 865
Mtskheta-Mtianeti	1 968	579	2 434	1 046
Samckhe-Djavakheti	1 049	309	4 690	3 949
Kvemo Kartli	5 578	1 641	10 152	6 214
Shida Kartli	2 338	688	6 322	4 671
Georgia	116 625	34 301	81 953	-371

The moderate version of redistribution, described above, has much less radical impact on the fiscal flows. The following table compares old CIT and PIT shares at 85% and the transfers with the new PIT and CIT share of 43% and the education subvention.

Table 9. Effects of simple allocation formula, moderate version

	old PIT CIT shares with transfers	new PIT CIT shares	education subvention	difference
Tbilisi	72 189	35 508	18 599	-18 082
Ajara	20 264	10 251	8 081	-1 931
Guria	2 219	286	2 596	664
Racha-Lechkhumi & Kvemo Svaneti	1 989	168	775	-1 046
Samegrelo Zemo Svaneti	10 011	2 836	7 938	764
Imereti	11 765	3 308	12 951	4 494
Kakheti	4 560	1 110	7 413	3 963
Mtskheta-Mtianeti	3 923	995	2 434	-493
Samckhe-Djavakheti	3 226	531	4 690	1 995
Kvemo Kartli	6 663	2 822	10 152	6 310
Shida Kartli	4 222	1 183	6 322	3 282
Georgia	141 032	58 999	81 953	-81

As expected, the moderate version of redistribution is much kinder to Tbilisi and Ajara. A new finding is that two small mountainous regions of Racha-Lechkhumi and Mtskheta-Mtianeti lose if the redistribution includes the transfers. This is due to the fact that in both of them the transfers are a very significant part of income (see Table 3), certainly used to finance other services than only education. Of course, a formula with some weights for mountain regions would benefit those regions. However we have to conclude that some other form of equalizing program is necessary to supplement transfers.

Another way of viewing the effects of reallocation is to consider the spending patterns in education. Here we compare the actual spending on education in 2000 with the estimated education subvention for each rayon. We thus ignore the possibility that some rayons will add to the received subvention, and assume that all subvention funds will be spent on education (all amounts in thousand Lari, except for the last column, which is in Lari).

Table 10. Effects of simple allocation formula in education

	education spending	education subvention	difference	per student difference
Tbilisi	23 373	18 599	-4 774	-30.34
Ajara	14 041	8 081	-5 960	-87.18
Guria	1 903	2 596	693	31.58
Racha-Lechkhumi & Kvemo Svaneti	1 041	775	-266	-40.54
Samegrelo Zemo Svaneti	6 818	7 938	1 120	16.68
Imereti	10 343	12 951	2 608	23.81
Kakheti	5 132	7 413	2 281	36.40
Mtskheta-Mtianeti	2 757	2 434	-323	-15.68
Samckhe-Djavakheti	3 933	4 690	757	19.09
Kvemo Kartli	8 451	10 152	1 701	19.82
Shida Kartli	4 194	6 322	2 127	39.81
Georgia	81 987	81 953	-34	-0.05

As expected, the effects are due to the leveling of education spending. The regions where per student expenditures are above the country average lose (compare with Table 7). Once again, the regions Racha-Lechkhumi and Mtskheta-Mtianeti stand out. The rather insignificant losses of those small regions are due to a lack of weights for students living in mountain areas and can

be easily corrected. The more significant losses of Tbilisi and Ajara represent the effects of reallocation mechanism.

Altogether, we have to recognize that the shift of funds away from Tbilisi, Ajara and some other rayons (for instance, Poti) is a component of any serious change in the financing of Georgian education, which aims at bringing more equity and transparency into the system. So we have to face the choice: either there is a way of persuading Tbilisi and its political protectors to accept such a shift, or a way must be found to soften the impact of any change, called the adjustment shock. The mechanisms for achieving this softening are usually called buffer mechanisms, and we conclude the section by a review of some available options (we will have something to say about the first option of the choice in the next section).

The goal of the buffer mechanisms is to ensure that changes in the allocation of education resources from year to year are kept at reasonable level, to avoid disruption of service delivery[49]. Thus a measure must be established, usually in form of a threshold, which limits the divergence of a new year's financing from that of the old year's. If the thresholds are narrow, then next year's education funds are very similar to the old year's and adjustment shock is minimal, but the step taken towards a new resource allocation is very timid. If the thresholds are very wide, the adjustment shock may be significant, but the new allocation is achieved to a greater extent.

This means that in practice a political trade-off must be found as to the level of the threshold to be used. Of course, determination of acceptable thresholds for Georgia falls outside the scope of the present report. We only discuss some possible buffer formulas[50].

One option is to state that new year's education subvention (or preferably, education subvention per student) remains within specified bounds of the last year's subvention. This will be very difficult to use in the case of Georgia, when the previous year had no education subvention at all. Therefore one would need to use the actual education spending as a baseline in the first year. We can call this *the education spending threshold*. It would not be fair to those rayons, which for various reasons had been forced to keep education spending at low levels. Thus the upper threshold (applying mostly for rural

[49] This is especially important in education, where the fiscal year does not coincide with the school year, and hence any changes in fiscal arrangement will be felt in the middle of the school year, making radical adjustment very near impossible.

[50] We describe the principles without writing out detailed mathematical formulas.

rayons) should be significantly wider than the lower threshold (applying largely to the cities).

Another option would be to apply the buffer formula to the old tax shares for the previous year, and the new tax shares plus education subvention for the new year (such a mechanism should be used only once, of course). Thus combined new tax shares and education subvention would not be allowed to diverge from last year's tax share by more than a certain percentage (the threshold). We can call this a *fiscal threshold*. Thus we would limit the loss of Tbilisi and some other rayons, and also limit the gains of all the other rayons. This should be done carefully so that in all rayons together, the losses and gains balance.

It is also possible, given the very limited number of rayons losing from the new arrangement, to set up special fund to help those rayons and negotiate with them the allocation of this special fund. This approach would be very simple technically, but given the political influence of large cities may be very tricky to pursue in practice.

6. Context of Education Finance Reform

Georgia not only spends on education a surprisingly small fraction of its not very high GDP, but moreover does this in an extremely unjust and uneven manner, with some cities spending per student three times more than some rural rayons. One can only assume that these differences are even starker at the school level[51].

As we have argued in Section 5, these differences are due to the way the Georgian education is financed, namely through general rayon income (most notably, from shares in state collected taxes and from some local taxes). In fact the per capita rayon income is much more closely related to per student spending than is the student teacher ratio, a cause most commonly cited in Georgia for divergences in education spending.

In Section 5 we have argued that this system should be replaced by the education subvention, to break the direct impact of rayon affluence on

[51] In richer rayons, also students' parents are richer, and can contribute more to off budget funds, see footnote 31. Likewise in richer rayons, parents do not have to pay the charge for two highest grades, see footnote 23.

education spending. This can be achieved in a fiscally neutral way, if the very high Georgian shares of PIT and CIT remaining in rayons, equal now 85%, are reduced to 25%, while the remaining 60% is converted to the education grant, flowing directly to the rayons on the basis of student enrollment. It is not surprising that such a shift would benefit most rayons in Georgia, and would seriously hurt Tbilisi, Ajara and Poti. A buffer mechanism, which would soften this massive and dramatic reallocation of resources is certainly necessary.

