

Chapter 3

School funding in Lithuania

This chapter presents an overview of how the school system in Lithuania is funded, including a detailed presentation of the central funding formula used to allocate funding for teaching costs (the student basket). This was a major element of a funding reform introduced in 2001, which saw the separation of teaching costs (central funding) and school maintenance costs (municipal funding). It considers the strengths and challenges inherent in the current system and makes policy recommendations designed to build on and strengthen the approach to school funding, including the need to regularly review and evaluate the adequacy and costs of funding.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Context and features

Overview of main funding channels for schools

The central government budget is the main source of funding for public education in Lithuania. However, local governments also play an important role both in providing additional funding and influencing the distribution and use of school resources. An education finance reform was enacted in 2001 and introduced in 2002, setting up an arrangement that is a unique combination of a centralised formula funding scheme and a decentralised model of financing schools. Resources are provided for and distributed among schools using three different channels: a central formula-funding scheme for teaching costs, local government funding for school maintenance and specific grants for the development of educational facilities.

Box 3.1. Aims of the 2001 education finance reform

In general, the 2001 education finance reform aimed to increase the efficiency of resource use in education and improve education quality. The following specific goals were explicitly defined (Herczyński, 2011):

- to create a transparent and fair scheme for allocating resources, with a particular emphasis on eliminating rural-urban disparities
- to strengthen the financial independence of schools and increase the responsibility of school leaders
- to promote the optimisation of local school networks and constant adjustment to the decreasing number of students
- to enhance parental school choice, school competition and the development of the non-governmental school sector
- to reduce the number of children who are not attending school.

Source: Herczyński, J. (2011), “Student basket reform in Lithuania: Fine-tuning central and local financing of education”, in J.D. Alonso and A. Sánchez (eds.), *Reforming Education Finance in Transition Countries: Six Case Studies in Per Capita Financing Systems*, <http://elibrary.worldbank.org/doi/abs/10.1596/978-0-8213-8783-2>.

Funding is built on a sharp distinction between “teaching costs”, i.e. resources directly related to the teaching process and “school maintenance costs”, that is to say, the organisation and management of the teaching environment. This distinction is critical, as teaching costs and school maintenance costs are funded by different methods and resources allocated to each category are dedicated for that use exclusively.

Central funding for “teaching costs”

The dominant share of teaching costs is comprised of teacher salaries, but also includes salaries for the school management, administration and professional support staff (e.g. librarians), textbooks for students and some school materials, teacher in-service training and pedagogical and psychological services provided by the local governments.

Teaching costs are funded from the central government budget in the form of a specific formula grant, namely the “student basket” scheme. This scheme was elaborated and introduced as the core of the education finance reform of 2001. This grant is made available to the local governments (or other school owners), not directly to the schools. It is calculated for each school separately and allows local governments to redistribute a set percentage of the funds allocated by the funding formula. It is worth noting that the funding of kindergarten education is to some extent an exception. While teaching in schools is fully covered by the student basket scheme, in the case of kindergartens it has to be supplemented by local government funding (see below).

Local funding for “school maintenance costs”

School maintenance covers salaries of the maintenance staff, communal and communication expenses (heating, electricity, telephone and Internet), student transportation (school buses) and expenditures of materials and repair works used for the maintenance of school facilities.

School maintenance expenditures are financed exclusively by the local governments (or other school owners). Local governments autonomously decide on the level of resources and their distribution among schools. This means that the central government is not directly engaged in the details of the organisation and maintenance of the schools in a given municipality. School maintenance funds are typically set by the local governments when the budget for each school is negotiated and approved.

The sources of funding are general local government revenues, i.e. no specific grants are received for this purpose from the central budget. Note that the lack of any specific grant does not imply that the school maintenance costs are funded entirely from local revenues paid by local taxpayers and firms. Aside from grants from the student basket scheme, local government revenue is comprised of shared personal income tax and other central governmental grants, property tax, other local taxes and other local revenue (e.g. user charges).

Note that local governments supplement student basket funds for kindergarten services (as the student basket covers kindergarten educational provision only for four hours per day).

Specific funding for “school investment”

The third major component of education finance in Lithuania is investment in schools and other local education facilities. The bulk of such resources come from specific central governmental and European Union (EU) Structural Fund investment grants, supplemented by local government funding. In the past years these funds were mainly allocated to the development of vocational training centres, taking about half of the funds. According to the share of funds other top priorities are the establishment of multifunctional centres in rural locations, investment in pre-school education and upgrading technology, natural sciences and arts facilities in general education.

Other sources of revenue for schools

In addition to these three channels of funding, schools have some further minor revenue sources. First, any taxpayer may transfer 2% of his/her income tax to a school. Second, in private schools parents pay tuition fees and may also contribute to school funds on a voluntary basis. It is important to note that private schools are entitled to the same funding from the student basket scheme as schools owned by local or central government. At the same time, school maintenance expenses are financed by the owner of the school, from tuition fees or other revenues. However, as the share of private schools is almost negligible (see Chapter 2), they are not discussed in detail in this chapter.

The allocation of central funds for teaching costs: the student basket funding scheme

The key component of the 2001 education finance reform was the introduction of the student basket scheme that allocates funds to cover teaching costs based on an exact formula. The major determinant of funding is the number of students in the school. The grant is calculated as a fixed per-student amount (referred to as the student basket) multiplied by the number of equivalent students.

The per-student amount is set by a complex formula, which is described in the next subsection. Note that this is given as a fixed amount in each budget year and the budget or other decisions made by the municipalities or schools are not affected directly by any single component of the formula or the method of calculation, only through the amount of the student basket. However, the values of certain coefficients are often subject to fierce policy debates at the national level when the formula is revised or updated annually.

The total funding for a school is determined not on the basis of raw enrolment figures but the number of equivalent students, i.e. a weighted sum of students. This way the funding scheme takes into account the cost differences in teaching different students. Major student characteristics considered are school year the student is enrolled in, special education needs (SEN), migrant status and national minority-language status. In addition the size, location and type of the school also affect weights.

In essence the student basket scheme can be regarded as a variant of a student voucher. The funding follows the student which was among the explicit policy goals of the reform to foster competition among schools, thus aiming to improve education quality. However, the scheme differs from a pure voucher funding in three respects. First, the grant is transferred to the local government not the individual school and local governments are entitled to redistribute a certain share of the funding across schools. Students can most often be expected to choose among schools within municipalities and this may weaken the incentives for schools to compete for resources, as far as local governments level out the funding to support schools with lower enrolments. Second, like in other education systems the voucher amount takes into account different student characteristics, however, a specific feature of the Lithuanian student basket funding scheme is that it also takes into account school size. The idea behind this is to acknowledge the legitimately higher costs of smaller schools which have lower enrolment rates due to their rural location. Unlike in a pure voucher system, local governments have some influence over the level of funding, as they can influence student enrolment and the organisation of the school network. Finally, though most of the student basket funds for teaching costs can be used autonomously by the schools, some constraints are imposed by central regulation. Minimum levels of required expenditure are set for elements such as textbooks and in-service teacher training.

The basic student basket formula

Similar to most formula funding schemes, the basic idea behind the student basket formula is to calculate the number of necessary teachers as a function of student enrolment (N). The key elements of this calculation are the number of students' teaching hours (h) set by the national curriculum, teachers' teaching hours (p) according to teacher employment and salary regulation, and a presumed class size (n) which can be interpreted either as the average size of actual classes or a target that the central government expects schools to achieve. Dividing students' hours by the number of teaching hours of full-time teachers provides the number of required teachers for an average class. Multiplying this with the inverse of the class size results in the number of required teachers (T) per student enrolled:

$$\frac{T}{N} = \frac{h}{p} \times \frac{1}{n}$$

Multiplying the number of required teachers per student by the average teacher salary results in the per student amount needed to cover teacher salaries (TS). The average teacher salary, the second term of the equation, enters into the formula as the product of the average teacher salary coefficient (R) and the fixed basic salary (B) in the public sector for 12 months, since the regulation of teacher salaries is built on this approach (see the subsection on teacher salaries below). This amount forms the core of the student basket:

$$\frac{TS}{N} = \left(\frac{h}{p} \times \frac{1}{n}\right) \times (R \times B \times 12)$$

Moreover the formula also incorporates further components, as the student basket is intended to fund other teaching costs in addition to the teacher salaries. Some of them are included as coefficients augmenting the per student grant in a multiplicative manner. Social insurance contributions (K_{socins}) and administration and library costs (K_{admlib}) are entered proportional to the required teacher salaries. At the same time the component for funding textbooks, teaching materials and municipal pedagogical and psychological services (K_{matmun}) is added independently of the number of required teachers, expressed as a percentage of the fixed basic salary. Finally, the student basket (SB) includes supplementary elements (Z), e.g. the student basket funding for non-formal education in schools:¹

$$SB = \left(\frac{h}{p} \times \frac{1}{n}\right) \times (R \times B \times 12) \times (K_{\text{socins}} + K_{\text{admlib}}) + (B \times 12) \times K_{\text{matmun}} + Z$$

Note that the calculation of the number of required teachers and the sum of their estimated salaries are derived directly from parameters of educational regulation, measured average teacher salaries and an expected class size. In contrast, the additional coefficients – with the exception of social insurance contributions – are set in a more ad hoc way. This might be one reason for policy debates often focusing on these elements.

The amount of the student basket is set every budgetary year by the central government. It has only changed marginally in the past years (NASE, 2015). After a 9% decrease from 2009 to 2010, its value remained unchanged through 2013. In 2014 it increased marginally to LTL 3 348 (EUR 970), while in 2015 its value is LTL 3 382 (EUR 980).

