Per Student Financing in ECA School Systems

Larry Forgy

Key Messages

- Declining school age populations in many ECA countries resulted in too many schools and teachers, with higher spending per student but not necessarily better learning outcomes.
- A per student financing approach in allocating education budgets is being used by several countries to address some of these issues.
- Preliminary evidence indicates that efficiency, quality and equity improvements are possible, but not guaranteed. School consolidations and teacher reductions vary widely across countries.
- The details of financing reforms can have a large impact on success. Fine tuning of features, alignment of incentives, and attention to the dynamics of transition can deliver strongly positive results.

Introduction

By the turn of the century, the decreasing efficiency and deteriorating quality of education systems in Eastern Europe and Central Asia (ECA) had reached a critical point. Many countries were facing serious resource allocation problems in general education. While the region had seen sweeping political, economic and population changes, countries continued to manage schools with traditional and centralized institutions. Budgets were allocated on the basis of past history, even as school age populations declined and moved. Consequently, the region had an excessive number of schools, with very low student/teacher ratios. For example, 47 percent of all schools in Armenia had less than 300 students by 2003, and Lithuania averaged only 12 students per teacher from 2000-2005.

What is Per Student Financing?

To address these problems, many ECA countries have been adopting the ‘per student financing approach’, a type of ‘formula funding’ in which school budgets are allocated according to a written rule (See Box 1). The concept behind per student financing is straightforward. Instead of detailed budgets with fixed categories decided by central governments, local authorities and/or schools are given fixed amounts of financing based on the numbers of students enrolled in their systems. The assumption is that local authorities and schools have

Box 1: Why Per Student Financing?

Per student financing is a key organizing principle in a set of reforms in general education, designed to improve quality and efficiency. Along with a capitation finance rule, local authorities are given some autonomy in the use of resources, and are expected to conform to adequate accountability mechanisms.

These components form the framework for the effective decentralization of the education systems in ECA. They equip local authorities with the ability to efficiently manage their resources, and give central authorities the tools with which they can structure finance rules and accountability mechanisms for managing incentives with their local partners.

Rule based school financing has been an important component in decentralizing education, and the increased budgeting control has strengthened the capacity of local governments. A case study of school finance in Poland, for example, noted that decentralizing general education contributed to the development of local democratic institutions.

1 This note is based on a forthcoming regional study entitled ‘Per Student Financing of General Education in Europe and Central Asia’ by Dina Abu-Ghaida. Mamta Murthi, Lars Sondergaard and Sachiko Kataoka of The World Bank also contributed to the writing of this note.
better understanding of how budgets should be allocated, as well as the incentives to allocate them efficiently. The expected outcome is that the same size budgets under local control will produce better quality education. Using a rule-based financing system can also reduce the idiosyncratic element in school financing under which some schools are rewarded more than others.

Too Many Teachers, Too Many Schools

Education systems in most ECA countries have become expensive over time because school age populations have declined. However, school networks have not adjusted to this new reality. For example, Armenia’s student population declined by 20 percent between 2000 and 2007 and, during the same period, student populations in Poland fell by 19 percent, in Estonia by 21 percent, in Lithuania by 12 percent, and in the Russian state of Tver Oblast by 14.5 percent. Despite these decreases, school closures were modest. Although teaching staff were also reduced, the cutbacks did not keep pace with the decline in student populations. The result was small class sizes—average class sizes today in Poland, Serbia and Azerbaijan are 20, 19 and 17, respectively, compared to 26 in Argentina, 30 in Chile and 22 in France and Germany.

On their own, low student teacher ratios and numerous schools would appear to indicate high quality school systems with broad reach. The reality, however, is quite different. Teacher salaries are low and many high quality teachers have left their jobs. Despite low salaries, the school systems have excess teaching staff and are forced to spend disproportionate amounts of their budgets on salaries, leaving little for infrastructure maintenance and non-teaching inputs. In Poland and Azerbaijan, personnel costs consume 78 percent and 80 percent of the total spending on education, respectively.

The Impact of Per Student Financing So Far

The World Bank conducted case studies in six regional countries that have implemented some form of per student financing: Armenia, Estonia, Georgia, Lithuania, Poland, and Russia. The Bank is also supporting the implementation of per student financing in Bulgaria, Tajikistan, Uzbekistan, Kyrgyzstan, Romania, Moldova, and Kosovo. Per student financing has been examined in several Bank Public Expenditure Reviews across ECA, including in Bulgaria and Romania.