In the present short section we go beyond the technical formulation of new allocation formulas and possible buffer mechanisms to enquire, what are the political considerations, which have to accompany education finance reform in Georgia, irrespective of particular solutions adopted. We note first that as described in Section 2, local governments at the rayon level are very weak in Georgia. They don't have truly independent budgets and are formally though ineffectively controlled by the Ministry of Finance. Moreover, as shown in Section 3, their role in the education sector is extremely limited, although as payers of teachers' salaries and of school maintenance costs they are locally seen as school managers, if not owners.

This poses two problems. One is that profiting from insufficient control mechanisms they have strong temptation to increase their level of autonomy though unreported, irregular or sometimes directly unlawful means. And the second is that their powerlessness in education may disincline them to take any serious and risky initiative to improve the quality of public services they provide, including education.

Thus the first necessary condition is the strengthening of the autonomy and budgetary independence of the rayons (or any other level of government which effectively controls education). The autonomy requires elections of all local officials and their independence of Tbilisi government. The budgetary independence means that they must be given adequate resources to finance the functions assigned to them, and need the right to set and execute their own budgets. Together with autonomy and budgetary independence comes the responsibility for managing those functions.

It is clear that the present system of education management is very far from decentralized. The rayons have simply some payment and limited management functions delegated to them by the central government. If it is the case, as Grdzelidze puts it, that *decentralization must be the main goal of the education system in Georgia*, then the establishment of the rayons as independent and

fiscally sound institutions is the first step[52]. There can be no decentralization of education if the prospective owners of decentralized schools are still parts of the state apparatus, appointed and controlled by the government.

The responsibility to set and execute own budgets and to define and pursue local policy objectives must come with political responsibility to voters through local voting system. Georgia also needs to refine and strengthen its state control system, in particular to extend the scope of action of the State Chamber of Control to all public offices. Otherwise the elimination of corruption will be quite difficult.

Local governments must not only be given budget independence and adequate resources, so that they can autonomously take decisions concerning the school systems with which they had been entrusted. They need also some managerial powers to influence the work and ensure the quality of their schools. Here the first step would need to be the grant them effective influence on the choice of school directors.

The local governments, as owners of schools, must be also able to close existing schools and open new ones, because without rationalization of the school network it will be very difficult to achieve efficiency of the sector and enhance learning environment. In particular, the decisions about the small rural schools would be best handled by local governments, in line with local conditions. The Ministry of Education, on the other hand, should introduce necessary monitoring procedures to ensure quality and identify under-performing schools.

As we have attempted to show, the drastic differences in per capita rayon income mean that it will be very difficult to ensure adequacy and equity of education funding otherwise than through some form of education subvention, or other equalizing mechanism. However, any move towards per student funding of education in Georgia will, as we have seen, inevitably lead to shifting resources away from Tbilisi and from some other large cities.

It is here that education finance reform may meet local government reform in an innovative way. Simply put, large cities may agree to lose some of their

[52] We note in passing that as Georgia is a very small country, it is certainly feasible to organize efficiently and equitably its education system in a centralized manner. We do not discuss this possibility on the grounds that its political impact may be quite negative. It would be also probably very difficult and counterproductive to take the schools out of local government's hands. On the other hand, recentralizing education would be a much easier project than the strengthening of local governments, as advocated here.

resources for education, if they are guarantied that they can use the rest of their education resources to improve their schools, through their own independent budgets and with significantly increased managerial powers in the sector. If they obtain more ability to rationalize their local education systems, they will be able to use their remaining resources much more fruitfully. This would allow them to smoothly achieve rationalization gains available in the present system, for instance due to low student teacher ratio.

We thus believe that in order to secure political acceptance for the reform, especially in large cities and among the teachers, school directors and local education officials, and to ensure that reforms can reach their goals, Georgian government should make virtue of necessity and divest to cities and rayons more significant powers in the education sector and more independence in the budgetary process.

7. Conclusions and Recommendations

The analysis of Georgian education finance, conducted in preceding sections, shows that it is embedded in the overall structure of rayon finances and reflects all their weaknesses: inequalities, lack of transparency, unmanageability, room for corruption. It is impossible to address those issues for education alone. That means that our conclusions and recommendations must necessarily include issues beyond education financing itself. In other words, what follows can only be seen as a preliminary proposal, a part of a possible future, much more comprehensive solution[53].

Our main conclusions are:

1. The steep fiscal inequalities between Georgian rayons are only partially and ineffectively addressed by the system of transfers. Those transfers moreover are heavily negotiated and non-transparent (Section 2).
2. Education finances depend heavily on general income of the rayons, which effectively determine the level of financing. However the role of the rayons in the management of the sector is very limited (Section 3).

[53] Moreover, as pointed out throughout this report, our analysis is often based on incomplete or unreliable data. Although we are aware of the fragility of available evidence, we chose to phrase the conclusions in a compelling language in order to stress importance of findings and recommendations, and to bring more clarity into the discussion. Obviously, much research effort is still needed to support any actual policy proposals.

3. The actual spending patterns for Georgian general education schools are very closely related to per capita income of the rayon without the transfers (above transfers education spending), and to student teacher ratio (within transfer education spending). About 75% of education spending is driven by rayon wealth (Section 4).
4. The education sector in poorer, mountainous rayons responds to this situation by reducing the number of teacher per class, thus lowering standards of service delivery despite high per student costs (Appendix D).
5. Introduction of a per student education mechanism would lead to very serious redistribution of available funds, away from Tbilisi and some rich cities and towards poorer rural rayons. This redistribution has to be accompanied both by buffer mechanisms (Section 5) and by political discussions and agreements (Section 6).

Those conclusions support the following recommendations:

1. To increase budgetary independence and education management role of rayons (or other local governments actually running Georgian schools).
2. To take education finance out of general rayon income and base it on a per student education grant to local governments (called here education subvention).
3. To subject education subvention to buffer mechanisms, so as to protect rayons from drastic changes to their present education spending patterns.
4. To distribute education subvention according to a per student formula, which recognizes unavoidable higher per student costs of providing education in different geographical settings.

The implementation of those recommendations would significantly reform the structure of local government finances in Georgia, and in particular would drastically change the public funds available for education in different rayons. Such a change, of course, cannot be contemplated without prior open public discussion of social and political goals. But we think that the case for the introduction of per student education subvention is strong. We conclude with two political arguments.

The first is that the Georgian government must take responsibility for ensuring equal access to education for all its children. As we have argued, the existing procedural and administrative controls are very weak and have led to unacceptable and, presumably, persistent inequalities of education inputs in different regions, rayons, and schools. The Government should try to correct this.

The second is that it will be the simplest method of realizing the principles of equity, transparency and manageability, as discussed in Section 5. Indeed, while other options are possible[54], the present political and structural instability of Georgian local governments would make introduction of more gradual changes much more complex. Instead of negotiating fine details of complicated equalization algorithms, the Government may use the simple and very clear idea of education subvention as a one step education finance reform. Of course, both the weights for different classes of students and the necessary buffer mechanisms will have to be discussed and approved[55], but at least the principle will be straightforward and compelling. For a newly emerging democracy, this is invaluable.

[54] Some equalization schemes in education finance are briefly discussed in Section 5.

[55] This will very likely lead to adoption of some algorithm, which may turn out to be complicated, despite essential simplicity of the proposal.

