



Common Origin, Different Paths. Transformation of Education systems in the Czech Republic, Slovakia, Hungary and Poland

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Abstract

The goal of this work is to better understand the existing variation in educational outcomes between the Czech Republic, Hungary, Poland and Slovakia by comparing the institutional changes in the education systems. The motivation comes from the strongly divergent achievements of these countries in PISA tests, in which Poland has recently outperformed the other countries of the region. We attempt to demonstrate that the educational reforms implemented during the transformation period introduced very different institutional arrangements in the four countries, although their systems shared many common characteristics at the beginning of 1990s.

Differences between the national approaches to educational reforms are particularly reflected in the modes of education decentralization, level of school autonomy, measurement of outcomes, funding mechanisms, tracking of students to different educational paths and regulations regarding teachers.

Compared to the other three countries, Poland appears to have the most balanced division of competencies between various levels of educational governance, which seemingly makes the efforts of central agencies, local governments and school principals more complementary as compared to the other countries discussed. Delayed student tracking and the implementation of standardized examinations at three different stages of schooling has kept the Polish education system relatively uniform, and based on common standards, even though most managerial responsibilities have been transferred to the local level.

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1. Introduction

In the last decade, educational debates have shown a growing interest in the link between the specific institutional settings adopted in different systems and the quality of education. This discussion has been nurtured i.a. by the new phenomenon of cross-country comparisons of educational outcomes. Earlier, the systems were compared in terms of inputs but, as numerous studies show, inputs do not translate directly into outcomes, understood as the knowledge and skills acquired by students (Hanushek 1986, 2002 and 2003, Gundlach et al. 2001, Woessmann 2002 and 2003, Leuven et al. 2007, West and Woessmann 2006, Fuchs and Woessmann 2004). International student assessment programmes, such as PISA, TIMMS, and PIRLS have made it possible to measure the educational outcomes, track the trends and open up a broad perspective of cross-country comparisons. They provide data for evidence-informed policy and policymakers are increasingly interested in finding out what the sources of the success or failure of particular systems is.

The comparative analyses of the educational systems often have methodological deficiencies. For example, in the widely discussed McKinsey report (McKinsey et al. 2010) cases are selected on the basis of outcome. The authors

focus on successful systems, different in all other ways, and draw far reaching conclusions as to what features and reforms characterise the winners in the race. Yet, the validity of these results is questionable – we simply do not know whether the worse performing systems did not adopt similar arrangements (Wojciuk, 2012). A more legitimate way to look for the sources of successful changes would be to take systems which were similar at some historical point in time and later became more divergent. The reasons for the growing differentiation in results can then be investigated. We propose a Most Similar Systems Design analysis of educational reforms in four Central European countries: the Czech Republic, Hungary, Poland and Slovakia. We believe this type of analysis will allow us to identify the institutional changes that are likely to be at the origin of the increasing divergence of educational outcomes (measured by PISA outcomes) in a group of otherwise similar schooling systems.

2. Aims, conceptual framework, and methods

This is a qualitative comparative study of four educational systems selected according to the Most Similar Systems Design (MSSD) setting. We aim at better understanding the existing variation of educational outputs by comparing the institutional changes in the four education systems. We attempt to demonstrate that the educational reforms, which were part of the post-communist transformation in the four countries, adopted solutions which were very specific to each country, although the starting point was very similar. We are aware that differences in educational outcomes between the countries cannot be fully explained by uneven inputs, and that institutional factors may have contributed to the observed difference in student achievement. By adopting a descriptive form of analysis, we may better understand the discussed issues but we will not obtain definitive answers or prove the causal relationships. However, we believe that studies approaching public policy problems with econometric methods, although very valuable, frequently oversimplify the observed processes and overlook their specificity. This paper, based on a qualitative approach, may be considered as complementary to quantitative studies, and providing different insight into the functioning of education systems. Our intention is to contribute to the debate on the effect of educational reforms on learning outcomes. We also hope that it will add to the broad discussion on the decentralisation of public services and its effects on learning outcomes. Within the decentralization issue, we will devote particular attention to the issue of school accountability. The debate on accountability is at the core of contemporary educational research interests, and the approach to accountability is particularly diversified between the selected systems. Our hypothesis is that it may have a significant impact on education outcomes. The other important issue discussed in the paper is tracking, as the systems vary considerably in terms of the initial point at which they allow selection of children. Finally, our broader aim is to enrich research on political transition and will therefore be of interest to other systems, facing similar dilemmas and challenges.

In the next sections we will address the following research questions:

1. What did the systems look like at the beginning of 1990s, after the end of communism, which was a strong factor of policy convergence between the countries?
2. What were the general peculiarities of transition in each of the countries? Did education play a significant role in the transformation? If yes, what was this role? (e.g. transformation shock absorber)
3. What were the key institutional and legal changes: in governance structure (including privatization), curriculum, accountability and rules concerning financing? What were the common patterns and differences in the reforms?
4. What were the trends in inputs?
5. What were the trends in outputs (including equity of access and learning outcomes)?

6. Which countries were successful in educational reforms as measured by outputs, in both equity and skills?
7. What are the most likely institutional explanations for the amelioration of output in the educational systems?