Finally, it is important to note that a specific student basket formula applies to vocational schools, taking into consideration cost differences of practical training in different fields as well.

Weighting factors for students and schools in the student basket scheme

The per-student student basket amount given by the formula above applies to a standard reference student who has no distinctive minority or SEN status, is studying in a class of 25 students with a weekly number of lessons equal to the Years 1-10 average.

The funding scheme acknowledges some teaching cost differences and allocates more funding for certain types of students and schools with justifiably higher costs. This is done by assigning weighting factors to these types of students and calculating the student basket funds for the weighted sum of students. The weighting for the reference student is 1, while students who are more expensive to teach are assigned a weighting factor greater than 1.

Regarding individual student characteristics, the funding scheme assigns extra weighting to students with special educational needs (1.35), migrant status (1.30) and students following instruction in a national minority language (1.20). It is important to note, that in the multi-ethnic regions of the country all students of multilingual schools are allocated minority weighting under the condition that at least 20 of the students take part in multilingual education. The OECD review team found that this ensures significantly less strain on budgets for these schools.

Weighting factors increase proportionally with the teaching load for higher school years and are inversely proportional to school size in rural areas, acknowledging higher per student costs when class size is smaller. These coefficients can be derived from the basic formula for the student basket by substituting higher values for students' weekly school hours, determined by the curricula for each school year and lower expected class sizes for small rural schools. Note that as administration costs are included in the formula proportional to the required spending on teacher salaries, higher coefficients for smaller schools do also account for higher administration spending due to fixed costs to some extent.

The small school coefficients are defined for size categories of schools. Table 3.1 depicts the weighting by school size and year, together with the expected class size for each category. Note that the school type also defines the weighting, as the number of school years can vary in different school types. For example, a total enrolment of 120 students classifies a primary school with four years as a large school, but a secondary school with ten or twelve years as a small school. Also note that, in the case of basic schools and lower years in secondary schools, the funding formula is biased for rural schools to some extent even in the category of large schools.

The degree of the preferential treatment of small rural schools was modified several times since the introduction of the reform, reflecting constant debates about the adequacy of funding for these schools. In 2004 the coefficients for the very small schools were cut by about 10% (Herczyński, 2011). Later the school size categories were also modified and a more detailed classification was established for the smallest primary and basic schools. The coefficients have been also adjusted to the new categorisation.

Certain types of schools outside the mainstream of general education are also assigned special weighting factors. Most importantly, special education schools receive student basket funding at an increased level, while lower weighting is allocated to pre-school and kindergarten education. It is important to note that, up to 2014, kindergarten was provided for only four hours per day. As many families demand the service for the whole day, the remaining costs are covered by municipalities and user fees.

Table 3.1. **Student basket weighting coefficients by school size, type, location and year**

School type, location and size	Enrolment	Expected class size	Years 1 to 4	Years 5 to 8	Years 9 to 10	Years 11 to 12
Primary school						
Extra small, rural area	< 40	10	1.9177	..	..	..
Small, rural area	41-50	12	1.5644	..	..	..
Medium, rural area	51-80	15	1.2435	..	..	..
Large, rural area	81+	20	0.9963	..	..	..
Urban area		22	0.9963	..	..	..
Basic school, pre-gymnasium						
Extra small, rural area	< 80	10	1.8264	2.2644	2.7438	..
Small, rural area	81-120	12	1.5644	1.9095	2.4028	..
Medium, rural area	121-200	15	1.2435	1.5276	1.9222	..
Medium/large, rural area	201-300	15 (Years 1-8) 18 (Years 9-10)	1.2435	1.5276	1.6018	..
Large, rural area	301+	20 (Years 1-4) 22 (Years 5-10)	0.9792	1.2685	1.4206	..
Urban area		22 (Years 1-4) 25 (Years 5-10)	0.9461	1.2064	1.4077	..
Secondary school, gymnasium						
Small, rural area	< 300	15 (Years 1-8) 18 (Years 9-12)	1.2435	1.5276	1.6018	1.6661
Medium, rural area	301-500	20 (Years 1-4) 22 (Years 5-12)	0.9792	1.2685	1.4206	1.4735
Large, rural area	501+	20 (Years 1-4) 25 (Years 5-12)	0.9792	1.2064	1.4077	1.4345
Urban area		22 (Years 1-4) 25 (Years 5-12)	0.9461	1.1274	1.4077	1.4345

Source: Government of the Republic of Lithuania (2014), *Dėl Mokinio Krepšelio Lėšų Apskaičiavimo Ir Paskirstymo Metodikos Patvirtinimo – Nauja Metodikos Ir Jos Priedų Redakcija Nuo 2014-01-01, Nr. 790, 2013-08-28, Žin., 2013, Nr. 94-4699 (On The Approval of the Methodology of Calculation and Distribution of Funds of the Student Basket – New Methodology and Annexes Version 01/01/2014)*, www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=480354.

The final student weighting is the combination, as a general rule, of the product of the weighting coefficients.² For example the coefficient for a regular student in Year 5 of a small rural basic school is 1.90, but 2.60 for a SEN student in the same school (1.90×1.35 SEN weighting). In 2014, the Lithuanian student basket comprises a range of 67 coefficient values.

Rules on the allocation and use of the student basket funds

Central government regulations allow a degree of discretion at the municipal level in allocating the student basket funds to schools. With the exception of the five cities, municipalities should allocate to each school 93% of the grant calculated for that school. The remaining 7% can be allocated by the local government to municipal educational services or reallocated to other schools (where the 93% of the student basket is not sufficient to cover actual teaching costs). In the case of the five cities, 6% of the teaching costs funding may be reallocated. At the same time, the Ministry of Education and Science defines recommended per student amounts for certain expenses. Most significantly for the allocation of municipal resources, the Ministry recommends and sets minimum requirements on spending for providing pedagogical and psychological services. In 2014, the recommended amount was LTL 22.8 per student and the minimum requirement was 80% of this (LTL 18.2) (NASE, 2015).

Interestingly, this component of the funding scheme has been changed substantially after the introduction of the education finance reform (Herczyński, 2011). The share of the resources distributed by the local governments was initially set to 15%, later was gradually reduced to 6% and then adjusted to the current level of 7% (6% for the five cities). This represents a shift to strengthen school autonomy, while reducing the margin for local government redistribution.

In general, schools are highly autonomous in their use of student basket funding. However, there are some central government regulations that impose certain constraints on this autonomy by specifying a minimum amount of expenditure for specific uses. For schools, recommended spending per student is specified for textbooks and other teaching material, in-service teacher training, implementing and using ICT and vocational and career guidance for students, with minimum spending requirements ranging from 40 to 80% of the recommended amounts (NASE, 2015).

At the same time it is important to note that these expenses form a minor proportion of the overall student basket funding. The vast majority of the funding covers the salaries of teachers, management and other pedagogical staff, both regarding the school budgets or school and local government spending as a whole (for the latter the share of salary expenses in 2013 was 96%, NASE, 2015). During the OECD review, discussions with local government representatives and schools suggested that non-salary expenses typically tend to gravitate towards the required minimum level.

Central budgeting for and regulation on teacher salaries

Beside the student basket funding scheme the second key element of education finance is the regulation on teacher salaries. On the one hand one input variable of the funding formula is average teacher salary, which mostly depends on the composition of the teacher workforce and the salary scale set by the central government. At the same time, when schools prepare the annual school budget, the funding they receive from the student basket scheme has to be balanced with their actual teacher salary expenses, which is directly constrained by the national salary scale (see below).

The national teacher salary scale, like salaries in the public sector in Lithuania in general, is regulated in terms of salary coefficients. Nominal salaries are calculated by multiplying the coefficients with a fixed amount, the so called “basic monthly salary”, which is set for the entire public sector uniformly. The government can increase teacher salaries by increasing the coefficients. When these coefficients are amended or the basic salary changes, the value of the student basket is adapted accordingly.

Teacher salary coefficients depend on teachers’ education, pedagogical experience and qualification category. The salary coefficients for teachers in schools of general education are displayed in Table 3.2. For each category the salary scale provides a range of coefficients and the school leaders are entitled to set the exact coefficient values within the range. Note that the type of school or the level of education in general does not affect teacher salaries directly. One notable exception is that teachers at Years 9-12 of *gymnasia* and Years 11-12 in secondary schools are entitled to salary supplements of 5-20% (NASE, 2015).³

The pattern of the salary coefficients shows that experience on its own has only a minor impact on the salary. Within each qualification category the differential between the starting and the top salary is a meagre 13-17%. On the other hand, promotion into a higher

qualification category may yield more substantial returns. Methodologist teachers earn 17-20% more than teachers with similar experience. Naturally, promotion into a higher qualification category goes together with accumulating more years of experience. Looking at the two most typical categories for the more experienced teachers (senior and methodologist teacher), the salary gain compared to the minimum for a qualified novice teacher can reach 28 and 37% respectively. Most of this gain (22 and 32% respectively) can be achieved by the middle of a teacher's career, with 10-15 years of experience.

Another important and rather unique feature of teacher remuneration in Lithuania is that actual teacher salaries are paid in proportion to the teacher's workload. This is calculated as the sum of teaching hours and 0.5-5 additional pedagogical hours for activities like checking pupils' written work, preparation for lessons, class management, and extracurricular activities. When the number of teaching hours falls below the level required in a full-time position (i.e. 18), teachers are paid proportionately lower salaries.