References

Amnesty International (2001), *Annual Report 2001*, posted on web site in 2001, http://web.amnesty.org/web/ar2001.nsf/webcountries/GEORGIA.

Archvadze J. (ed.) (2001), *Education Services in Georgia*, State Department of Statistics of Georgia, Tbilisi.

European Training Foundation (1999), *Report on the Vocational Education and Training System*. National Observatory of Georgia, Tbilisi.

Grdzelidze T. (1998), *Education reform in Georgia: what it is and what it should be*, UNDP Discussion Paper 4, Tbilisi.

Human Rights Watch (2001), *World Report 2001: Georgia Human Rights Development*, posted on the web site in 2001,
http://www.hrw.org/wr2k1/europe/georgia.html

Levitas A., J. Herczyński (2001), *Decentralization, Local Governments and Education Reform in Post-Communist Poland*, processed text, Warsaw.

Main Center of SITU (2001), Ministry of Education of Georgia, *State General Day-time Schools of Georgia*. Tbilisi.

OECD (2000), *Education at a Glance*, Paris.

Seely Ch. (1999), *The Georgian Vocational Education and Training System*. World Bank Report, Tbilisi.

State Department of Statistics of Georgia (2000), *Statistical Yearbook of Georgia 2000*, Tbilisi.

Tsuladze G., N. Maglaperidze (2000), *Population Prospects of Georgia*. Tbilisi.

UNDP (1999), *Human Development Report Georgia 1999*, Tbilisi.

UNDP (2000), *Human Development Report Georgia 2000*. Tbilisi.

Urban Institute (2001), *Baseline Assessment for Georgia Local Government Program*. Processed text Tbilisi.

World Bank (1998), *Cost and Finance of Education in Georgia*, World Bank Mission in Georgia, Tbilisi.

World Bank (2001), *Georgia: Education System Realignment and Strengthening Program*. Project Appraisal Document, Tbilisi.

Appendix A. Some Problems with Financial Data

The Georgian statistics are rather unreliable, due to very difficult conditions in which they are collected and aggregated (some of these conditions are outlined in the Introduction). There are many special cases and exceptions in the whole local finance system[56], which give rise to specific issues of interpretation. In the present Appendix we describe how we had to resolve two such problematic issues, and how we estimated some missing data on general education school expenditures.

One problem concerns the mountain rayon of Kazbegi, in Mtskheta-Mtianeti region. This is a very small and poor rayon, with a population of barely 5.5 thousand, enclosed by Caucasian mountains. There is a specific arrangement, in which the gas supplies for Kazbegi come directly from Russia and are paid for by the Georgian government. In Kazbegi, due to isolation from other parts of the country and lack of alternative sources of energy, the imported Russian gas is used for all purposes, from heating to light. Therefore in the Kazbegi rayon budget there is a considerable amount on the income side, namely 3.373 million Lari, for clearing of accounts with the central government, which represents a grant for gas supplies. There is also a similar amount, 3.362 million Lari, for expenses for gas consumption. That amount corresponds to 87% of the whole Kazbegi budget. This means that the massive grant for gas reaches and leaves the Kazbegi budget without influencing other expenditures, such as education. Since inclusion of this grant would seriously slant any analysis, it was decided to subtract the amount 3.362 million Lari from both the income and expenditure sides of the Kazbegi budget.

The second problem is related to data for the autonomous republic of Ajara[57]. The data on budget expenditures available at the Ministry of Finance for Ajara cover only the first 9 months of 2000. The data for budget revenue are available for the whole year, however they are not reliable since they show actual income of 83 million Lari, which is much higher then the planned income of 58 million Lari. In order to obtain a more realistic estimate of expenditures for the whole year, some approximation procedure has to be used. We assume therefore that the total actual revenues fall short of the planned revenues by

[56] See the analysis offered in Urban Institute 2001.
[57] See Section 2 for some remarks on Ajara data.

10%, as is the average for Georgia. We assume moreover that total revenues equal total actual expenditures. Further we assume that the percentage of education spending in Ajara during the first 9 months is maintained also in the last quarter of 2000 (this assumption is justified in that it reflects the overall structure of the Ajara budget on the expenditures side, however it can be questioned, because the structure of expenditures in the last quarter of the year is usually different, due for instance to heating costs). In this way we obtain an estimate of revenues listed in table 2 and of spending listed in Table 4, an estimate that has to be treated with caution.

The third issue we address here is the estimate of rayon spending on general education schools. We have the data for total expenditures and for the education expenditures for 2000, but not for expenditures for general education schools (which are our primary object of interest), nor for other items, such as preschools, boarding houses, extra-school activities and so on. However, we have these data for 1999, summarized by the following table[58]:

Table 11. Expenditures by education institution type (1999)

	expenditures	share
Pre-school organizations	9 628 730	12.73%
children palaces	290 819	0.38%
secondary schools (including specialized schools)	57 537 120	76.09%
special schools with boarding houses	727 525	0.96%
exstra-school activities	5 884 536	7.78%
professional-technical schools	999 030	1.32%
Secondary schools with prolonged teaching day	545 735	0.72%
Total	75 613 495	100.00%

We see that the three main items are the general education schools, preschools and extra-school activities. From Table 13 we see that preschool enrollment is about 9% of all enrollment. The data for 1999 obtained from the Ministry of Finance also show that the average per student spending in

[58] Based on data obtained from Ministry of Finance. These data include enrollment. Unfortunately, this data is difficult to reconcile with the 2000 data, which we use throughout this report. For instance, some of the schools listed in table above, such as vocational schools, seem to be financed directly by the state budget. It also uses a different categorization of education institutions, see for instance Table 14 below.

preschools was 135 Lari, while in general education schools it was 83 Lari. We estimate that per student provision of preschool education costs about 160% of the provision of general education education. We use the following formula to estimate the expenditures on general education schools in 2000: we divide the total education spending for each rayon by the sum of general education school students and preschool students (taken with weight 1.6), and multiply it by the general education schools enrollment. In this calculation we ignore the extra-school activities (whose geographical distribution requires a separate analysis), and other, insignificant functions.

It may be useful to comment that over 30% of preschool students are concentrated in Tbilisi, and the rest is largely located in large cities. Hence a procedure similar to the one we used is necessary, otherwise we might seriously overestimate the per student spending of the cities on general education schools. Even with this procedure that spending is quite substantial in comparison to rural rayons.

Appendix B. Georgian Teachers: Pay-scale and Working Conditions

The teachers' pay scale is established by the national government, more precisely by the Presidential decree. There are some rules for raising the teacher salaries in mountain areas, based on the altitude of the school location. Thus above 1500 meters the teachers salaries are multiplied by 1.2, above 2000 meters by 1.3 and above 2500 meters by 1.4 with respect to their standard levels. Moreover some cities increase the teachers' wages from their general income[59].

There was an attempt to introduce a certification of teachers into 4 categories, but there were some irregularities in the testing process in 1997 and 1999 and the program was temporarily abandoned. There is ambivalence among the rayon officials as to whether the categories assigned to particular teachers reflected properly their level and quality of teaching. Some officials have argued that the rules of categorization were either too formal or loosely applied. The monthly salaries of the four categories are as follows (in Lari):

Table 12. Teacher salaries by teacher category

No category	35
2'nd category	42.5
1'st category	52.5
Higher category	70

The highest category teacher earns significantly below the monthly subsistence wage, which in 1999 was estimated by the Georgian Center for Strategic Research and Development to amount to 102 Lari[60]. A school director may earn between 39 and 60 Lari depending on the school size (for schools with less than 880 students, that is for vast majority of Georgian schools, the director's salary is 39 Lari).