The comparative analysis of four educational systems will be conducted on the sample of countries selected according to the MSSD setting. The Czech Republic, Hungary, Poland, and Slovakia faced a similar political and economic situation in early 1990s (with the Czech Republic and Hungary having a somewhat higher GDP than Poland and Slovakia). Their educational systems were based on the socialist model, common to many countries in the former eastern bloc. The countries are located in the same region of Europe, they share many similarities in their history, and finally they adopted similar strategic goals after the fall of communism: transition to democracy and a market economy, and institutional orientation towards the West with accession to NATO and the EU. Yet the detailed choices of the four countries in particular policy fields were quite different. Education is one policy area, in which reforms, although sharing a common general direction, established different institutional arrangements. We argue that this may have influenced learning outcomes.

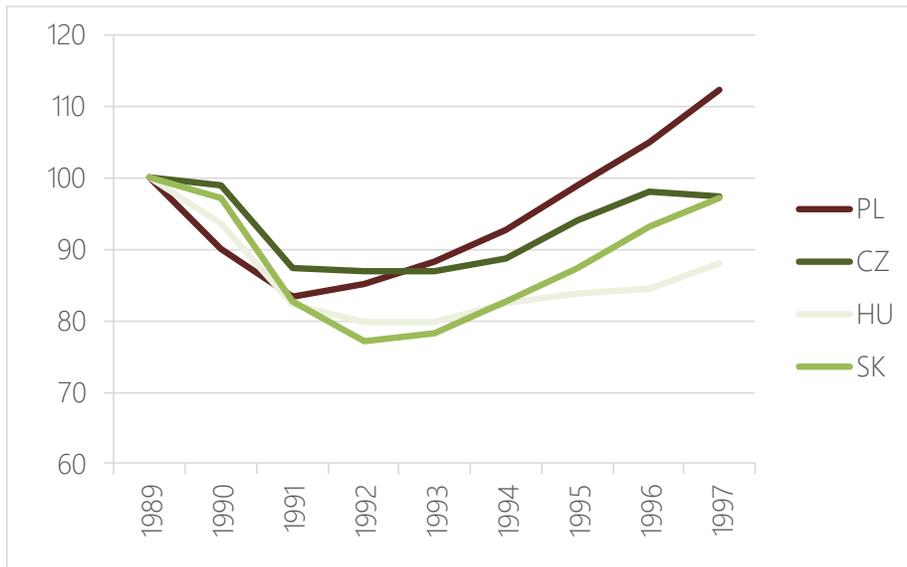
3. The origin and the outcomes

3.1 Education systems in the four countries in the context of transition

At the end of communist rule all three education systems: Czechoslovakian, Hungarian and Polish, were facing similar criticisms, namely: excessive unification, i.e. a centrally imposed curriculum, unified textbooks, rigid bureaucratic control, the dehumanization of pedagogical practice, and the blocking of local initiatives (Halász 1993). In fact, the systems were very similar. Compulsory schooling consisted of two tiers – primary and secondary. Primary school duration was 8 or 9 years and secondary school lasted for 3-5 years, the latter being divided into general, secondary vocational and basic vocational tracks, of which the first two concluded with a final examination, obligatory for school leavers intending to enter tertiary education. Until the end of communist rule all schools in the considered countries were maintained and managed by central governments (with some competencies reserved for regional agencies subordinate to the government). They were funded from central budgets, and had little or no autonomy with respect to both managerial and pedagogical tasks. External evaluation of schools relied on the reports from visiting, state appointed inspectors. The only national examination was taken by students at the end of secondary school. Although centrally administered, this examination was however conducted and graded within schools in all three countries.

In all countries considered, the vocational path used to dominate over general upper secondary education at the beginning of the 1990s. The structure of upper secondary schooling corresponded to the needs of socialist economies - as perceived by the central planners in the respective countries. However, the 1990s brought a breakdown in the old economic system with most of the state owned companies going bankrupt. All four economies experienced a deep recession after 1989, followed by fast growth of GDP in the subsequent period. Although the timing of the breakdown and recovery was different in particular countries, the general dynamics of economic growth, described by the u-curve, was similar (see Figure 1).

Figure 1. GDP in the Czech Republic, Hungary, Poland and the Slovak Republic in 1989-1997. 1989=100

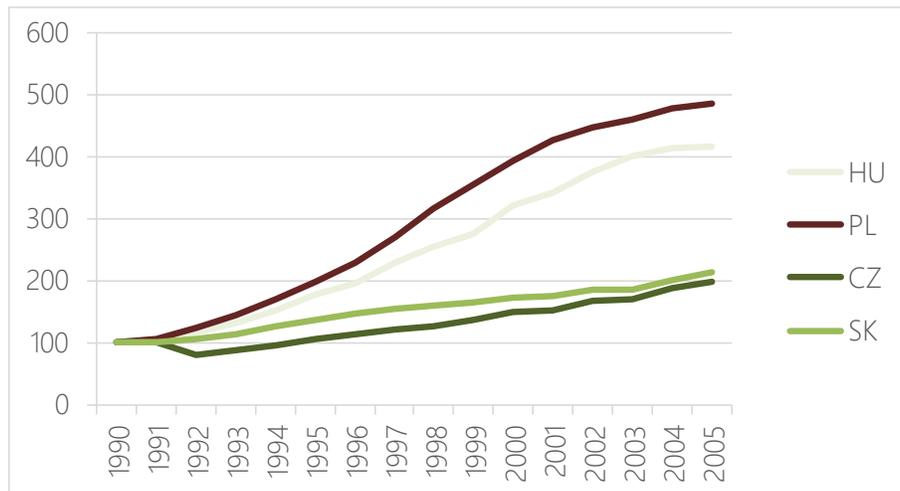


Source: based on Heston, Summers et al. 2011 (The Conference Board Total Economy Database)