These studies and reviews show mixed results across the different objectives of per student finance and different ECA countries. As mentioned earlier, one of the key objectives of this type of funding is to achieve greater efficiency in the education systems by consolidating schools and intensively using smaller numbers of quality teachers. Over five years, Poland reduced its number of primary schools by 10 percent, Lithuania reduced its small primary schools from 808 to 114, and the Russian Chuvash Republic reduced its total number of schools by 18 percent. However, Estonia and Armenia showed little reductions in their school numbers. The second measure of efficiency, reductions in teaching staff, was more difficult to achieve. Local authorities, particularly school principals in many countries, faced pressures in making teachers redundant. Armenia had some success: it was able to reduce its teaching staff by 35 percent by offering a generous package of training and payments for severance, relocation, and small business start-up support. In Poland, on the other hand, a strong teachers’ charter and teachers union prevented significant redundancies from taking place.

Variations in the performance of the ‘per student financing approach’ in different countries can be attributed to different methods of implementation. Several variables (the most important are listed in Box 2) can dramatically affect success or failure in a change of this magnitude. Local recipients of the budget funds had a large impact on school consolidation—for example, school principals were more reluctant to close schools than local governments.

Box 2: Components of a Per Student Financing Plan

Though simple in concept, there are a number of issues to be addressed in implementation. The following major features are to be determined as a part of implementation design:

- Local Recipients: municipalities, local governments, local school administrations, or the schools themselves.
- Coverage: operating expenses, capital costs, or salaries only.
- Local Flexibility: lump sum payments, earmarks, guidelines, approval requirements.
- Use of Local Resources: requirements from local resources, ability of local resource supplements.
- Adjustments to Grants: changes to grants for local variations in costs, geography, students (ethnicity, language, socioeconomic, special needs).
- Accountability: measurement of output (quality of education), auditing, reporting.
Among the indicators of increased efficiency are lower costs, improved quality of education, or both. With budget amounts set by funding formulas, local authorities might be expected to use the increased efficiency to improve the quality of education. There has been no systematic investigation of whether this has in fact happened, or if there have been changes in the quality of educational output. However, there are several examples of significant changes in the region that could potentially impact educational quality.

- In Bulgaria, the introduction of per capita finance in 2007 resulted in larger classes, thereby freeing up resources for non-personnel expenditure. Non-personnel costs rose from 29 percent of total education spending in 2005 to 40 percent in 2009.
- Lithuania made changes in the entire balance of educational inputs by allocating a higher proportion of its recurrent budget to non-salary items such as textbooks, teaching aids, teacher professional development, pedagogical and psychological services, career guidance, student cognitive development, and other inputs.
- Georgia, Estonia, Poland, and Lithuania provide funding to private schools, in part to promote quality through competition for students. However, there is little hard evidence on the effect of this approach.
- Armenia has made an attempt to foster multi-grade teaching for more intense use of teachers. However, no corresponding data on student performance has been collected to monitor the success of this endeavor.

### Adjusting Per Student Finance Issues: Accountability, Transparency, Equity

As control of resources shifts within education systems, several desirable features have to be designed into per student finance, including accountability for resources, transparency of operations, and equity across student populations. When local governments are given discretionary use of funds, they must also be held accountable for them. This feature of ‘formula funding’ based decentralization is still evolving in ECA countries. Ideally, schools should be accountable for output-based results, such as number of graduates, standardized performance tests, or other measures. Some adjustments have been made to the formulas for school leavers (school dropouts), and international exam results show improvements in some areas. The accountability of local officials, however, has mostly been of the financial auditing type. Central governments can limit the discretionary allocation of funds by local authorities in order to ensure transparency in the operation of the funding formulas and enforcing accountability. Moreover, greater transparency will help to limit ‘gaming’ of the system by school principals who might, for example, create many small classes to exploit adjustments in the number of classes.

One way to promote accountability, even with a complicated formula, is to create a transparent process for applying the rules. In Poland, for example, the annual school budgets are discussed and agreed upon in the local government councils. In Lithuania, officials arrive at an annual consensus regarding amendments to the formula. Poland is attempting to go a step further and link budgetary data with results from national tests, thus connecting both financial and quality measures of accountability.