According to official data for 1999 the average monthly income in the education sector (including non teachers) was 44 Lari[61]. In 1999 and 2000, many

[59] We have been informed that the cities Tbilisi, Poti and Rustavi increase the salaries of their teachers above the standard.

[60] See UNDP 1999.

[61] See State Department for Statistics 2000. Interestingly, the average salary for women was 40 Lari and for men, 54 Lari. This means that men (about 28% of employees) tend to have more senior positions, such as school directors and their deputies.

rayons couldn't pay teacher wages and arrears mounted, especially in poorer rayons. In the sector of state financed general education schools, in September the per employee average arrears 2000 for all staff exceeded two months' pay[62].

The teachers can continue working well beyond the official retirement age (60 for women, 65 for men), and there are many active teachers aged 70 or more[63]. One of the strong motivation for working on is the extremely low level of old age pensions in Georgia, since a retired teacher may receive 14 Lari per month. However, the retention of older teachers reduces the inflow of younger, more recently trained entrants into the profession.

Of course, the low level of the teachers' salaries means that many of them have to supplement their income with additional jobs, unless their family situation allows them the luxury of working only in school. This is recognized by the school directors, who will try to arrange the working hours in such a way that the teachers have time for other employment. It is also alleged that in rural areas teachers may obtain informal payments from the parents. And finally, with the very high level of unemployment in Georgia[64], few teachers desire to leave the sector altogether, despite low wages.

The working conditions of teachers in Georgia resemble those in other post Soviet countries such as Ukraine and consist of 20 teaching hours for grades 1 to 4 and 18 teaching hours for higher grades. In practice, there are very few teachers who in fact teach only 18 hours per week, apart from school directors and their deputies, with some teachers exceeding 30 hours per week[65]. The teacher's actual salary is calculated each year based on the actual number of weekly hours taught. There are also a few teachers employed on a part time basis, and those are usually teaching specific subjects with few hours, such as human rights or graphic arts.

The number of teachers (persons, not full time equivalent) stays roughly constant. The following table gives the number of teachers and students for the last 5 years[66].

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[62] Over 8,9 million Lari in total. Estimate based on data provided in Archvadze 2001.

[63] Those experienced teachers, as long as they are physically fit, are sometimes considered better and able to teach more than the new recruits into the profession. Some of the schools find for them special niche positions, such as librarians.

[64] Estimates based on official data from State Department of Statistics give the unemployment rate at 15.9%, although many experts think it is much higher.

[65] This information is based on visits to two Tbilisi schools and may not reflect the situation in the whole country, especially in rural areas.

[66] Based on State Department for Statistic 2000, day time general schools.

Table 13. Student and teachers of regular public general education schools

	students	teachers	students per teacher
1995	701.40	83.89	8.36
1996	709.50	71.40	9.94
1997	714.60	70.20	10.18
1998	715.80	71.70	9.98
1999	707.60	71.80	9.86

The data for 1995 and 1996, which show a near 15% reduction of the teacher employment despite a growth in student numbers, seem exceptional. It seems however that since then the teacher numbers became stable. This is very interesting in view of the overall policy objective to cut the employment of the budgetary sector by 10% each year, in operation for three years now. Clearly, the teachers are able to escape the ax. On the other hand, actual reduction of even 5% would require quite a concerted action, among others a change in curriculum and changes in the teaching plan, changes in the required class sizes and similar. No such changes however were introduced, which made the whole project of teacher reduction unrealistic.

One of the problems is the strict specialization of teachers in subjects taught. This is also a rigidity inherited from the Soviet past, and it means that for instance Mathematics, Physics, and Chemistry are often taught by different persons, even if the teaching load would allow to assign these classes to one teacher. Correcting this would however require both some curricular changes and changes in teacher professional preparation.

We conclude with a brief discussion of the plans to increase student teacher ratio of Georgian school system. Such a plan is part of World Bank loan project, and also the Ministry of Education clearly intends to proceed in this direction. The question of how to achieve this has two angles. On the one hand, there is the political question of how to persuade many Georgian teachers to leave profession, especially in the light of high unemployment and very low retirement pensions. We had been told that a scheme is proposed to issue generous severance payments. How much should be paid, and to whom, is not a trivial problem.

But on the other hand we have to remember that all those teachers are actually employed and perform specific tasks in the system (as discussed in Appendix D, they mostly teach small classes). The schools will have to adjust to massive reduction of teachers. The analysis presented Appendix D shows that

one can in general point to two ways of managing the system with fewer teachers. One is to consolidate schools and increase class size (see Chart 7). It is difficult to assess how painful and costly such a process can be. Certainly, the existence of a very large number of very small schools should leave room for possible rationalization, however we had been repeatedly told that small schools in the mountains are too far apart, and the road conditions are too poor, to allow for consolidation and bussing. Moreover, this approach requires some initial investment before cost reductions can be achieved.

The other way is to reduce the rather high number of teachers per class (see Appendix D, Table 16 and the following discussion). However, already the number of teachers per class is smaller in rayons where the classes are small (see Chart 10). Moreover, this will have to be accompanied either by increased working week of teachers, or by a reduction in the weekly teaching load a student receives, which by many standards is quite significant (see Appendix F). Neither approach will be easy to implement. The teachers will have to be offered substantial wage increases if they are to accept prolongation of the working week. And any attempt to cut down program hours will be criticized as destroying the excellence of Georgian education.

Appendix C. Vocational and Minorities Education

The following table presents the structure of the Georgian education system[67], excluding tertiary education (enrollment in thousand):

Table 14. Schools and enrollment by school type, 1995—1999

	institutions		enrollment	
	1995	1999	1995	1999
Preschools	1 322	1 229	81.9	74.0
General secondary schools	3 219	3 201	710.9	714.4
Specialized secondary schools	77	85	26.9	29.9
Vocational schols	118	84	19.4	16.8
Schools with boarding houses	37	27	6.2	4.9
Special schools with boarding houses	14	14	1.1	1.7
Non public secondary schools	13	58	2.2	6.8

Apart from the general education schools (specialized and not specialized) there are also vocational schools, comprising of grades 10 and 11[68]. The number and enrollment of those schools have been steadily falling over the last 10 years, and the main reason seems to be that they used to be maintained by large Soviet enterprises and trained their personnel. When those enterprises went out of business following the collapse of the Soviet economic system, the vocational schools were taken over by the Georgian Ministry of Education, which still finances them. However Ministry of Education was not able to invest in those schools so that they could change their profiles to those more appropriate to the emerging labor market. Since the value of no longer

[67] Based on Statistical Yearbook for 2000. The data for general secondary schools here include evening and external schools, so may be different from school data contained in Table 1, or in Table 6, which use a different source of data. This is a constant source of confusion.

[68] See European Training Foundation 1999 and Seely 1999.