One of the adverse effects of the economic transition in the CEE countries was rising unemployment, following the shrinking number of jobs in industry, and (particularly in Poland) in agriculture. As a natural consequence came an exodus from vocational schooling. During the 1990s, all four countries experienced a peaking demand for general secondary and tertiary education. The central planning for enrolment in different vocational profiles was suspended and the number of candidates for vocational training fell dramatically. The links between state-owned industry and vocational schools broke down. While at the beginning of the 1990s the schooling rate in schools offering basic vocational training reached 40%, 20 years later (in 2008), vocational training attracted only 16% of students in the corresponding age cohort in Hungary, 18% in Slovakia, 26% in the Czech Republic, and 15% in Poland (OECD 2010).

A specific feature of the transition in CEE countries' education systems has been the dynamic increase in demand for higher education (HE), although there have been some differences in this matter between particular countries. At the beginning of the 1990s, the four countries displayed a similar enrolment rate in HE. Around 10% of young people at school-leaving age opted for university studies. In the case of Poland 11.1% of 18-24 year-olds were enrolled in higher education institutions (HEI), in Czechoslovakia 10%, while in Hungary somewhat fewer – 8.6% (Baldi, Khalaf et al. 2000). In subsequent years student enrolment in Poland rose very rapidly, in the mid-1990s already doubling the number from 1990. The student population in Hungary grew nearly as fast as in Poland, while tertiary school enrolment in the Czech Republic and Slovakia rose at a much lower rate (see Figure 2). Slovakia did not double its student numbers until 2004.

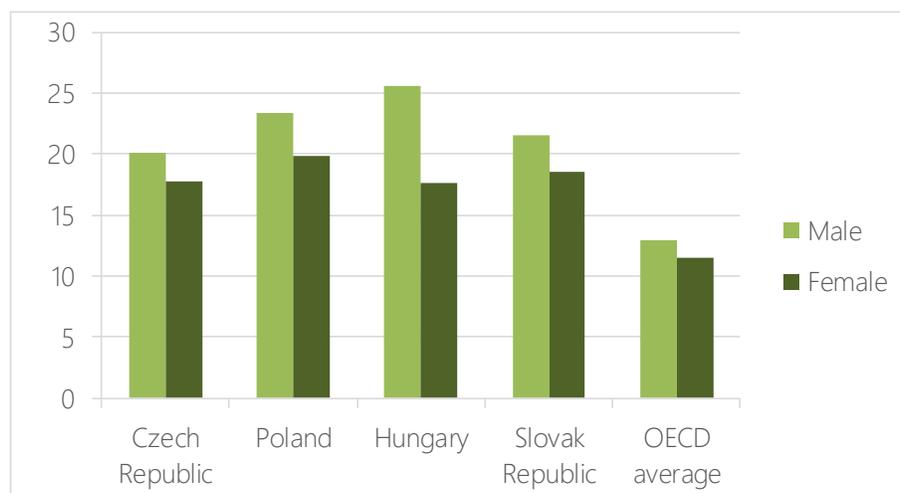
Figure 2. Number of tertiary students in the Czech Republic, Hungary, Poland and the Slovak Republic in 1990-2005. 1990=100



Source: own calculation based on data from the statistical offices of Hungary, Poland, Slovakia and the OECD database.

The shift towards general schools and the growing demand for tertiary education was related to the transitional shock on the labour market. Faced with sudden restructuring and uncertainty as to the skills on demand, general education gave better chances of employment and higher wage prospects than specialized training. Vocational training programmes started to be seen as inadequate. Enrolling in HE also delayed the moment of entering the labour market, making it possible to wait out the difficult economic period. OECD analyses (OECD 2013) show that the estimated private returns to higher education in all four countries discussed are much higher than the OECD average (see Figure 3).

Figure3. Internal rate of return to tertiary education relative to upper secondary education in 2009 (net present value)



Source: Education at a Glance, 2013

With respect to education management, the new governments relaxed the central bureaucratic control and extended the autonomy of schools and local self-governments. New curricula, more liberal regulations on school choice, allowing the market to exert pressure on schools, and the establishment of parent committees in schools, were all means to weaken the state monopoly in education. All four countries already started to extend school autonomy at the beginning of the transformation process, in the early 1990s: Czechoslovakia in 1990, Poland in 1991 and Hungary in 1993.

3.2. Outcomes of education - recent state and dynamics

The possibilities to compare the qualitative outcomes of education among countries are very limited. Each national education system has developed its own instruments to assess student performance, and any attempt to judge the differences in academic quality upon these instruments is pointless. Comparison can be made only on the basis of international assessment programmes, measuring the skills of students or graduates using the same questionnaires, sampling, and scaling methods in all researched destinations. The Czech Republic, Hungary, Poland and Slovakia participate in such programmes.