Salary scales for principals, deputies and teachers of special schools (e.g. specialised for teaching SEN students) are regulated similarly. These are not discussed here in detail but it should be noted that salaries of school leaders depend on both school type and the size.

Table 3.2. Teacher salary coefficients for teachers in general education, 2014

Qualification category	With up to 10 years of teaching experience	With 10-15 years of teaching experience	With 15 years or more teaching experience
Non-certified teacher, secondary level teacher degree before 1995	8.90-9.60 ¹ 8.90-9.70	8.90-9.80	9.00-10.00
Non-certified teacher, studying in higher education	10.45-11.65 ¹ 10.50-11.70	10.55-11.75	10.60-11.80
Teacher	10.65-11.85	10.80-12.00	10.90-12.10
Senior teacher	11.60-12.90	11.75-13.05	12.20-13.60
Methodologist teacher	12.45-13.85	12.70-14.10	13.05-14.55
Expert teacher	14.15-15.75	14.40-16.00	14.80-16.40

1. Non-certified teacher with less than 3 years of teaching experience.

Source: Data provided to the OECD review team by the Ministry of Education and Science.

Responsibility for managing school budgets

School leaders are responsible for preparing and managing the school budgets which are then approved by the owner of the school. Within the school budget, expenses funded by student basket funds and school maintenance expenditures are kept separate. School visits of the review team revealed that the number of both teaching and non-teaching staff is usually approved by the municipality directly, though in some cases schools have some autonomy in deciding the number of non-teaching staff. School boards also take part in budgeting decisions, typically on the use of the personal income tax revenues of the schools.

The key challenge in preparing the school budget is the balancing of student basket funding with actual teacher salary spending. The student basket scheme allocates resources to schools mostly on the basis of enrolment figures and average salaries, thus funding is relatively evenly distributed. However, schools may have quite different costs, even though the inclusion of various weighting factors in the student basket funding formula aims to address some of the envisaged teaching cost differences. First, small schools have higher and more varied costs, which is compensated only in part by the formula. Second, the higher the share of teachers with longer experience or higher

qualification status in a school, the larger will be the gap between actual salary expenses and student basket funding. Third, in smaller schools teachers specialised for minor subjects may have a smaller number of teaching hours. Finally, some schools may happen to organise their work less efficiently than others, forming smaller classes or employing more teachers than could be attained in the given conditions, resulting in higher per student expenditures. Hence the allocated funding and actual expenditures should be balanced at the school level.

In the current financial arrangement schools and local governments use several methods to balance the school budgets. First, the funding scheme provides some flexibility allowing local governments to redistribute a limited share of student basket funding among schools or increase school resources at the expense of pedagogical services or in-service teacher training. This way high cost schools may receive additional resources. During the OECD review, representatives of local governments reported using this instrument intensely.

Second, actual teacher salaries are paid in proportion to the teacher workload (see the section on teacher salaries). If the number of teaching hours is below the level required in a full-time position (i.e. 18), teachers are paid proportionally lower salaries. Moreover, the school leader assigns the additional pedagogical hours for each teacher on a discretionary basis at the beginning of the school year. This provides further room for manoeuvre in adjusting actual teacher salary expense to the available resources.

Third, school leaders can adjust the level of actual teacher salaries by setting the exact salary coefficient of the monthly tariff pay within a range (about 10%, depending on teacher category, see the section on teacher salaries). The OECD review team noted that the schools visited during the review usually applied this uniformly to all teachers. This way schools are able to reduce or raise the overall level of salaries to some extent in order to balance student basket funding and actual teacher salary costs. As the coefficients can be set on a monthly basis, adjustments can be made within the budget year as well. If some resources were saved during the year, teacher remuneration can be moderately increased in the last months. However, the OECD review team noted that the schools visited during the review typically set this coefficient at a middle level. In these schools at least, this instrument seems to have only minor importance in balancing funding and actual expenditures.

Strengths

The funding approach includes a degree of flexibility for local adjustments

The Lithuanian school system includes a clear distribution of responsibilities across different governance levels (Chapter 2). The alignment of the funding approach to these governance structures is a strength. First, there is a clear division between teaching costs and maintenance costs. This allows some flexibility of education expenditures at the school and municipal level, by allowing municipalities to decide on different trade-offs in management of school facilities. It also promotes greater efficiency (see below). Second, the use of a central funding formula for teaching costs ensures that the central government has means to influence teaching quality. This centralised formula funding scheme is consistent with the institutional setup in which the Ministry of Education and Science is responsible for the content and quality of teaching and for providing adequate level of funding to each school (Herczyński, 2011). At the same time, giving local governments the

opportunity to allocate a minor share of resources for the teaching process at their own discretion leaves some room for local education policies to be developed and adds some flexibility to the funding scheme. This is important because no matter how well designed a national funding formula is, it can never adequately reflect the varying needs of schools.

Use of a central funding formula supports transparent and fairer resource allocation

The 2001 education finance reform set ambitious goals and high expectations. Though they were not met fully, the implementation of the new financial arrangement indisputably improved the allocation and use of resources in education significantly in many respects. The student basket scheme allocates funds in a very transparent and predictable way. Establishing a more equitable system of allocating resources was one of the major goals of the reform, as prior to the student basket, disparities in municipal tax revenues had had an effect on school resources (Plikšnys, 2009). The formula has a simple logic which can be well understood by stakeholders, in spite of the complexity of the exact calculations.

The student basket scheme is in general accepted by most municipalities and schools as a fair method of allocation, though some controversies related to certain details of the formula prevail (see the discussion below on small schools). The formula essentially ensures horizontal equity of funding across schools, i.e. similar schools receive similar funding. The student basket scheme allocates the same funding for private and public schools, promoting competition both between and within the two sectors. Moreover, it recognises the additional funding needs of small rural schools and in this way aims to enhance equity in the access to education.

The central funding formula is a key policy tool that supports public debate

In addition, the transparency of the formula has a beneficial impact on policy debates at the national level. Fazekas (2012) cites the presentation of clear criteria that can be scrutinised and debated as a clear advantage of a funding formula for the allocation of public funding. The formula provides a clear framework for the debates on the sufficiency and proper allocation of funding. These debates often focus on certain parameters, which helps the participants to express their positions clearly and make agreements that are easy to monitor. The amount of the student basket is set every budgetary year by the central government. On the one hand yearly adjustments follow on from changes in the average teacher salary, either due to a change in the fixed basic salary in the public sector, or the statutory coefficients of the teacher salary scale or changes in the actual average salary due to changes in the composition of the teacher population. At the same time the supplementary components in the student basket formula are sometimes adjusted, as a result of a balance between fiscal considerations, pressure from teachers' unions, local governments and schools, and policy considerations of the Ministry of Education and Science. For example in the autumn of 2014 increased funding for non-formal education was ranked high on teacher unions' agenda and was increased by the government for 2015. Therefore, these components are adjusted as a result of political bargaining from time to time.

The funding scheme promotes fiscal discipline and efficiency both at the local and central levels

Teaching expenses in the municipal and school budgets must be matched to the allocated student basket funding. At the same time, the formula provides a tight grip on

the education budget at the national level. Once the amount of the student basket is approved, total expenditures cannot increase unpredictably within the fiscal year. Increasing the budget from one year to another requires an explicit and publicly discussed decision to raise the amount of the student basket. Funding average as opposed to actual teacher salaries is a key element in the formula that imposes a cap on local salary expenses as well. This allows the central government to indirectly control any increases in education spending due to the promotion of teachers into higher qualification categories, as promotions are only possible within the current budget of the school.

As the formula is built on deriving the expected costs of employing the necessary number of teachers in a school, conditional on the number of students, in general a minimum required level of funding is guaranteed. In other words, the method of the calculation ensures that the funding cannot be cut well below a sufficient level on average. However, note that sufficient funding to have teachers in each classroom at each lesson is different from adequate funding for providing education of good quality. The latter is much more difficult to ensure or even to measure and evaluate appropriately (Fazekas, 2012).

The funding scheme in general conveys clear incentives for schools to increase class size and to strive for attracting more students, even though in some cases these incentives are broken by discontinuities in the formula or the non-linearity of costs (see below in the Challenges section). From a theoretical perspective, building the formula on average as opposed to actual teacher salaries reinforces these efficiency incentives, as schools are encouraged to consider also the costs when employing teachers (Levačić, 2008). Furthermore, per student funding pushes municipalities to adjust the school network in order to increase school size, and thus exploit economies of scale. These incentives, accompanied by the autonomy and flexibility provided for schools in resource use, played an important role in the adjustment to the dramatic decline in the number of the student population and improved the cost-effectiveness of education. Even though it can be argued that the efficiency improvement is not on par with the ambitious original goals of the reform, given the depth and speed of demographic change the adjustment of the school network should be regarded as a considerable achievement (Herczyński, 2011).