[69] There can be no doubt that Georgia needs a modern vocational education system, providing skills necessary in the modern labor market (computer, language and communications skills, office and accounting skills, service industry skills and similar, besides technical skills). However one wonders to what extent the present old-fashioned vocational schools can be reformed to provide those much needed skills. For instance, can the teachers be retrained, or does one need to find new teachers for this work.

required narrow vocations is rather doubtful, one cannot be surprised that the enrollment in those schools dwindled. We will not discuss in detail vocational education[69]. We note only that in many communist countries the emphasis on heavy industry led to over-financing of vocational schools, especially those linked to major state companies. A direct comparison of Table 11 and Table 14 is methodologically doubtful, because of different classifications used[70]. It shows, however, that per student spending of general education schools comes out as 77 Lari per year, and for vocational schools as 59 Lari per year suggesting the contrary situation: that Georgian vocational schools are perhaps under-funded. It is worth investigating in detail how the vocational schools are financed today.

Another type of schools beyond the scope of the present report is the special schools. Georgia does not have an efficient system for diagnosing specific learning disorders, or of students needing special education. There are a few schools for the blind, the deaf, the mentally retarded, all directly financed by Ministry of Education.

Non-public school sector is very small and the available data exceedingly unreliable. It seems that not all non-public schools submit their required statistical forms, and the reporting procedure for them is different from that of public school[71]. Since non-public schools do not receive public subsidies, they are not discussed here[72].

As Georgia is a multiethnic country, with important national minorities of Armenians (8.1% in 1989), Russians (6.3%), Azeri (5.7%), Ossetians (3%), Greeks (1.8%) and Abkhazs (1.8%), there is a developed system of school teaching in minority languages. Of the day-time general education school enrollment in the school year 1999/2000, 5.8% were taught in Russian, 5.6% in Azeri and 3.8% in Armenian, with a total of over 15% students learning in a language other than Georgian[73]. There are also 137 schools teaching in two languages (of which 97 teaching in Georgian and Russian), and 3 school teaching in three languages[74]. Although the management and financing of schools for

[70] See also footnote 51.

[71] Public schools submit their form to the main Center of SITU Informatics by the Ministry of Education, while the non-public schools to the State Department of Statistics. The cooperation of the two institutions could be enhanced.

[72] We also do not discuss private expenses of Georgian population on education. For a very interesting analysis, see Archvadze 2001.

[73] Based on Statistical Yearbook for 2000.

[74] Based on Main Center of SITU 2001.

minorities is a major issue involving equity and equal access to education, we have nothing to say about those schools in the present report.

About 77 thousand students of general schools (11% of all enrollment) attend schools with two shifts, due to overcrowding. Those schools are concentrated in large cities: Tbilisi (27 thousand), Batumi and Rustavi (6 thousand), Kutaisi and Gori (4 thousand). Thus we see coexistence in Georgia of extremely small rural schools, with hardly enough students to organize a proper class, and very large urban schools, with over 1500 students crammed in insufficient buildings, with very large classes and operating double shifts to meet the demand (see Table 18).

Appendix D. Student Teacher Ratio of General Education Schools

The mainstream school system in Georgia, as shown in Section 3, consists of general education schools teaching grades 1 through 11. We now take a closer look at the very low student teacher ratio, already noted in Table 7 and Table 13.

The following table gives basic non financial information for general education schools in 2000 by region[75].

Table 15. Students and teachers by region

	schools	students	teachers	classes
Tbilisi	201	157 342	11 724	5 597
Ajara	401	68 363	7 219	4 125
Guria	154	21 962	2 756	1 492
Racha-Lechkhumi & Kvemo Svaneti	117	6 560	1 380	881
Samegrelo Zemo Svaneti	415	67 152	7 747	4 228
Imereti	522	109 558	11 952	6 064
Kakheti	252	62 671	6 848	3 241
Mtskheta-Mtianeti	201	20 580	2 614	1 616
Samckhe-Djavakheti	256	39 650	4 941	2 798
Kvemo Kartli	349	85 820	8 292	4 519
Shida Kartli	252	53 441	5 497	2 825
Georgia	3 120	693 099	70 970	37 386

The numbers of students per teacher, as reported in Table 13 above, are very small by international comparisons. OECD countries have on average about 17 students per teacher in primary education and 15 students per teacher in general education[76]. Moreover, the student teacher ratio varies significantly between rayons and even regions. The following table gives the appropriate data for regions.

[75] Based on Main Center of SITU 2001. As already argued above, these data are not comparable to data of State Department for Statistic 2000, which in particular are not broken by rayons.

[76] Including the rural areas, see OECD 2000. Poland has on average 16 students per teacher in primary schools (and less then 14 in rural primary schools), and about 20 students per teacher in general academic secondary schools, see Levitas, Herczyński 2001.

Table 16. Student teacher ratio and other education ratios by region

	school size	class size	students per teacher	teachers per class
Tbilisi	782.80	28.11	13.42	2.09
Ajara	170.48	16.57	9.47	1.75
Guria	142.61	14.72	7.97	1.85
Racha-Lechkhumi & Kvemo Svaneti	56.07	7.45	4.75	1.57
Samegrelo Zemo Svaneti	161.81	15.88	8.67	1.83
Imereti	209.88	18.07	9.17	1.97
Kakheti	248.69	19.34	9.15	2.11
Mtskheta-Mtianeti	102.39	12.74	7.87	1.62
Samckhe-Djavakheti	154.88	14.17	8.02	1.77
Kvemo Kartli	245.90	18.99	10.35	1.83
Shida Kartli	212.07	18.92	9.72	1.95
Georgia	222.15	18.54	9.77	1.90

A small mountainous region of Racha-Lechkhumi stands out with less then 5 students per teacher and average school size of 56. Mtskheta-Mtianeti is another small region located in the mountains. On the other hand, the capital city of Tbilisi finds it easy to achieve large size of school and highest number of students per teacher in the country, namely 13. We note, however, that also this is rather small by international standards. For rayons, student teacher ratio varies from 4.38 in Ambrolauri (Racha-Lechkhumi region) to 14.26 in Rustavi (Kvemo Kartli region), over four-fold difference.

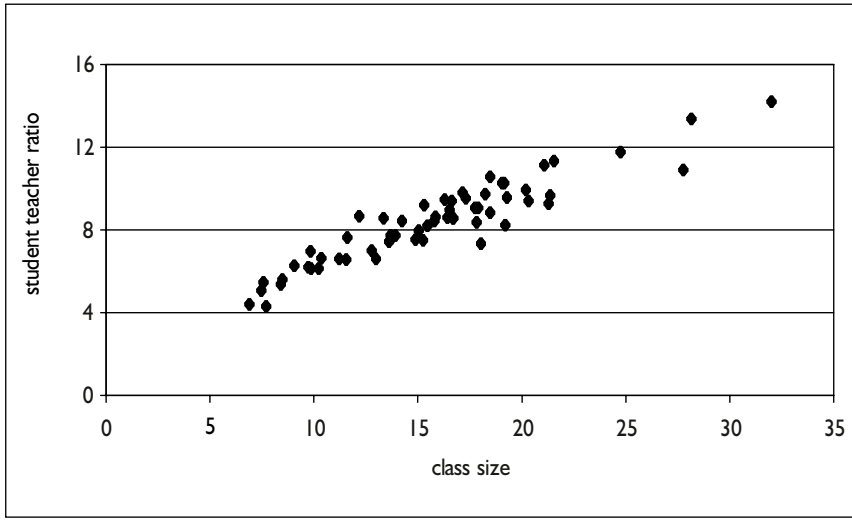
The average class size in Georgia is 18, but there are many rayons with average class sizes below 15, meaning that there are many schools there with even smaller classes. In Poland, as a comparison, average class size is 24 in primary schools in the cities and 18 in villages, and close to 30 in general education school (there are no OECD comparisons here, because the class systems are differently defined).