Recently, the most hotly debated is PISA (Programme for International Student Assessment), administered every three years by the OECD. The examination is administered to a representative sample of 15-years old students in each country and refers to three kinds of cognitive skills: reading, mathematics and science. TIMSS (Trends in International Mathematics and Science Study) administered by the IEA (International Association for the Evaluation of Educational Achievements) is an international assessment of the mathematics and science knowledge of 4th and 8th graders, conducted every 4 years. PIRLS (Progress in International Reading Literacy Study) conducted twice (in 2006 and 2011) also by the IEA, is a comparative study of reading achievement in 4th graders. PIAAC (Programme for the International Assessment of Adult Competencies), conducted by OECD for the 1st time in 2012, measures the key cognitive and workplace skills of adults aged 16 to 65 needed for individuals to participate in society and for economies to prosper.

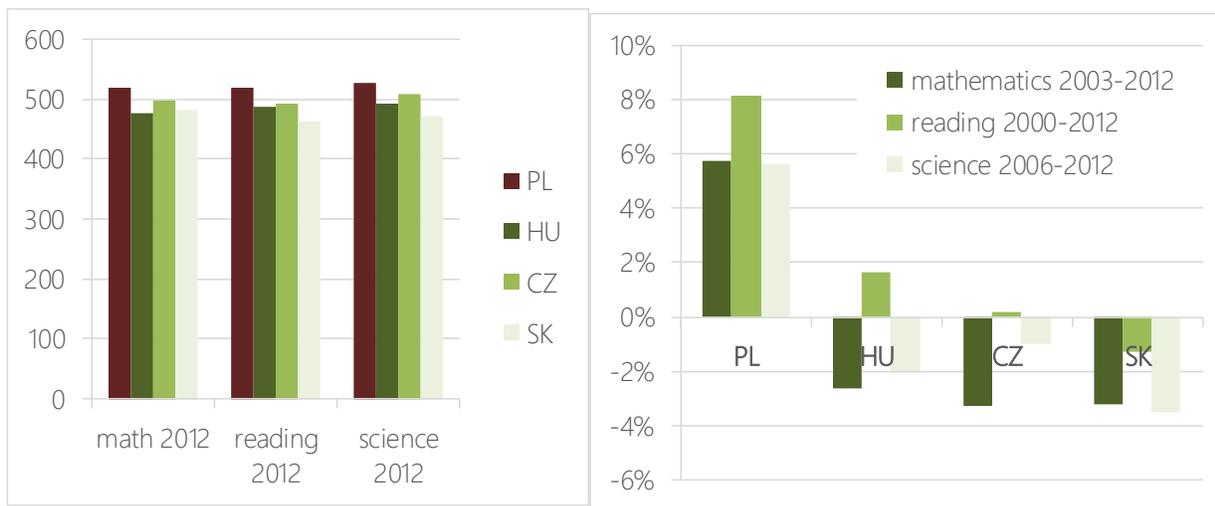
Table 1. Participation of the four countries in PISA, TIMSS, and PIRLS programmes.

Programme	Year	Czech Republic	Hungary	Poland	Slovakia
PISA	2000	X	X	X	
	2003	X	X	X	X
	2006	X	X	X	X
	2009	X	X	X	X
	2012	X	X	X	X
	1995	X	X		X
TIMSS	1999	X	X		X
	2003		X		X
	2007	X	X		X
PIRLS	2011	X	X	X	X
	2006		X	X	X
	2011	X	X	X	X
PIAAC	2012	X	X	X	X

Of the four assessment programmes listed in Table 1 we will focus on PISA. First, because it examines 15 years old students, while PIRLS tests pupils very early in their educational career (4th grade). Although TIMSS includes testing in both 4th and 8th grade, many participating countries (including the Czech Republic, Poland, and Slovakia) only conduct the assessment for younger pupils. Second, Poland participated in only one edition of TIMSS. Third, in contrast to most other countries, which applied TIMSS in the fourth grade of primary schools, Poland decided to measure the skills of pupils in the third grade, which makes the results hardly comparable between countries.

Recent (2012) average PISA scores for the Czech Republic, Hungary, Poland and Slovakia are shown in Figure 4. As presented in the left panel, Poland is the only one of the four countries with a significantly higher result than the OECD average of 500 points, in all three parts of the test. Czech students' performance in science and mathematics is better than their achievement in reading, and in general close to the OECD mean. Both Hungary and Slovakia score below average in all tests. Hungarian students show particularly low achievement in mathematics (477 points), while Slovakia scored low in reading (463).

Figure 4. Average PISA 2012 scores in 2012 (left panel) and the % change in average score over 2000-2012 (reading), 2003-2012 (mathematics), and science (2006-2012) in the four countries.