Note that the sharp separation between the student basket that funds teaching and the municipal funding of school maintenance is a necessary condition for these incentives to work. In the absence of such separation, municipal funding could mitigate or even overwrite the incentives set by the formula. Under the current scheme, if enrolment increases student basket funding for the school also increases, providing a general incentive for schools to compete for students. At the same time, if there were no limits set for municipalities to redistribute funding from “successful schools” (defined as those attracting the greater number of students) to “struggling schools” (defined as those not attracting a sufficient number of students), this incentive would cease to work, as schools could not gain additional revenues by attracting more students. Note that this kind of redistribution is not only demanded by schools with low enrolment levels, but can be convenient for municipalities, as well. If teaching and school maintenance expenditures were not separated in the school budget, municipalities could achieve this redistribution indirectly. Maintenance funding for the successful school could be decreased, forcing the school to use the additional student basket funding for school maintenance, while additional municipal funding for the struggling school could be used to replace the missing student basket funding for teacher salaries. The separation of teaching and maintenance expenditures in the school budgets precludes this hidden redistribution.⁴

The student basket scheme also inspires and provides a model for the allocation of school maintenance funds for some municipalities. Though the general practice appears to be to allocate these funds by discrete budgetary decisions, some local governments apply a more systematic approach. For example the Šiauliai City Municipality introduced a local formula funding scheme that closely mimics the logic of the student basket and is referred to as the “municipality basket”. The size of the required staff is estimated by taking into account both actual enrolment and optimal school size which is set by the local government for each school type. Multiplying the required staff by an average salary coefficient results in the allocation for non-teaching staff salaries. Funding for material costs is also calculated with the formula. Beyond making the allocation of funds more transparent, this scheme also provides a wider autonomy for schools in using these funds. The OECD review team noted the share of the student basket funds within Šiauliai’s municipal education budget (close to 80%) was relatively higher than in other municipalities, which indicates that expenditures on school maintenance are relatively lower in Šiauliai.

The funding approach includes key elements that promote an equitable allocation of resources

A major advantage of the student basket scheme, and formula funding methods in general, is to ensure horizontal equity in the distribution of resources across schools. Municipal redistribution of a minor share of funding may result in some deviations, but this hardly endangers equity in the allocation of resources. Note that the sharp separation of the student basket funding from municipal funding of school maintenance is as important for equity as for efficiency incentives. Municipalities are not allowed to increase expenditures on teaching, even if abundant resources are available in the local budget.

Additionally, an element of the student basket scheme promotes equity in an indirect way. Funding average salaries impedes extreme differences in teacher qualification across schools, which drives towards equity. That is, the funding formula practically does not allow for employing mostly methodologist and expert teachers in a school, which is a constraint on outstanding disparities in education quality.

Disparities in funding can be expected to emerge only regarding school maintenance. However, the structure of local public finances appears to restrain these effectively in Lithuania. Local government revenues are dominantly set by the central government. The major sources of revenues are intergovernmental grants and the shared personal income tax, with a strong element of equalisation in the latter (Davulis et al., 2013). The share of local tax and non-tax revenues was below 20% in 2012 and local governments rely mostly on intergovernmental grants (Davulis et al., 2013). This revenue structure suggests that wealth inequalities between municipalities are not likely to create substantial differences in school maintenance expenditures.

The funding approach supports a good level of school autonomy over resources

The education finance reform broadened school autonomy within clearly defined limits. This setup created the opportunity for increasing the accountability of school leaders. School leaders’ authority covers the organisation of classes, assigning different workload for individual teachers, setting the level of teacher salaries and influencing the promotion of teachers into higher salary categories. The autonomy in allocating teaching

hours and setting teacher wages within a range provides an opportunity for rewarding and encouraging quality in teaching, even though during the school visits the review team got the impression that this autonomy is typically not used to establish merit pay.

Availability and use of EU funds support key effectiveness and efficiency objectives

Finally, besides the student basket scheme, the allocation and utilisation of EU funding grants should also be mentioned among the strengths of education funding. First, this diversification of funding was a core part of the government's short-term strategy to limit the impact on the overall education budget of the required reductions in the convergence programme for the public sector (Chapter 2). The absorption rate of these funds dedicated to education is quite high (Table 3.3). Second, during the country visit the review team got the impression that the operational programmes are built on a thorough strategic planning and a careful choice of priorities. The majority of funding was concentrated on the development of the school network in some key fields: vocational education, kindergarten services and small rural schools providing additional services, the so called multifunctional centres, plus the provision of school buses (for an example, see Chapter 2). These support the broader effectiveness and efficiency objectives for the education system.

Table 3.3. Use of EU funds in pre-school, general education and vocational training facilities

Financing of the measures of the Operational Programme for Promotion of Cohesion for improving pre-school and general education and vocational training facilities (as at 21 October 2013)

	Funding allocated (LTL)	Funds paid out to project promoters (LTL)	Share of funds absorbed (%)
Establishment of universal multifunctional centres in rural locations	80 649 537	47 277 326	58.6
Investment in pre-school education institutions	91 725 688	77 763 864	84.8
Adaptation and upgrading of technology, natural sciences and arts facilities in general education schools	86 450 000	86 450 000	100.0
Development of the infrastructure of the network of public libraries in general education institutions	22 440 000	22 426 344	99.9
Reformation of special schools and establishment of methodological centres	5 000 000	1 285 408	25.7
Upgrading of facilities of pedagogical psychological services and work environment of special pedagogues, social pedagogues, psychologists and speech therapists working in educational institutions	35 368 011	34 365 159	97.2
Upgrading of general education schools	34 200 000	34 199 349	100.0
Development of the infrastructure of private general education schools and public general education schools implementing artistic development programmes	30 220 152	24 571 129	81.3
Modernisation of adult education institutions	10 071 384	10 068 538	100.0
Development of vocational training facilities	407 411 154	205 772 115	50.5

Source: NASE (2015), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools: Country Background Report for Lithuania*, National Agency for School Evaluation, www.oecd.org/edu/school/schoolresourcesreview.htm.

Challenges

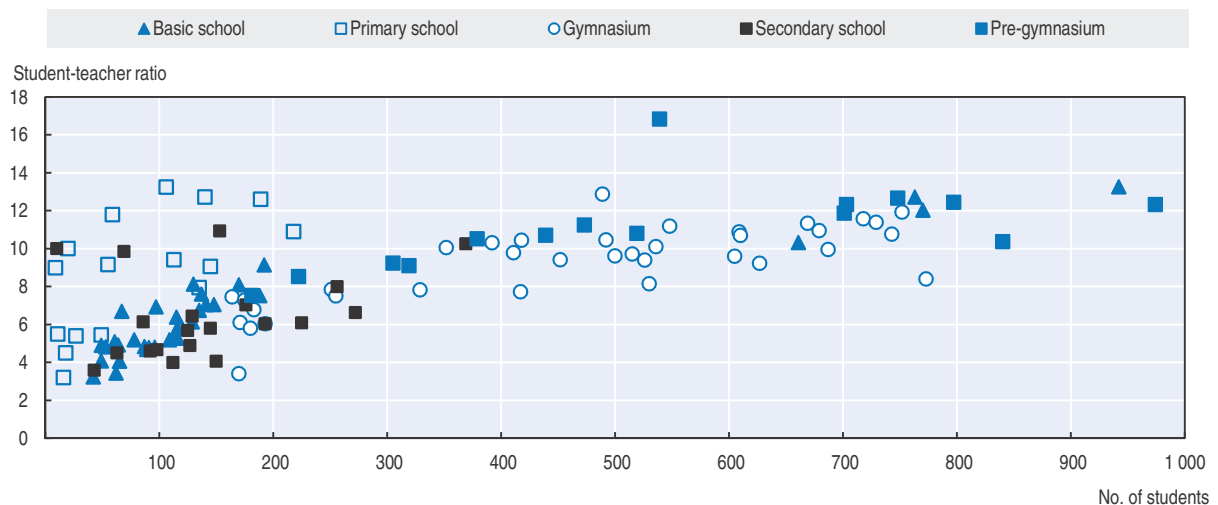
School funding in Lithuania is characterised by serious tensions, some of the issues are already placed high on the policy agenda.

Adequate funding of small rural schools is difficult to ensure

Probably the most recurrent student basket formula debate is on funding for small schools, which has potentially significant ramifications including weaker incentives for school consolidation and for school competition and a lower overall level of efficiency. This emerges as a permanent hotspot of the current financial arrangement, despite adjustments of the student basket formula in the mid-2000s. Representatives of school leaders and local governments during the OECD review shared the view that in general in small schools teaching costs are more difficult to accommodate to student basket revenues. It is important to remember that not only the overall level of funding per class is lower in smaller schools but also its variation as a function of the exact enrolment numbers. In other words, if a relatively small school operates with only few, but sufficiently large classes, funding per class can be at a level similar to large schools. For example, if the funding scheme provides adequate resources for teaching costs in a primary school with an enrolment of 80, with one class per year, a school with 51 students, but also with four classes and the same number of teachers, can be expected to encounter a serious imbalance between funding and costs.

Figure 3.1 illustrates the higher expenditures of small schools by depicting the student-teacher ratio as a function of school size for the five municipalities visited during the country review. Note that this is not a representative sample of Lithuanian schools, though both urban and rural areas are included. The figure clearly suggests that the student-teacher ratio increases sharply up to the point of 250-300 students in a school (except primary schools). Interestingly, in these municipalities more than half of the schools fall in this size category, characterised by strong economies of scale. In other words, the small school problem is not limited to a handful of schools in remote areas.

Figure 3.1. **Student-teacher ratio and school size in five municipalities, by school type, 2013**



Source: Data provided to the OECD review team by the Ministry of Education and Science.

To our knowledge no systematic and comprehensive appraisal, based on micro level data about the adequacy of the actual funding level in schools of different size, type and location has been prepared yet. A related question is whether the allowed redistribution of

student basket funding across schools leaves sufficient room for local governments to smooth these differences. Overall detailed empirical evidence is still missing on this problem.