The number of teachers per class also shows surprising variation between rayons and even regions (as seen from Chart 10 below, for rayons it varies between 1.5 and 2.5). This ratio is very high indeed, for example in Polish primary schools it is equal about 1.39 in rural school and 1.45 in the cities, a much lower ratio[77]. We will return to this issue below.

[77] See Levitas, Herczyński 2001.

Thus we see main variables driving the student teacher ratio are the class size and the number of teachers per class. The class size is dominant variable here, as the following chart testifies[78]:

Chart 7. Class size and student teacher ratio



As expected, we see almost linear dependence of student teacher ratio on class size (correlation coefficient R=0.94).

The class size is related to the school size, as in small schools it is very difficult to organize classes of reasonable size. Chart 8 demonstrates the relationship between those two variables.

The very large number of small schools may be surprising given the fact that general education school cover grades 1 through 11. If we look at Table 6 again, however, we see that nearly half of all schools are elementary and basic schools. 800 elementary school have on average 25 students in four grades (average 8 students per grade), while 705 basic schools have on average 120 students (average 13 students per grade).

However it is not only the class size that is behind the extremely low student teacher ratio. The other important variable is the program hours and the average hours of teaching a teacher has. Unfortunately, these data are not

[78] This and the following charts are based on Main Center of SITU 2001.

Chart 8. School size and class size

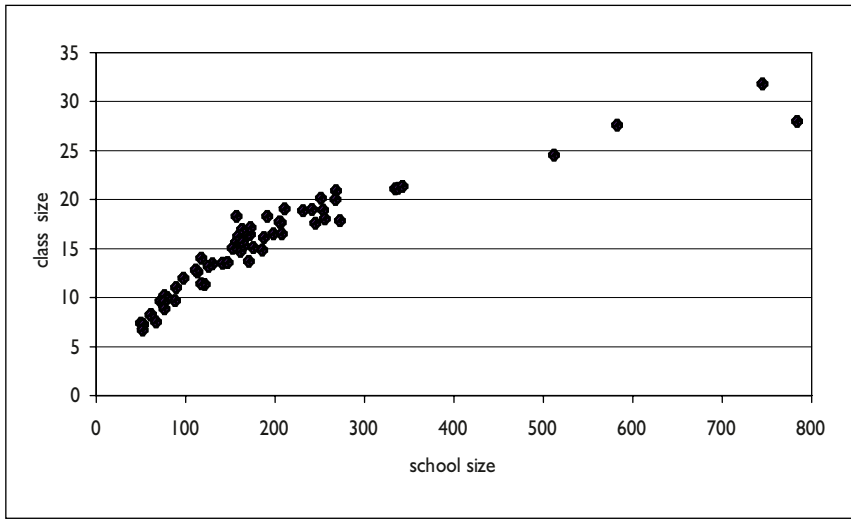
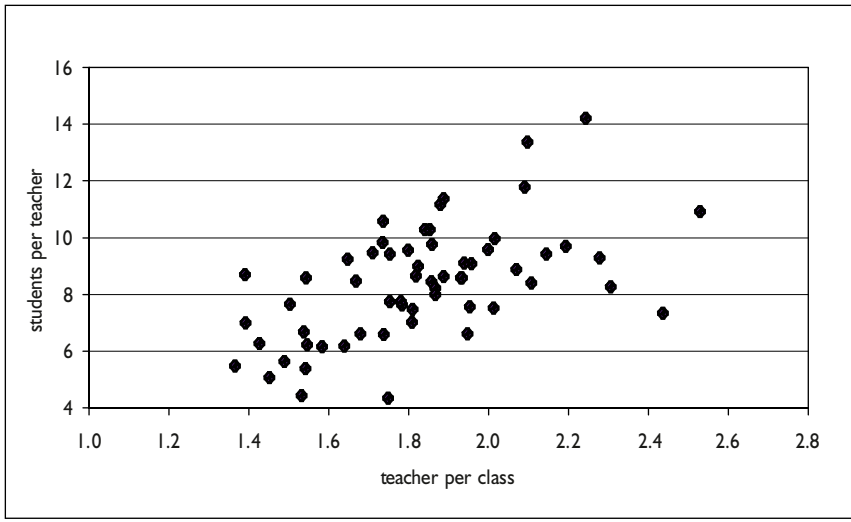


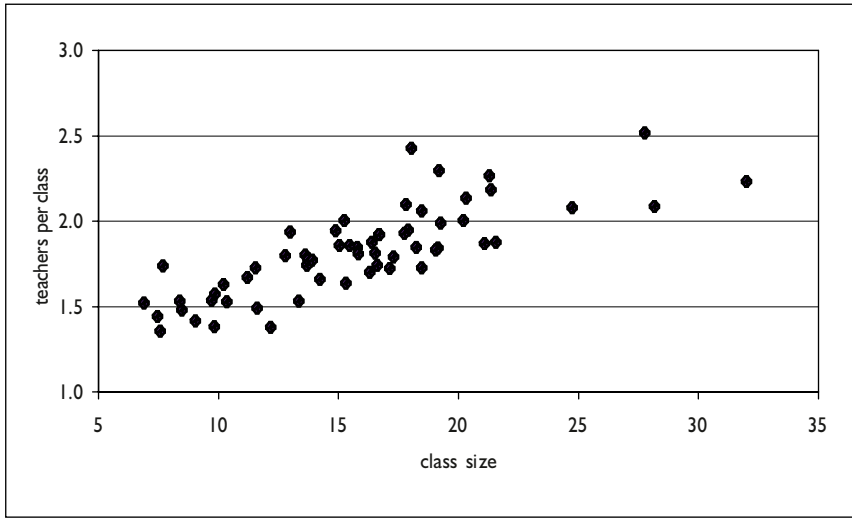
Chart 9. Teachers per class and student teacher ratio



available for the rayons. As a proxy measure we can use the number of teachers per class[79] (that measure is rather deficient, but is the only one we can actually use). Chart 9 shows the relationship between the teachers per class and the student teacher ratio.

This chart is somewhat surprising in that increased number of teachers per class is correlated positively, albeit not very strongly (correlation coefficient R=0.56) with increased student teacher ratio. One would expect in fact the opposite trend, namely that if there are fewer teachers per class, the student teacher ratio goes up[80]. The explanation for this lies in the relationship between the class size and teacher per class ratio, as seen from the following chart.

Chart 10. Class size and teachers per class



There is a strong positive correlation between the class size and the number of teachers per class (correlation coefficient R=0.81). The larger the class, the more teachers teach it. This is surprising. On programmatic level, there should not be any difference, since each class for a given grade should receive the same number of program hours of teaching, as set by Ministry of Education. Moreover, one of the most usual explanation for the low student teacher ratio

[79] See Appendix E for relationship between teachers per class and teaching time, for a sample of Tbilisi schools.