Source: based on OECD data

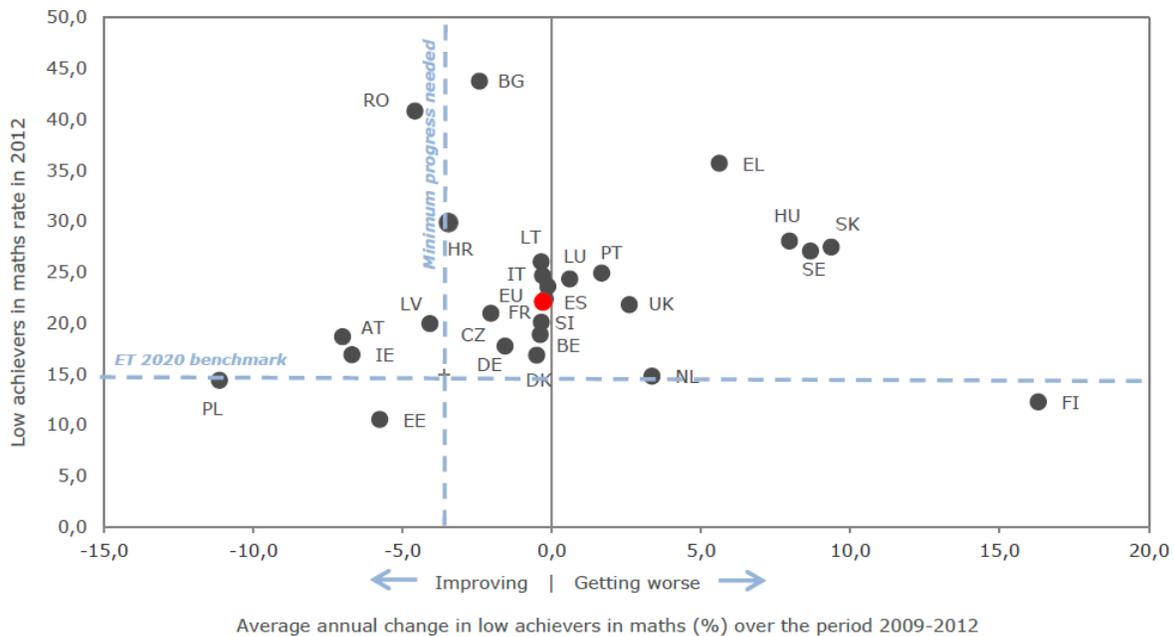
The differences in change of the national average scores between 2012 and the year in which the given test was administered for the first time are even more striking. As shown in the right panel of Figure 4, Poland's score in mathematics improved by 5.7% between 2003 and 2012. The average achievement in the other three countries decreased over the same period (by between 2.7% and 3.3%). The change of performance in reading and science followed the same pattern. The relative performance of Polish students improved (by 8.1% and 5.6% respectively), while the scores of the Czech Republic, Hungary, and Slovakia went down. The only exception from this rule was the Hungarian result in reading, which slightly – by 1.7% - increased over the period 2000-2012.

Although the average country scores provide valuable insight into the performance of students in different systems, there are serious concerns about limiting the accountability in education to measuring the average achievement. It is frequently argued that policies improving the average performance may be harmful to low achievers, as the didactic effort is focused on their more talented fellows. To address this issue, some analyses of

PISA results emphasize the share of low performing students in student populations of particular countries as an important indicator of education quality. For example, the European Commission (2013) focused on the share of students at proficiency level 1 according to the PISA scale². Figure 5, resulting from this study, shows the proportion of students at proficiency level 1 in mathematics and the percentage change in low achiever numbers between the 2009 and 2012 editions of PISA³. The dashed vertical line denotes the minimum progress needed for the EU as a whole to reach the ET 2020 (Strategic Framework for European Cooperation in Education and Training) benchmark of "below 15%". The dashed horizontal line represents the benchmark itself.

As it turns out, among the four countries of interest, two (the Czech Republic and Poland) managed to decrease the share of low achieving students between 2009 and 2012, while in the two others (Hungary and Slovakia) the number of low achievers grew substantially. Poland is the only one of the four countries (and one of three in the EU), which has already met the ET 2020 benchmark with respect to reducing the number of students poorly performing in mathematics. The Czech Republic seems to be on the way to achieving the 15% requirement, while Hungary and Slovakia are rather far from it.

Figure 5. Percentage of low achieving students (mathematics): level and annual change



Source: EC 2013

² The PISA 2012 scores are divided into six proficiency levels ranging from the lowest, level 1, to the highest, level 6. In mathematics, pupils that only reach level 1 "can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are obvious and follow immediately from the given stimuli." However, they are not able to complete tasks at higher levels.

³ As explained in the study, the average annual change is an artificial approximation based on performance differences between in the 2009 and 2012 data.

Another way to examine the equity of education systems is to focus on the variation in outcomes between schools. The four countries vary considerably with respect to this issue. According to PISA 2012 results in mathematics, Hungary has 4th highest between-school variation among the OECD countries. Slovakia has the 7th highest, the Czech Republic holds 15th place, with slightly lower level variation than Slovakia. Poland is a very different case, as it has one of the lowest between-school variations among the OECD countries, with only 10 countries where schools vary less in the average performance of students. A similar rule applies to the degree to which between-school differences are explained by students' socio-economic status. According to PISA 2012 data, when participating countries are ordered by the falling impact of socio-economic status on student achievement in mathematics, Hungary holds the 5th place, the Slovak Republic 10th place and the Czech Republic 15th place, while Poland is significantly below the OECD average, in 40th place.