Funding of small schools appears primarily as a question of fairness of the funding formula. However, differences in education quality and inequalities of opportunity in education are also affected. Rural neighbourhoods can be expected to be less attractive for teachers due to settlement size *per se* and the less favourable composition of students (lower socio-economic status on average). As this is not compensated by higher wages, rural schools are severely constrained in employing teachers of the highest quality. Moreover, as far as rural schools are attended by students with a lower socio-economic status on average, the achievement gap between the poor and the rich widens this way. These problems are reinforced by a lower level of student basket funding.

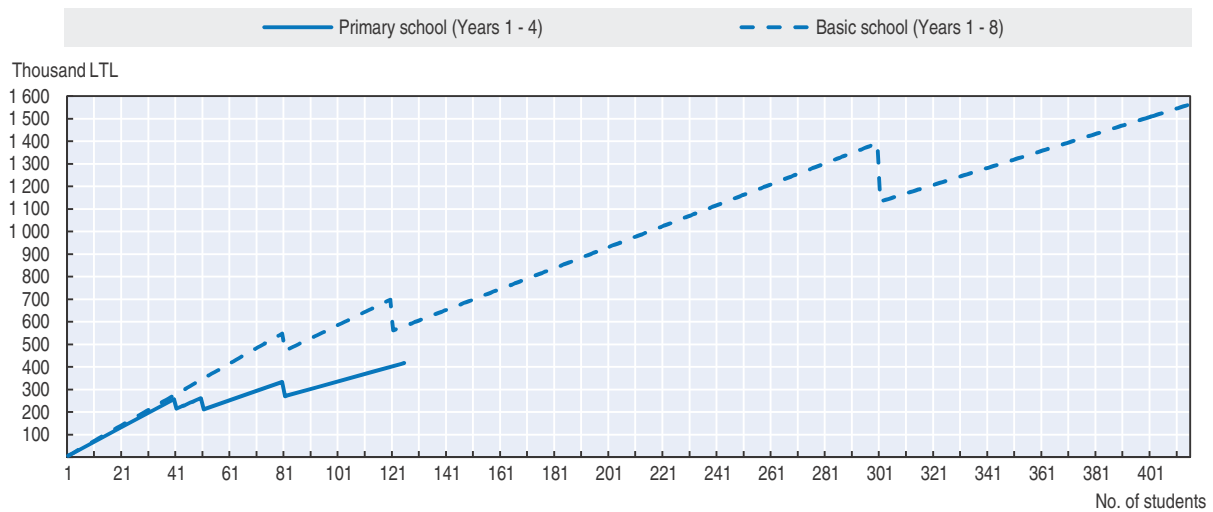
Discontinuities in the funding formula impair horizontal equity in funding

Funding problems of small rural schools are currently addressed by shifts in the student basket formula at certain school sizes. At the same time this formulation of the additional support for small schools is often argued to still generate fiscal pressure for some schools and possibly perverse incentives. As Herczyński (2011) pointed out these discontinuities impair horizontal equity in funding, since two almost identical schools, apart from the fact that one of them enrolls one additional student, receive substantially different levels of funding. These discontinuities emerge because of the sharp drops in total funding at the cut-offs between size categories of schools.

To illustrate this, Figure 3.2 shows the total student basket funding as a function of total enrolment for two representative rural schools: a primary school with Years 1 to 4 and a basic school with Years 1 to 8, each with regular students only (the argument follows that in Herczyński, 2011). At the threshold of size categories there is a sharp drop in the amount of total funding. This implies that if student enrolment increases beyond the cut-off point, the school loses resources and substantial further expansion is required to recover the previous level of funding. For primary and eight year basic schools the drop at the first cut-off point is of 16% and 14% respectively, at the higher cut-off points, it is 19% (Figure 3.2). The funding drop at cut-off points appears to hit more primary and basic schools, while the impact is less significant on secondary schools. For secondary schools with twelve years the values are 14% and 3% (Figure 3.A1.1, Annex 3.A1). It can be argued that these decreases make the allocation of resources inequitable. Also, this may provide perverse incentives for schools that see maximising funding as a major priority. If total enrolment just exceeds a funding cut-off point the school may be tempted to deter some students and step down into the smaller size category instead of striving to attract more students.

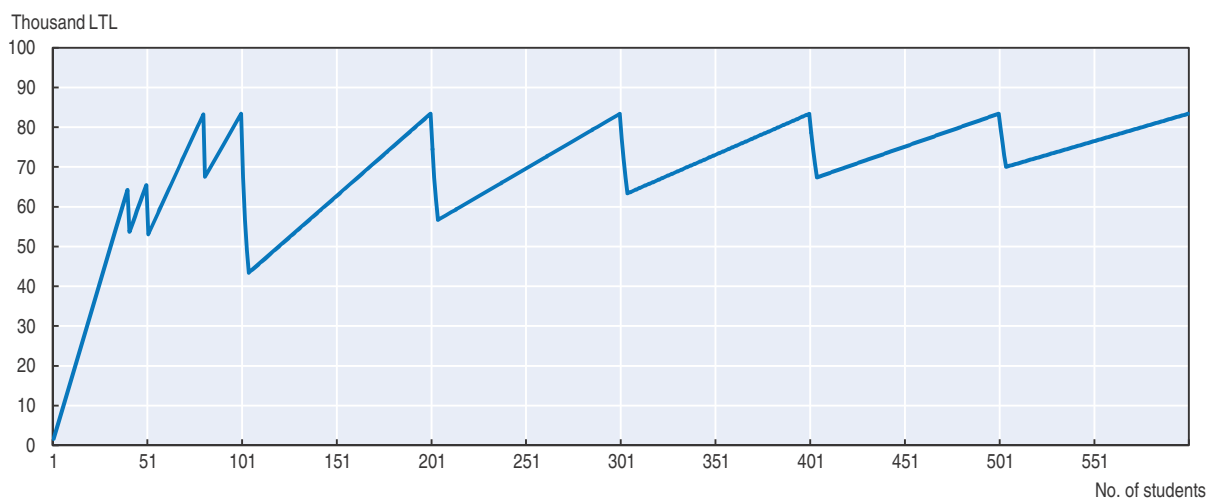
A funding scheme proportional to enrolment and the non-linearity of costs creates tensions, especially in small schools

Discontinuities in the formula reveal only part of the tensions created by the funding scheme. School size may affect teaching costs as well as total funding in a non-linear fashion. This is because teaching costs are more closely determined by the number of classes than the number of students, and the number of classes is a non-linear function of total enrolment. The marginal cost of teaching an additional student is substantial if an additional class must be established but is close to zero otherwise. Hence it is informative to look at funding level per class, which may provide a more accurate picture of the

Figure 3.2. **The student basket for rural primary and basic schools of different size, 2014**

Source: Based on Table 3.1 and student basket amount for 2014.

financial situation of the school. Figure 3.3 depicts this, representing simulated funding level per class in primary schools, assuming equal enrolment in each year and a strict maximum class size of 25, i.e. schools are assumed to increase class size up to 25 but the enrolment of the 26th student leads to the setup of an additional class. In a primary school with four years this means that 100 students are arranged into 4 classes while from 104 the number of classes is 8. Note that the maximum class size value of 25 is chosen arbitrarily here. It is important to keep in mind that this is a stylised representation of the current funding arrangement and should be interpreted with caution. However, the assumptions do not affect the overall pattern, only the magnitudes and frequencies of peak values.⁵

Figure 3.3. **Student basket funding per class in primary schools (Years 1-4), by school size, 2014**

Source: Based on Table 3.1 and student basket amount for 2014.

Keeping these assumptions in mind the patterns of Figure 3.3 still suggest three important lessons for the current financing arrangements. First, opening additional classes appears to have at least comparable or an even larger impact than drops at funding formula cut-off points.⁶ In other words the discontinuities in funding per class are likely to exceed those of total funding per student.

Second, the smaller the school is, the larger the fluctuations in per class funding are. Funding per class becomes more stable as school size increases, especially for primary schools: creating a third or fourth class causes a smaller drop in average class size than opening the second. Note that similar figures for funding per class in basic schools and secondary schools are presented in Figure 3.A1.2, Annex 3.A1.

Third, the overall level of funding per class is below the typical range for the smallest primary and basic schools. That is, primary schools with less than 60-70 students and eight year basic schools with an enrolment below 80-90 currently seem to receive less funding compared to larger schools. It is worth recalling here that student basket funding covers not only teacher salary costs, which predominantly depends on the number of classes but salaries for the school management, as well. As there is a fixed cost element in the latter, economies of scale can be significant, especially for small schools. This implies higher administration costs per class in the smallest schools which means that the fiscal pressure on these schools can be even stronger than suggested by Figure 3.3 and Figure 3.A1.2 in Annex 3.A1.

Altogether it appears that the actual class sizes have a strong impact on the current student basket funding being sufficient to cover actual costs. This impact is stronger for the smallest schools. Moreover, larger and especially urban schools can be expected to have more room to smooth out these discontinuities of per class funding. Popular schools attracting students from outside their designated catchment area, for example, are likely to have reasonably large average class size.