[80] That expected, opposite trend is evident in the sample of Tbilisi schools, see Appendix E.

for small classes offered is that a small school with small classes finds it more difficult to fully employ teachers, so it employs more part time teachers, and the number of teachers grows[81]. Obviously, even if that happens, it is not the dominant influence. We can advance a number of reasons for the opposite behavior exhibited in Chart 10:

- In small schools with very small classes, there are more joint classes (simultaneous teaching of different grades in the same classroom), reducing the number of teachers employed.
- In large schools with large classes there is much more splitting of classes into groups for some subjects (Georgian, foreign languages, others), requiring more teachers per class. Thus even if the total teaching time for student remains similar, the conditions and quality of education delivery is improved.
- In large schools, there are more non teaching pedagogical personnel (such as psychologist or librarian), and more teachers with administrative functions (deputy school directors and similar) and shorter teaching time, which increases the teacher per class ratio.
- Poorer rayons with smaller classes find it more difficult to pay for the required number of teachers and are forced to cut down the teaching time for their students, in violation of programmatic standards.

It is clear that each of the explanations listed above, which are by no means mutually exclusive or exhaustive, has quite different impact on possible reform measures. This issue therefore needs more detailed examination, using data and information presently unavailable. However, one thing is very clear: the rayons with small classes (and hence with low student teacher ratio and high per student costs) respond to financial stress by reducing the number of teachers per class. The variation of that variable seen in Chart 10 is rather extreme, from 1.36 in Akhalgori (Mtskheta-Mtianeti region) to 2.53 in Kutaisi (Imereti region), the difference of 86%. Had this variable been more uniform across Georgia, the variation of student teacher ratio would become even more wild.

Analysis of a sample of Tbilisi schools, see Appendix E, suggests that this variable is related to teaching time a class receives. If that relationship holds true for all Georgia, there are grounds to believe that small school students receive

[81] See for instance Grdzelidze 1998. Conversely, in the cities, where schools and classes are larger, there is less need to employ part time teachers, and this should lower the number of teachers per class.

education of lower quality. This is so despite much larger per student education input (as measured by much lower student teacher ratio) and higher per student costs.

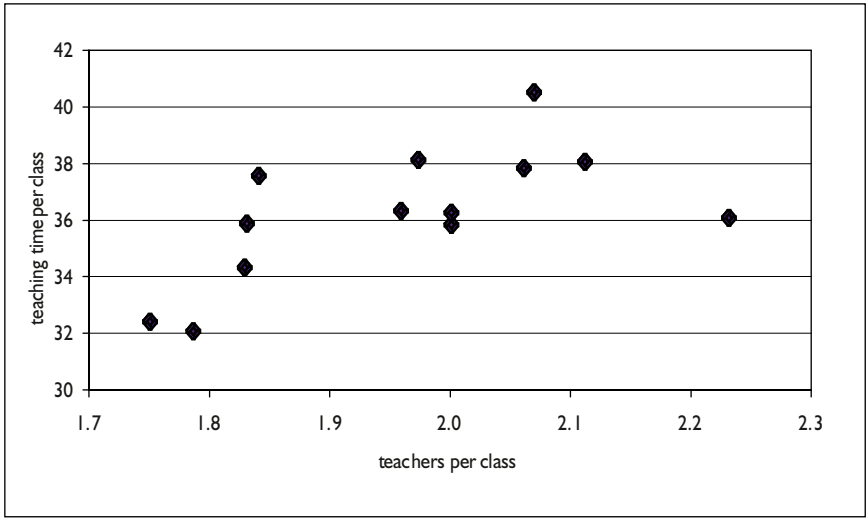
Thus, from the equity point of view, the variation exhibited in Chart 10 is disquieting. It seems to suggest that the tarification process and other administrative controls are not able to ensure equal teaching standards across Georgia, even in the variable directly regulated by tarification process, namely teaching time. And we have to remember that this chart shows average data for rayons. For individual schools we can expect that teachers per class and teaching time vary even more significantly.

Appendix E. Analysis of a Sample of Tbilisi Schools

In this Appendix we provide analysis of a sample of 13 Tbilisi general education schools. For those schools we have more detailed data, including teaching time[82]. The data used are listed at the end of the Appendix. Therefore we are able to obtain a deeper insight into the functioning of those schools. The small number of schools does not permit to reach firm conclusions, but the findings are quite interesting and deserve attention.

The first question concerns to what extent the number of teachers per class corresponds to the teaching time received by a class (this includes the program contact time of a student and the number of split hours, that is of lessons taught classes split into smaller groups). The following chart shows the relation of those variables.

Chart 11. Teachers per class versus teaching time in Tbilisi



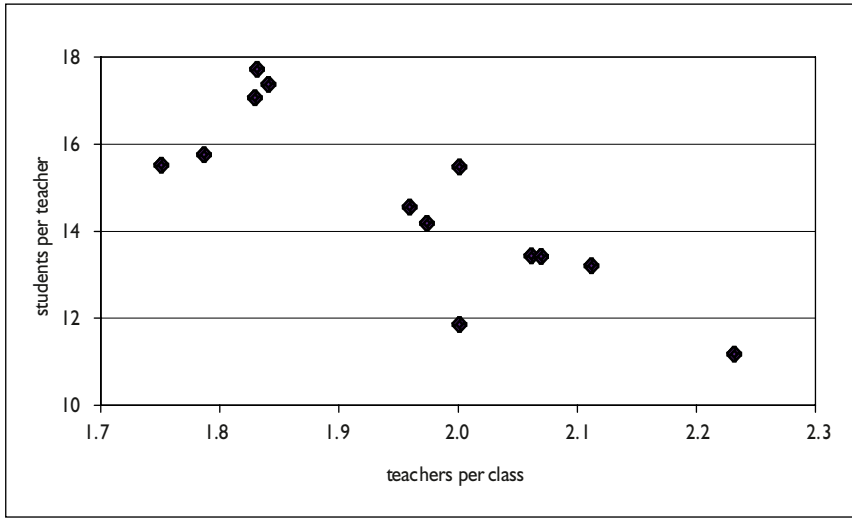
We can see that there is a correlation between teachers per class and teaching time per class (correlation coefficient R=0.63). This lends some support to the analysis in Appendix D, where we used teacher per class as a proxy measure of education effort (assuming that Tbilisi schools are not

[82] The data has been compiled by Education Department, City of Tbilisi. I thank Sergo Durglishvili for providing these data and discussing them with me.

exceptional in that respect). Thus we can conclude that the variation of teachers per class may point to variation of teaching time, and hence of education quality.