As an alternative to the PISA score, school quality in different countries can be examined from the perspective of labour market outcomes. Although the formative role of school, especially at higher tiers, goes far beyond the preparation of students to enter the labour market, the ability of school graduates to find employment is still widely considered as one of the possible criterion to assess the effectiveness of the education system. Commonly, the unemployment rate among recent school graduates is much higher than for older cohorts. Data shown by Piopiunik and Ryan (2012) confirms this rule with respect to CEE countries.

The unemployment rate in the age group 15-24 has been recently (2010) very high in Slovakia (33.6%), Hungary and Poland (26.6% and 23.7% respectively). Czech youth faces somewhat smaller difficulties while looking for employment, although the 18% unemployment rate should still be considered as high. When expressed as a ratio to the unemployment rate in the 25-54 age-group, youth unemployment is very similar across the compared countries (see Table 2). The highest ratio is observed in the Czech Republic and Poland (2.86), and the lowest – in Slovakia (2.63). Therefore, although the situation of school graduates on the labour markets in the four countries is quite different, the diversity comes rather from the characteristics of the national labour markets themselves, and not from the differences in the effectiveness of education systems.

Table 2. Unemployment rates by age groups (2010) in the Czech Republic, Hungary, Poland and Slovakia

	age 15-24	age 25-54	youth-adult unemployment ratio
Czech Republic	18.3	6.4	2.86
Hungary	26.6	10.4	2.56
Poland	23.7	8.3	2.86
Slovak Republic	33.6	12.8	2.63
OECD average	16.7	7.5	2.23

Source: Piopiunik and Ryan 2012

4. Approaches to educational reforms

4.1 Organization of schooling and tracking – recent state

In the **Czech Republic** compulsory education starts at the age of 6, but a non-negligible and still growing proportion of children starts at the age of 7. It finishes at the age of 15, lasting 9 years. Compulsory education was extended to 9 years in late 1990s when an additional year of lower secondary school was added. Basic school consists of two levels: primary grades 1-5 (ISCED 1) where all subjects are taught by a generalist teacher (for ages 6 to 11, 12, or 13), and lower secondary - grades 6-9 (ISCED 2) where subjects are taught by teachers specialising usually in two subjects (for ages 11, or 12, or 13 to 15). Lower secondary education can also be completed in a multi-year *gymnasium* (grammar school). The multi-year *gymnasium* is a selective educational path during compulsory schooling. It offers both lower and upper secondary levels of education, while four-year *gymnasia* provide students exclusively with upper secondary schooling. This system effectively gives preference to students with higher socio-economic status. After completing compulsory schooling, students can also continue their education in secondary technical and vocational schools. The network of basic schools in the Czech Republic is even and dense, consisting of about 5000 schools, but many of them (35%) are small schools with fewer than 50 pupils. This large proportion of small schools is peculiar to the Czech system. The students (or their parents) can choose the schools they attend. Class size ranges from a minimum of 17 up to 30, with an average of 20 pupils (in 2010/11).

In the **Slovak Republic**, as from 1998, compulsory education starts at the age of 6 and lasts 9 or 10 years, or until the student reaches the age of 16. It consists of primary school organized as a single structure, with a first stage (4 years) and a second stage (5 years). Before 1998 primary education lasted 8 years, as in the Czech Republic. After five years of primary schooling (four years before the school year 2009/10), students have the option to apply to an 8 year academic school – *gymnasium*. Secondary education is provided by several types of school (usually lasting 4 years). General secondary education is offered by so called grammar schools (lasting 4 to 8 years), preparing students for higher education. Students choosing technical/vocational education can also continue in higher education if they complete a school-leaving examination. Secondary education finishes either with a school-leaving examination after 4 years (providing a Secondary School Leaving Certificate) or with an apprenticeship exam after 2 or 3 years. About one quarter of all students finish their secondary education with an apprenticeship certificate.

In **Hungary**, education starts at the age of 6-7 and, under the Public Education act of 2011, is compulsory until the age of 16. Four-years in elementary school is followed by four-years in lower secondary school. After grade 4, 6 or 8 students can apply to enter *gymnasium* secondary school programs. Extended 8 and 6 year *gymnasium* programs (starting after grade 4 or 6) were to be abandoned but the reform has not been implemented and they are still available for students. These programs are usually attended by high achieving students or those with higher social status, whose parents make an effort to place their children in a *gymnasium* at an earlier age. However, the most popular secondary programs are 4-year vocational secondary schools, 4-year *gymnasiums* and 4-year vocational schools.

In **Poland**, primary school starts at the age of 7 but a reform lowering the school starting age is in the process of implementation. As from 2015, all children will start primary school at the age of 6, and one year of preparation (at school or preschool) will be compulsory for all 5 year old. Compulsory education lasts until the age of 18. Primary school lasts for 6 years after which pupils are enrolled in lower secondary school (*gymnasium*), which lasts another 3 years. Polish law defines two separate obligations for students: compulsory schooling and compulsory education. The compulsory schooling rule obligates all children to graduate from primary and lower secondary

school. This usually happens at the age of 16. However, education is compulsory until the age of 18 – which in practice means it has to be continued after completing the lower secondary tier in some form of upper secondary or vocational school. The vocational secondary path typically lasts for 4 years, general secondary school – 3 years, and basic vocational training – 2 years. The former two paths end with a standardized final examination, which entitles students to enrol in tertiary school.