Per student financing can improve equity by treating equal students equally (horizontal equity), but needs many adjustments to treat students with different levels of need (vertical equity) fairly. Overall, per student financing has improved horizontal equity in the region. Inequities were exacerbated, however, when local governments, such as in Poland and Estonia, were allowed to supplement the per student revenues from the central governments. This created a difficult problem of balancing incentives, which should not discourage the use of local resources for education, even while attempting to create equity.

Vertical equity requires that students in high cost areas or in expensive programs receive more funding than other students. Examples are rural schools with low population density and high transport costs, special needs students, or students in areas with multiple languages or significant migrant populations. To accommodate these variations, all six countries made several adjustments to their per student financing formulas. The case studies identified large variations in funding based on these adjustments, indicating significant attention to vertical equity. However, the studies also found that virtually all the adjustments were based on variations in school costs, with almost no adjustments made based on the socioeconomic status of the students (such as levels of poverty) within local school areas.

### The Dynamics of Reform and Per Student Finance

ECA countries have to take into consideration how the transition is accomplished when moving to ‘formula based funding’ from input-based, or normative budgeting. Stakeholders can have different incentives during the transition than when the finance reform is completed. A good example of this is the problem of school closings. In many countries, parental support for
local schools made the elimination of small, high cost, rural schools politically difficult. When schools receive block grants and are given financial autonomy, the school principals have an incentive to increase class sizes by consolidating small classes, but they are not likely to volunteer to close their schools. For school consolidations to happen there must be a layer above schools—in most cases local governments—which is given the financial incentive and authority to do so. For example, in Armenia, because the central government allocated the school budget directly to schools, regional governments were not given any budget allocation authority. The latter did not have the means or incentives to consolidate schools. As a result, only less than 2 percent of the schools were closed. Recognizing this difficulty, officials in Georgia decided to go through the school consolidation process before implementing per student financing to the school level.

A similar problem arose when reducing teaching staff. In Poland, for example, a strong teachers union prevented large-scale teacher redundancies. Discussions with school officials in Bulgaria revealed that school principals are reluctant to lay off teachers, even when they have more pressing needs for the funds that go towards teacher salaries. The effects of the reform may, therefore, be path dependent. For example, some principals, unable to lay off teachers, may consolidate classes and reduce the teachers’ workloads. This could give incentives to the reduced-salary teachers to leave or retire. However, high skilled teachers, with better alternatives, will leave in greater numbers than low skilled teachers, reducing the value of this strategy.

Taking these dynamic school finance reform issues into account before formula-funding is implemented could make reforms more effective (Box 3). It is likely that several changes will have to be negotiated before formula funding programs go into effect, or are mandated to occur by central governments. It is also important to monitor and evaluate the process so that policies can be changed or buttressed if departures from intended outcomes are too great.

The experiences in ECA raise a number of questions on how best to implement per student funding, and what its long-term impact will be. A future research agenda could do well to include analysis of both historical and cross sectional data linking financing to costs, organizational issues, measures of outcomes, and quality of education.

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**Box 3: Implementing Per Student Financing**

Successful implementation of per student financing requires careful monitoring and adjustments to several facets of the reform. The performance of a school system, both during the reform implementation and afterwards, may be improved by attention to the following issues:

- **Incentives.** New financing rules will create new incentives at both the national and local levels. Moreover, the incentives during the transition may be different from the incentives after the reform has taken place.
- **Equity.** Ensuring equity across student populations is not automatic; a great deal of the complexity of formula based funding stems from attempting to ensure equity.
- **Autonomy.** The decision about who controls the budget--local government, local school system, or local principals--will have a big impact. Appropriate control of some issues can be at the national level during implementation and at the local level in the long run.
- **Stakeholders.** The interests of various stakeholder groups in education—including, parents, teachers’ organizations, local government officials, and voters--can affect the outcomes of reform.
- **Accountability.** Accountability has not been very well defined in most per student financing reforms. In addition to financial accountability, measures of cost effectiveness and quality of educational output need to be considered as well.
- **Parallel reforms.** Some changes, such as school closings, may be more easily accomplished if they are separated from the operation of school finance and imposed by the central government. Local officials may not have the political power, or the incentives, to make these changes on their own.
- **Power Sharing.** Control is best located at different levels of the educational hierarchy. Nationwide, equity cannot be a local decision. Local accountability requires some national authority.