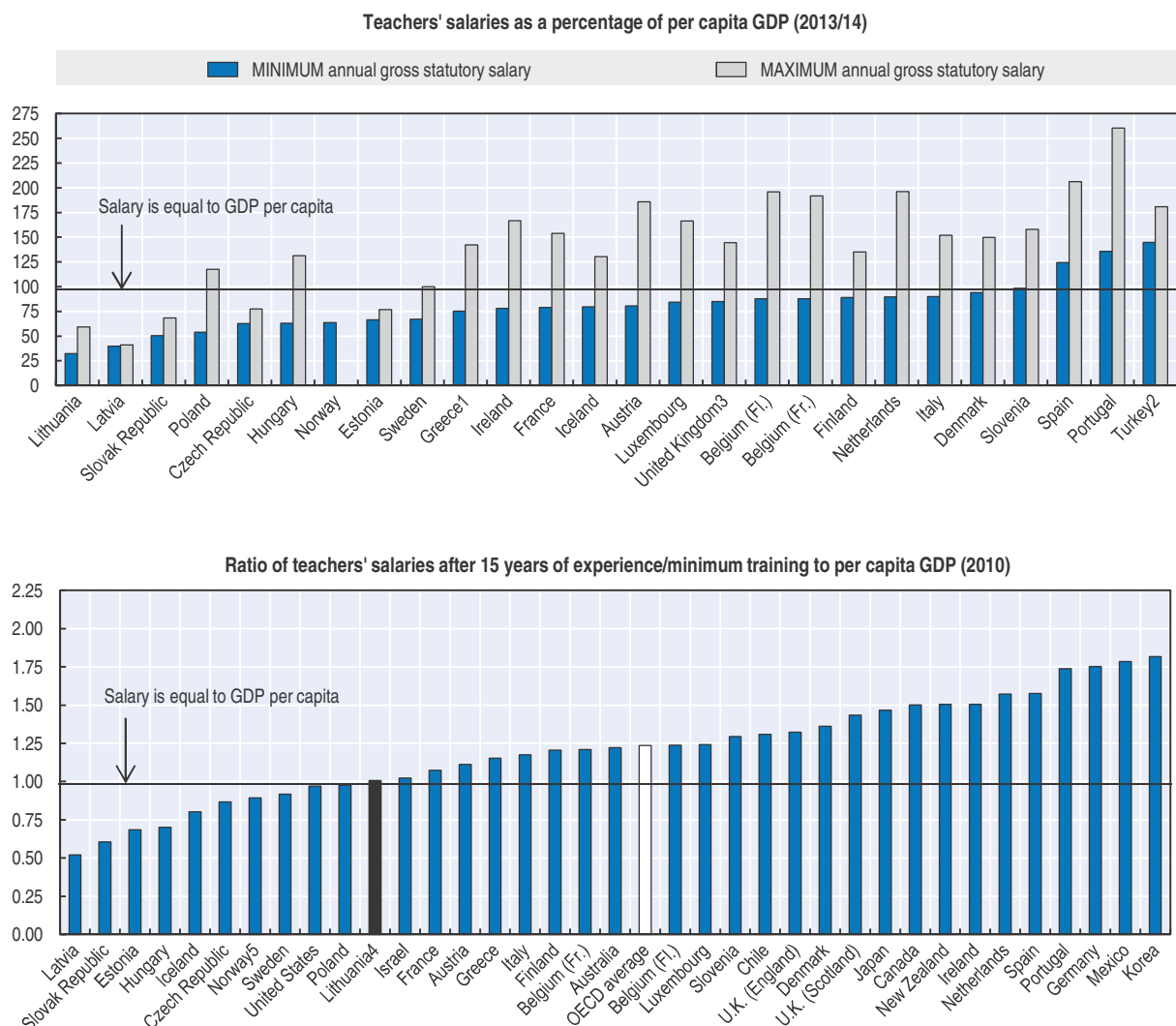
Low wages, especially for new teachers, but a need to attract new talent into teaching

The ageing teacher workforce and the difficulties of attracting talent into the teaching profession emerge as a key problem in the medium and long term. Though these are not problems of education finance *per se*, they are deeply rooted in the financial arrangements and should be addressed also by budgetary changes. First, note that the ageing teacher population and the low attractiveness of the profession for the young are two interrelated problems. The high share of teachers above fifty years of age or already retired is outstanding in international comparison (see Chapter 4). This implies that in the medium or long term Lithuanian schools may encounter sudden teacher shortages, especially given the low number of new entrants to the profession. One of the visited local governments reported difficulties in the recruitment of young teachers already. At the same time, the small number of vacancies in schools makes it difficult for young teachers to start their teaching career. This situation was generated by the incidence of two trends. On the one hand, the shrinking student population resulted in adjustments of the school network and a dramatic decrease in the number of teaching posts. On the other hand, teacher turnover has slowed down as a large number of teachers already in retirement continue teaching. For example in one of the municipalities visited the share of teachers above the retirement age well exceeded 10%.

Unfortunately, the current conditions in the teacher labour market rather deter than attract talented young people into the teaching profession. Due to the small number of vacancies, employment prospects as a teacher are not reassuring in the short term. Teacher salaries relative to national income (GDP per capita) are low in international comparison, but in particular for new teachers (see also point below):

- European data that compare annual gross statutory salaries (such data exclude additional benefits or salary allowances, e.g. for different qualification categories, additional responsibilities, teaching students with special educational needs or in difficult circumstances, etc.) are shown in Figure 3.4, Panel A. In the academic year 2013/14, the

Figure 3.4. **Relative attractiveness of teacher salaries in lower secondary education**



1. GDP data are for 2012.
2. GDP data are for 2011.
3. Data are for England and Wales only.
4. Average actual teachers' salaries for all teachers, irrespective of the level of education they teach.
5. The GDP mainland market value is used.

Source: For Panel A data are taken from Eurydice (2014), *Teachers' and School Heads' Salaries and Allowances in Europe 2013/14*, http://eacea.ec.europa.eu/education/eurydice/documents/facts_and_figures/salaries.pdf; for Panel B data are taken from OECD (2013), *PISA 2012 Results: Excellence through Equity (Volume II): Giving Every Student the Chance to Succeed*, <http://dx.doi.org/10.1787/9789264201132-en>, Table IV.3.3.

minimum and maximum teacher salary was 32% and 59% of the per capita GDP respectively at each level of public education; the lowest minimum and second lowest maximum value in the European Union (Eurydice, 2014). Teacher salaries significantly exceed the Lithuanian level in each of the EU10 countries,⁷ as well, except Latvia. New recruits to teaching are likely to be at or near the minimum salary, with more experienced teachers also likely to have additional benefits related to different qualification categories and additional responsibilities.

- OECD data compare teacher salaries after 15 years of teaching relative to national income (note the maximum annual gross salary in Lithuania, as shown in Figure 3.4 Panel A, is attained after 15 years of teaching). The OECD uses data for *actual* teacher salaries in Lithuania and finds that these are at the level of national income, although teacher salaries are still relatively less attractive than in other OECD countries (Figure 3.4 Panel B). Note also that following the financial crisis in Lithuania, per capita GDP has been steadily increasing from a low point in 2009. In the OECD comparison, per capita GDP was weaker, while it had recovered somewhat in the European comparison (NASE (2015) gives 2010 per capita GDP at LTL 30 890 and 2013 per capita GDP at LTL 40 385).

Increasing teacher salaries significantly requires either raising the total spending on education or adjusting the use of resources in order to reach higher student-teacher ratios. However, in the short term it is difficult to increase substantially the total amount of resources devoted to education due to fiscal constraints (see Chapters 1 and 2).

As noted, new teachers are more likely to be at or near the minimum level of annual gross salary as shown in Figure 3.4, Panel A. Low wages are aggravated by the uncertainty generated by salaries set on the basis of the actual workload, accompanied by the practice that young teachers are on average allocated fewer contact and pedagogical hours than the more experienced colleagues until they attain the senior teacher category (see Table 3.4). This widens the salary gap between the less and more experienced and qualified teachers, as teachers in the early phase of their career are, on average, more prone to have a smaller number of pedagogical hours and consequently have even lower salaries.

Table 3.4. **Teacher qualification and experience and average number of weekly working hours, 2013**

Teaching experience	Up to 10 years		10-15 years		15 years or more	
	Teaching hours	Pedagogical hours	Teaching hours	Pedagogical hours	Teaching hours	Pedagogical hours
Non-certified teacher	14.57	19.83	13.72	18.97	13.76	18.95
Teacher	15.59	21.53	15.72	21.75	13.14	18.14
Senior teacher	18.03	25.25	18.52	26.19	18.07	25.52
Methodologist teacher	19.33	26.56	20.44	29.19	19.81	28.48
Expert teacher	16.63	21.55	21.83	28.70	20.38	28.76

Source: Data provided to the OECD review team by the Ministry of Education and Science.

Despite budgeting autonomy, many Lithuanian schools have little room to reward teaching quality

There is a general inherent tension in the student basket funding scheme: the funding based on average salaries can differ significantly from actual salaries due to the actual composition of teachers. While central funding is allocated by a formula that includes weighting factors to acknowledge some variation in teaching costs across schools, actual

teaching costs can be expected to vary much more, and some schools may have higher than average teaching costs due to conditions that cannot be addressed easily in the short term. The funding formula is calculated with reference to average teacher salaries, while the actual payroll of the schools can deviate from this by a wide margin. Teacher salaries are regulated by the national salary scale but the composition of the teaching workforce is different from school to school. The higher the share of teachers with more years of experience or belonging to a higher qualification category, the larger the actual salary expenses are in the school. In the short term schools have only limited influence over this factor. When a new teacher is recruited or a teacher applies for promotion, the decision affects salary expenses of the school. Nevertheless, during the school visits in the OECD review, the school leaders claimed that fiscal conditions typically do not constrain the promotion of teachers into higher qualification categories. However, the composition of teachers with respect to the years of experience is in general a factor that schools have little influence over.