The average time spent yearly in class by students in all four countries remains below the OECD average. The Polish and Slovak education systems are characterized by a more loaded curriculum (more hours of instruction) during primary schooling (ISCED 1), compared to the Czech Republic and Hungary. In turn, Czech and Slovak students work more at the ISCED 2 stage, compared with Hungary and Poland (see Table 3). By averaging data for the two tiers, we can see that Slovak schools provide the most hours of instruction per year, while Hungarian students receive the least.

Table 3. Average number of hours per year of total compulsory instruction time (2011)

	Primary schooling	Lower secondary schooling
Czech Republic	597	848
Hungary	572	659
Poland	649	746
Slovak Republic	691	821
OECD average	791	907

Source: OECD Education at a Glance 2013

The four countries differ significantly in terms of the average number of students per teacher. The disparities are particularly visible at the primary tier. The Czech Republic and Slovakia have a significantly higher student-teacher ratio at this level, compared to Hungary and Poland, and their indicators are above the OECD average. In turn, in Polish and Hungarian primary schools the student-teacher ratio is very low (11 and 10.7 respectively), which reflects the relatively small average class size in these two countries (see Table 4)⁴. The differences are less pronounced at higher tiers of schooling, although the Slovak student-teacher ratio is consistently high across all schooling levels and corresponds to the OECD mean.

Table 4. Ratio of students to teaching staff (2011)

	Primary	Lower secondary	Upper secondary
Czech Republic	18.7	11.1	11.7
Hungary	10.7	10.5	12.4
Poland	11.0	10.0	11.1
Slovak Republic	16.9	13.1	14.3
OECD average	15.4	13.3	13.9

⁴ In the case of Poland it may also be reflection of statutory teaching time per teacher (see section on teachers)

Source: OECD Education at a Glance 2013

While the general organization of education systems in the four countries may seem similar, the attitude towards tracking students into various schooling paths is very different, particularly between Poland and the other three systems.

The **Czech** system is very selective, characterised by early tracking and streaming of students based on academic abilities. While in the OECD the average age of tracking is 14, in the Czech Republic it occurs at the age of 11, when about 13% of the cohort is attracted to the elitist multi-year (8) *gymnasia* (see Figure xx). The next opportunity to track is at the age of 13, when another part of the cohort moves to the multi-year (6) *gymnasia*. The majority of children from a low socio-economic background do not transfer to *gymnasia*, in contrast to children from higher socio-economic backgrounds whose parents consciously choose schools based on quality and peers. Another policy, which has a potentially negative effect on equity, relies on enrolling low-achieving children (about 5% of each cohort) into special schools with reduced curricula. After finishing the lower secondary level in basic schools, students choose either an academic track (22% of all secondary students⁵), a secondary technical track (45% of the age cohort) or a vocational track (35%). Schools select children according to their own rules. The Czech Republic has one of the lowest proportions of students in general education among OECD countries. As Strakova et al. (2006) claim, both TIMSS and PISA studies show that the Czech Republic is one of the countries exhibiting the largest divergence among the results of students attending different tracks in their final year of lower secondary studies and showing a large between-school variation. The distribution of students in particular upper-secondary tracks is largely explained by their socio-economic status.