As in the rest of Georgia, see Chart 7, Tbilisi schools exhibit strong positive correlation between the class size and students per teacher (correlation coefficient R=0.90). However, in at least one respect the Tbilisi schools are different from the rest of the country, namely unlike the behavior shown in Chart 9, teachers per class is related in an expected way, that is negatively, with the students per teacher (the more teachers teach a class, the fewer there are students per teacher, correlation coefficient R=-0.83). This is the evident in the following chart:

Chart 12. Teacher per class versus student per teacher in Tbilisi

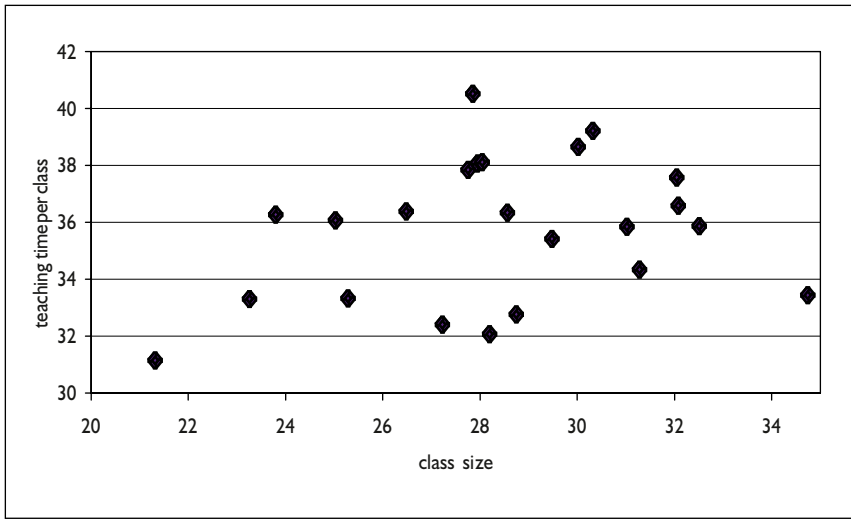


We stress that this behavior is not related to uniformity of class sizes: the tables below show that the class size in the selected sample varies from 23 to 32.

Also unlike for all Georgia, see Chart 10, class size in Tbilisi schools is negatively correlated with teachers per class, though the correlation is not strong.

Finally, in a very important finding, we show that the class size is **not** related to the average teaching time per class (we use a larger sample of 23 Tbilisi schools).

Chart 13. Class size versus teaching time in Tbilisi schools



This chart is very interesting in that there is no indication that larger classes have more split teaching time (which would increase total teaching time a class receives). We conclude that of the two (related) variables driving the student teacher ratio, namely the class size and teachers per class, only the latter corresponds to the education effort of the school. We note, once again, the weakness of administrative controls in Georgian education.

We thus see that teacher employment and deployment depends on school specific factors, of which the main must be the ability of the school director to secure official and unofficial resources for his school, and not on education policy objectives of the city or of the Ministry of Education.

Finally, we list the data used in the present Appendix. The sample covers 12.5 thousand students (nearly 8% of Tbilisi enrollment). The schools have been coded. FTE teachers are calculated on the basis of teaching time for each teacher, the last column gives the number of persons. Teaching time is the total number of weakly teaching conducted in the school, and represents true education effort of the school. The last row gives averages for schools.

The following table contains some education ratios for these schools. The last row gives the average indexes for all 13 schools.

Table 17. Data for selected Tbilisi schools

School	classes	students	teaching time	FTE teaching	teachers
A	35	1 085	1 256	67.64	70
B	27	754	1 029	55.85	57
C	28	789	899	48.31	50
D	35	1 094	1 203	64.95	64
E	24	653	779	41.58	42
F	37	1 037	1 412	76.55	73
G	24	685	873	46.98	47
H	33	915	1 250	67.80	68
I	50	1 601	1 881	101.70	92
J	29	807	1 176	63.50	60
K	36	856	1 307	70.00	72
L	13	325	470	23.48	29
M	59	1 917	2 119	113.00	108
Total	430	12 518	15 654	841.34	832
average	33.08	962.92	1 204.12	64.72	64.00

Table 18. Education ratios for selected Tbilisi schools

School	classe size	student per teacher	teachers per class	teaching hours per class	teaching hours per FTE teacher	teaching time per teacher
A	31.00	15.50	2.00	35.89	18.57	17.94
B	27.93	13.23	2.11	38.11	18.42	18.05
C	28.18	15.78	1.79	32.11	18.61	17.98
D	31.26	17.09	1.83	34.37	18.52	18.80
E	27.21	15.55	1.75	32.46	18.73	18.55
F	28.03	14.21	1.97	38.16	18.45	19.34
G	28.54	14.57	1.96	36.38	18.58	18.57
H	27.73	13.46	2.06	37.88	18.44	18.38
I	32.02	17.40	1.84	37.62	18.50	20.45
J	27.83	13.45	2.07	40.55	18.52	19.60
K	23.78	11.89	2.00	36.31	18.67	18.15
L	25.00	11.21	2.23	36.12	20.00	16.19
M	32.49	17.75	1.83	35.92	18.75	19.62
average	29.11	15.05	1.93	36.40	18.61	18.81

Appendix F. Teaching Plan of Georgian Schools

The following is a sample teaching plan, used in Gymnasium No 7 in Tbilisi, for classes with specialized teaching of foreign languages. The weekly hours for particular subjects will be different for other specialized and non specialized secondary schools, but the overall teaching time per grade is usually the same.

The classes may be split into groups for Georgian language and literature and for foreign languages, if the class size exceeds 26.

	Weekly hours for each grade											
Subject	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	total
Native Language	8	9	8	8	4	3	3	3	2	1	1	50
Native Literature					4	3	3	2	3	4	4	23
Mathematics	5	5	5	5	5	5	5	5	5	4	4	53
Russian			4	4	3	3	2	3	2	2	2	25
English		3	3	4	4	5	5	5	4	4	4	41
German					2	3	3	3	3	2	2	18
History of Georgia					2		2	2	2	2	2	12
History of World						2	2	2	1	3	3	13
Geography of Georgia								2	1			3
Human Rights				1					1		1	3
Geography						2	2		1	1		6
Biology						2	2	2	2	1	1	10
Physics - Astronomy							2	2	3	3	3	13
Chemistry							2	2	2	2	2	10
Nature knowledge		1	1	2	2							6
Art.	2	1	1	1	1							6
Mythology						2						2
Music	2	2	2	1	1							8
Work	1	1	1	1								4
Basics of Georgian Law									1			1
Informatics										1	1	2
Public knowledge										1	1	2
Military preparation										2	2	4
Sport classes	2	2	2	2	2	1	1	1	1	1	1	16
Total	20	24	27	29	30	31	34	34	34	34	34	331

Appendix G. List of Persons Interviewed

Koba Arabuli, Caucasian Highlands Center of Sustainable Development DECA,
Sergo Durglishvili, Director of Gymnasium No. 7, Tbilisi,
Tina Dzavachishvili, Head of Education Division, Kakheti Region,
Givi Erkomaishvili, Chief Government Advisor, Ministry of Finance,
Georgi Gambashidze, Director of Secondary School No. 182 in Tbilisi,
Razhden Geladze, State Department of Statistics, Education Division,
Rusudan Gorgiladze, Deputy Minister of Education,
Nicholas Gvishiani, Budget and Finance Adviser, Urban Institute, Georgia,
Gia Gvaramia, Head of the Main Center of SITU, Ministry of Education,
Elene Imnadze, World Bank, Resident Mission Georgia,
Anzor Matkava, Head of Department of Local Budgets, Ministry of Finance,
Lea Munlauri, Head of Education Division, Telavi Rayon,
Maia Narozauli, Head of Finance Division, Telavi Rayon,
Alexander Rondeli, Georgian Foundation for Strategic and International Studies,
Zurab Sajaia, State Department of Statistics, National Accounts Division,
Vova Sanadze, Deputy Minister of Education,
Martha Sickles, Head, Urban Institute, Georgia,
Revaz Tsakadze, State Department of Statistics, National Accounts Division,
Merabi Tukareli, Head of Finance Division, the city Mtskheta,
Alexander Tvalchrelidze, International Chamber of Commerce in Georgia,
Gela Zandarashvili, Head of Rayon Financial Division, Mtskheta Rayon.