Moreover, these problems can be more pronounced for small schools as the variation of this gap might be larger simply due to the smaller number of teachers. For example, in larger schools the positive and negative differences of individual salaries and the average salary coefficient used in the student basket formula are more likely to cancel out to some extent.

Under tight budget conditions balancing average and actual salaries may exert a huge pressure on school management. This is advantageous for the central government from an austerity perspective, as individual school decisions cannot increase overall education spending within the year and schools are forced to adjust actual teacher salaries downwards if it is necessary. On the other hand, school visits of the review team provided the impression that currently school autonomy in budgeting is often confined to balancing the funding constraint and teacher salary spending. Although school autonomy in budgeting is an appealing feature of the current financial arrangement from a theoretical point of view, managing this tension leaves little room for initiatives to improve, encourage and reward quality of teaching.

One way of balancing the student basket funding with actual expenditures is to set the level of teacher salaries according to the available school budget (see above). Although the freedom of schools to choose the exact teacher salary coefficients within the range set by the national teacher salary scale provides an opportunity, at least in theory, to reward high quality teaching, it is mainly used to balance the school budget. Moreover, this generates disparities in teacher salaries across schools, raising equity concerns. Different salaries for similar work can be regarded unfair. At the same time, as Plikšnys argues (2009) the fact that currently teachers receive the same salary for working in different circumstances in terms of class size, year and class composition is also questionable on equity grounds.

Inequalities related to the socio-economic background of students receive little attention

The focus of both policy and academic discourse regarding equality of opportunity is most often on whether students have special educational needs and/or study in a national minority language, while achievement gaps with respect to children's socio-economic background are largely omitted. The current funding scheme reflects this focus and limitation. Inequality of opportunity measured by student achievement differences related to family background can be regarded to be at a medium level in a European comparison. For example the gap in mathematics performance between the top and bottom quartiles of

the socio-economic status distribution is somewhat below the average of the European countries, though significantly higher than in the Nordic countries or Estonia (OECD, 2013, Figure II.2.6). This suggests that though it is not an outstanding social problem at the moment, considerable inequalities between students from relatively less and more advantaged socio-economic backgrounds do exist and should not be ignored in education policies.

Differences in allocation of funding at the municipal level

A key feature of the Student Funding scheme is that local governments decide on using a given share of the funds. On the one hand, this part of the student basket provides funding for municipal educational services. At the same time, it can be reallocated among schools in order to balance teaching cost differences (see above). However, the incentives for improving efficiency are also weakened by this redistribution if local governments reallocate resources to inefficient schools from more efficient ones. Another possible drawback of this setup is the danger of inadequate levels of resources spent on pedagogical services and in-service teacher training, as funding teacher salaries in each school is the top priority.

Though policy debates at the national level are typically centred on the student basket scheme, besides that local governments are responsible for a sizeable amount of education expenditures. During the visits in the OECD review, the team gained the impression that there are marked differences among municipalities both in the level of funding school maintenance, the methods used for allocating these funds and presumably in the cost-effectiveness of funding as well. During the OECD review, school leaders at the school visits often reported a limited autonomy on the usage of school maintenance funds as usually both the number of non-teaching staff and their salaries are approved by the local government. As local governments have accrued large debts, improving the efficiency of municipal service provision is of prime importance (NAOL, 2014).

Some concerns about the quality of data on students and schools underpinning formula funding

Though considerable progress has been achieved in this respect since the introduction of the education finance reform, the National Audit Office claims that the reliability of data provided by schools should be improved further. In a 2012 report the National Audit Office analysed the allocation and use of student basket funds and found that data on enrolment and student characteristics used for calculating the funding are still not sufficiently reliable (NAOL, 2012).

Policy recommendations

Though the 2001 education finance reform established a clear and essentially well-functioning arrangement for funding schools in Lithuania, some tensions call for further considerations. The following policy recommendations are suggested in the context of an overall recommendation to both create further efficiency gains and to increase the level of funding in the longer term (see Chapter 2).

Secure funding in the short-term to help attract and retain new talent into teaching

Substantial improvements in education quality are hardly achievable without increasing educational spending and efficiency in resource use that are both lower than in

most European countries. In particular, in the long term teacher salaries should be raised considerably in order to make the teaching profession more attractive for talented young people. International comparisons suggest that this appears to be a key factor in creating a successful system (Mourshed et al., 2010).

As this cannot be achieved from one year to the next, in the short term, salaries for new entrants and teachers in the first years of their career should be increased noticeably. One way to do this could be to grant additional pedagogical hours for novice teachers acknowledging the time consuming effort to prepare for lessons, given that currently these teachers earn smaller salaries in part due to the smaller number of teaching hours allocated to them on average.

Moreover, more vacancies should be created to provide more employment opportunities for young teachers. One option to do this would be to decrease employment of teachers who are already in retirement but still teaching. Some of these teachers could be employed in new roles to use their experience, e.g. as mentors for the young, with a smaller number of teaching hours or in part-time jobs. However, a categorical prohibition of employing teachers in retirement should be avoided, as this could create sudden teacher shortages in some regions.

Avoid introducing a universal class basket funding scheme

In Lithuania, the sufficient funding of small schools is a long lasting unresolved challenge. At the time of the OECD review, policy debates gravitated towards replacing the student basket with a class basket scheme, i.e. allocating funding as a function of the number of classes. This approach is appealing since it acknowledges that the cost of teaching is determined much more by the number of classes than by total enrolment and it can smooth the imbalances created by per student funding. Subsequent to the OECD review, the government approved, in November 2015, an experimental methodology to calculate and allocate education resources. This pilots a model of a “class basket” in five municipalities.

However, a class basket scheme would considerably weaken the incentives to organise schooling efficiently and to compete for students. Schools would unlikely organise classes larger than prescribed by regulation, while currently their financial interest is to maximise class size. For example, if the maximum class size is 30, a school with about 60 students per year can be expected to strive for enrolling 61 students, and organising three smaller classes. Currently the incentive is to have 60 students and two classes. Lower average class sizes would involve higher per student expenditures and a decreased level of cost-effectiveness at the macro level. This is in a context where an existing challenge for schooling in Lithuania is an internationally low class size (Figure 2.8).

The class basket would also decrease the incentive for school competition substantially. Increasing enrolment marginally would not increase revenues, while incurring some additional costs, (unless of course the marginal student would allow setting up an additional class). The OECD review team raises a note of caution that the introduction of a class-basket scheme could risk reintroducing some of the basic problems that the 2001 education finance reform was intended to solve. Plikšnys (2009, p. 15) reports that before the reform municipalities typically distributed education funds following the number of classes, which resulted in “the funding of a large number of unnecessarily small classes [...] schools were not motivated to seek new enrolment...”.

Moreover, the financial incentive effects of per-student funding urging local governments to create a more efficient school network would cease to work as well. It is important to note the context of a declining average class size in urban schools (from 23.3 in 2006 to 20.6 in 2015). Currently, urban municipalities have an incentive to establish larger schools to alleviate budgetary pressures, as the higher per-student costs of small schools are not completely funded by the student basket. Furthermore, the local government is also interested in ensuring that class sizes are not too small, because that generates a stronger demand for the municipal share of student basket funding. By introducing a class basket scheme these incentives would disappear.

It is important to note that these side effects would be stronger if a class basket scheme were built on the actual as opposed to an expected number of classes. Moreover, funding tied to the actual classes requires a meticulous regulation of class size with a regular monitoring of compliance. These rules could be difficult to enforce and schools could gain substantial extra revenue by small manipulations of the data. Hence, if a class basket scheme is to be introduced, it should be built on a formula of the expected number of classes as a function of total enrolment per year. Normative class sizes should be set carefully in order to minimise the decrease in average class size. At the same time a class basket scheme would not necessarily balance the disparities in funding between small and larger schools entirely. School management and administration incur some fixed costs that are higher both per student and per class in small schools.

Altogether a universal class basket scheme could help smaller schools, but would undermine incentives for efficiency and presumably would result in smaller class size on average. This trade-off should be evaluated thoroughly. It will be essential, in evaluating the impact of the experimental methodology of the class basket, to consider how effectively this addresses the challenges for small, rural schools and, importantly, what the full costing implications will be if this is introduced system-wide.

Consider alternative measures to address funding challenges at the school level

Some schools in Lithuania face distinct funding challenges. These may be related to their location and size, but also to the composition of their teaching body.

An alternative to a universal class basket scheme could be establishing a separate scheme for small rural schools in the current system that would grant exceptional status to these schools according to criteria like settlement size, population density and the remoteness of the location. These schools could be funded more generously either in the form of a class basket or supplementing the student basket with a fixed amount per school, while preserving the benefits of the student basket scheme for the majority of the schools. This approach would provide an opportunity for the central government for initiating further adjustments in the school networks when setting the criteria for the justified small rural school status. At the same time an obvious drawback of this approach would be creating harsh differences between similar schools just meeting or failing to meet the criteria for exceptional funding.

Besides the problems of small schools, differences in teaching costs are substantial in general, often resulting in a strong pressure on school budgets. Compared to small rural schools this is a much less highlighted issue, though it has important ramifications for both equity and incentives for efficiency. Fiscal pressure on schools should be relieved by taking into account to some extent cost differences due to teacher composition in terms of

experience and qualification in the funding formula. The current scheme has some advantages over funding actual teacher salaries, and establishing an actual salary scheme seems to be neither politically feasible nor desirable. However, cost differences could be smoothly incorporated into the formula by assigning different weights for categories of schools with a high, average or low salary cost index.

More effectively address equity within the funding formula

More attention should be given to equity in education besides urban-rural differences, and SEN and minority students. Inequality of opportunity related to social disadvantage is a fundamental equity problem in most countries. Though disparities in Lithuania are at an average level in international comparison, the problem appears to be overlooked in its funding policies. Several EU countries provide examples of incorporating indicators of social disadvantage into the funding formula. In the Netherlands low parental education is used as the key indicator of social disadvantage, and these students are assigned a larger weight in the funding formula (Ladd-Fiske, 2009). In the French Community of Belgium the schools are grouped into 20 categories with respect to the share of students with social disadvantage, and schools in the top 5 categories are entitled for additional funding (Demeuse et al., 2009). In the UK the majority of local education authorities take into account the free meal status of students, as an indicator for poverty in the local funding formula (Levačić, 2008). As Ladd and Fiske (2009) demonstrate on the example of the Netherlands additional funding on its own is hardly sufficient to tackle inequalities of opportunity in education. Nonetheless, as one part of a more comprehensive approach it can be a useful measure to improve the education of less socio-economically advantaged students. The possibility of assigning larger weights to socio-economically disadvantaged students in the funding formula should be considered.

Evaluate the costs and adequacy of funding regularly

Improving the funding scheme in accordance with raising education quality requires more evidence, both from regular audit work and academic research. Reliable and detailed evidence should be gathered on the costs and adequacy of funding in general, and on specific topics, e.g. small schools, national minority schools, the education of SEN students and equity problems related to social disadvantages. For example, an important feature of the general funding formula is that the overall allocation is based on a regular student in a class of 25 students. In 2015, the average class size in urban schools is 20.6 students and in rural schools is 11.4 students (Chapter 1).

In the first decade of the education finance reform, the National Audit Office prepared several reports evaluating the reform. These reports played an important role in initiating and supporting structural adjustments. The first report in 2003 investigated the implementation of the reform. The report revealed serious problems both in the calculation and the usage of the student basket funds. Several municipalities received more funds than they should have, and an estimated 4.7% of funds was spent on school maintenance instead of teaching costs (Herczyński, 2011). However, the last comprehensive report was published in 2008 and called attention to inefficiencies in education finance and the need for further optimisation of the school network (NAOL, 2008).

Improving the financial arrangements requires regular and detailed analysis of the adequacy of funding and its effects on the quality of teaching, the efficiency of schools and the equity of education. For example, while improving the funding of small rural schools is

high on the education policy agenda, a comprehensive analysis of the current situation based on solid empirical evidence is not available. Another example is the higher cost of education for SEN, migrant and national minority-language students. The funding scheme assigns additional funding to ensure vertical equity (i.e. providing education of similar quality to different students), while there is no systematic evaluation of the actual costs. Though this component of funding is naturally framed by political preferences as well, comprehensive and compelling analysis and empirical evidence on the exact cost differences would strengthen the basis for policy decisions.

Promote efficiency in municipal funding of school maintenance

While the central government cannot directly influence the allocation and use of school maintenance costs, more attention should be devoted to improving efficiency in this field. Regular evaluation of resource use and the promotion of best practices in allocating municipal funding would be useful. Also, the National Audit Office (NAOL, 2014) has underlined the need for the Ministry of Education and Science in collaboration with municipalities to evaluate and review the implementation of state investment projects. In general, greater oversight of investments is required to ensure a more efficient and effective use of public funds.

Notes

1. Some of these additional elements may enter the formula as a multiplicative term, which is omitted here for the sake of simplicity.
2. Individual student characteristics present the exception. For a student classified in more than one of the language minority, migrant and SEN categories only the highest coefficient is applied instead of the product of these.
3. Teachers of primary years in some minority schools (located in Eastern Lithuania with ten or more students out of whom 50% do not speak Lithuanian) are also entitled to a similar supplement (NASE, 2015).
4. However, this separation was not employed perfectly at the outset of the reform. Herczyński (2011) reports that in the first period following the education finance reform, a few local governments supplemented the student basket funding from general local government revenues in order to cover higher teaching expenditures. However, this practice was rather the exception than the rule, and the overall amount of these funds was negligible compared to the total student basket funding. The OECD review team did not note any such practice from discussions with representatives of local governments.
5. The assumption of equal distribution of students across years may increase the fluctuation of figures. Smaller maximum class size values have a similar effect. A more uneven distribution of students across years would reduce these peak values to some extent. Finally note that because the maximum class size rule is not strictly applied, i.e. some schools open additional classes with a lower number of students, Figure 3.3 does not represent the actual population average, in which discontinuities can be smoothed out to some extent.
6. Note that for secondary schools the 300-children cut-off cannot be noticed as it coincides with the switch point from one to two classes per year.
7. The EU10 refers to the ten “new” countries that joined the EU in May 2004, one of which was Lithuania.

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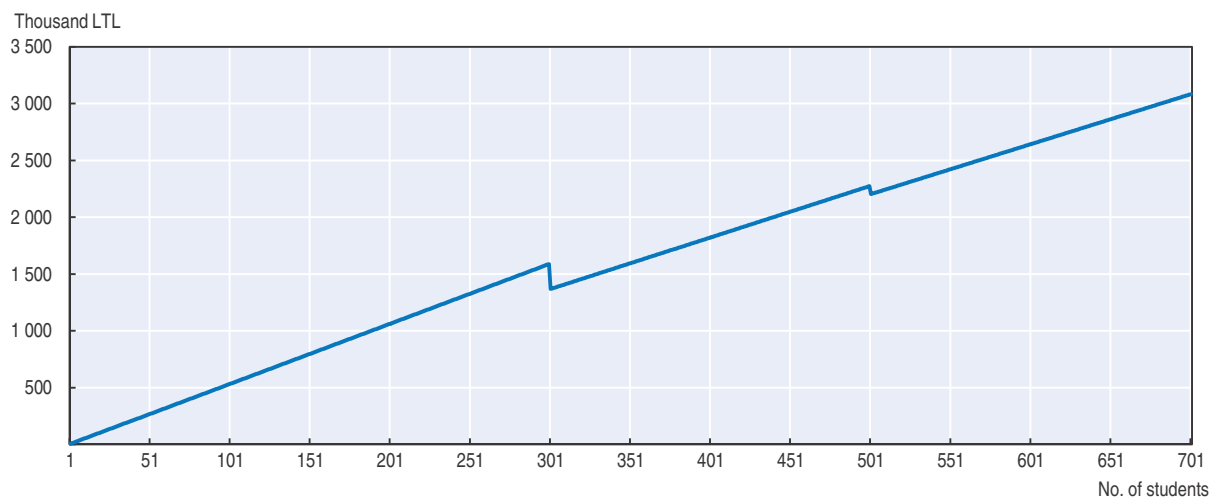
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ANNEX 3.A1

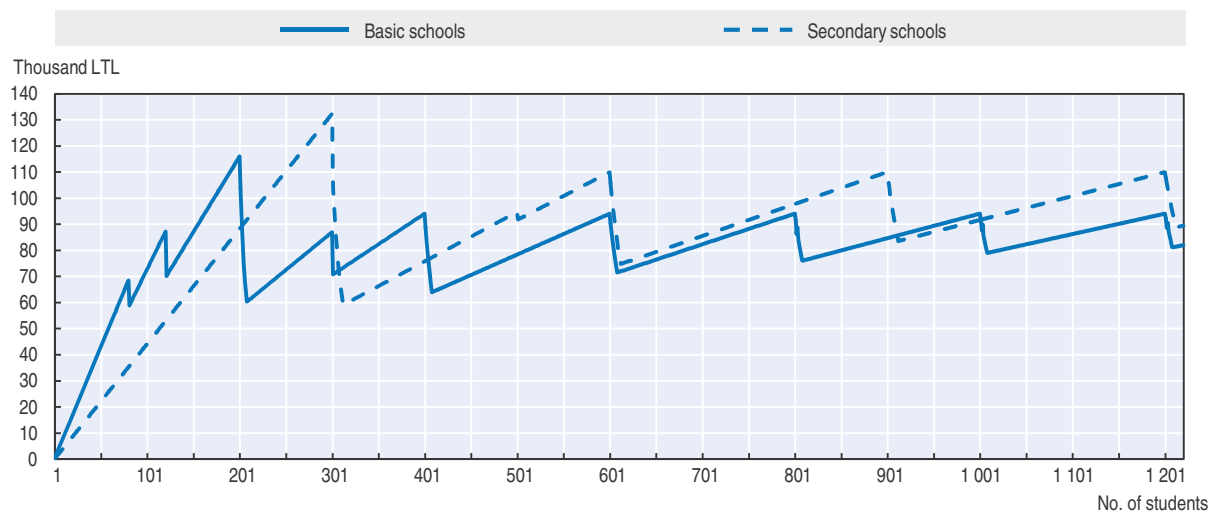
Data for Chapter 3

Figure 3.A1.1. Student basket funding for rural secondary schools (Years 1-12) of different size, 2014

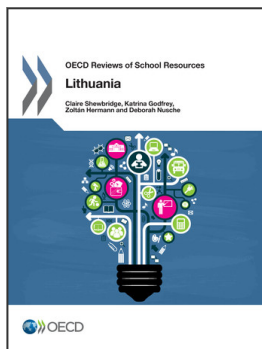


Source: Based on Table 3.1 and student basket amount for 2014.

Figure 3.A1.2. Student basket funding per class and school size for basic and secondary schools



Source: Based on Table 3.1 and student basket amount for 2014.



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