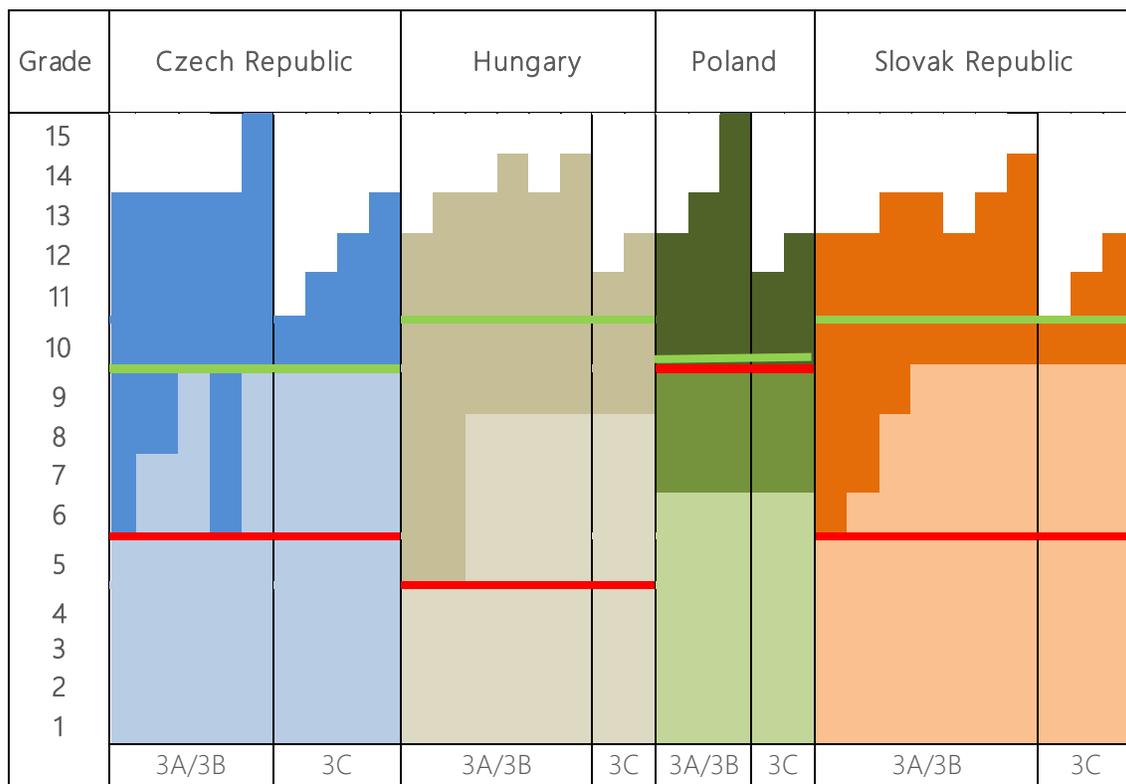
The **Slovak** system is also highly stratified, with children being allocated early into different types of schools based upon their perceived ability, and later being sorted into five tracks. The first selection can occur even at the age of 10, and is focused on identifying students who can be particularly academically-oriented. About 8% of students move to *gymnasia* at the age of 10 or 12 after passing a relevant exam. However, for most of the children tracking occurs at the end of the 5th grade. Slovakia has recently delayed this moment, moving it from grade 4. Overall, approximately 25% of each cohort (typically the best students) attend *gymnasia* (grammar school) and 55% the advanced vocational track, which also allows them to continue education at the tertiary level after gaining upper secondary qualifications. Vocational Secondary Schools do now allow students to enter the tertiary level of education. Furthermore, students are later sorted within given tracks according to their ability. Socio-economic background has a major impact on the track the student enters (OECD, 2007: 82). Zelmanova et al. (2006) found, based on PISA 2003 data analysis, that girls and high socio-economic status students are much more likely to be selected to *gymnasia* than boys and low socio-economic status students. Moreover, students attending *gymnasia* scored more than 100 points higher than students in other schools. Slovak authorities have recently implemented a policy aiming at reducing stratification, in order to encourage the integration of Technical Secondary Schools and Vocational Secondary Schools.

Hungary faces major challenges as far as between-school variation is concerned. Although the general quality of education in the country has increased, the implemented reforms have had a negative impact on equity (Halász 2002: 9). Before 1990, the basic education ended at grade 8, but during the transition time the growing number of secondary schools started to enrol students even after grade 4 and 6. The Hungarian government considered restoring the original length of primary schooling (until grade 8) or even extending it. Currently, however, student tracking is still possible already after grade 4. The Hungarian system of education is one of the most unequal among the countries participating in the PISA study. Schools are free to select and admit only those students that suit them. Horn et al. (2006), basing their analysis on PISA 2003 data, show the dramatic disparities in student

⁵ This includes not only those tracked to 4 years long *gymnasia*, but also those who had been selected into multiyear *gymnasia* at younger ages.

performance among the three tracks in Hungary: academic, vocational secondary and vocational. The authors show that the achievement gap is related to differences in the socio-economic status of students' families. The superior performance of the academic track is likely to result from the high ability and high status students that it selects, while the advantage of secondary vocational over vocational is likely to result from "skimming-off" the best ability but lower status students. Vocational training schools get the least talented, and of the lowest status group. In contrast to Poland, the PISA study of 15-year-old students in Hungary concerns students who have already been selected into three different tracks. Horn et al. (2006) claim that the huge differences in student performance in Hungary are due to the early tracking.

Figure 6. Organization of schooling in the Czech Republic, Hungary, Poland, and the Slovak Republic.



The green line represents the end of compulsory education. The red line represents the stage when initial tracking into schools of different profiles occurs

Compared to the other three countries, the **Polish** approach to tracking is very restrictive. Until 1998 (before the introduction of lower secondary schools), initial tracking took place after completing primary school (thus after grade 8). After introducing the separate middle tier of schooling, common compulsory education now lasts until grade 9, and initial tracking follows graduation from lower secondary school. It is not possible to enrol in upper secondary school before graduation from the lower secondary level, so there is no opportunity to track students before they conclude grade 9. Naturally, it is still possible to sort students into schools of different quality. Recently, some experts have raised concerns that the introduction of lower secondary schools, contrary to the intentions of policy makers, has contributed to the early sorting of students, particularly in large cities.

4.2. Decentralisation of education provision

The first wave of decentralisation in **Czech and Slovak** education arrived in the early 1990s, even before Czechoslovakia was divided into two independent countries in 1993. The initial reforms increased the responsibilities of schools, allowing secondary and to a lesser extent primary schools independent legal status. It also provided self-governing municipalities with some limited competencies transferred from the state level, i.a. to act in the management of schools. In the first year of transition, numerous non-state schools were established, although there was a constant debate about the path of transition, with many criticisms of market-oriented changes. Questions were raised as to whether private and church schools should receive public subsidies, whether the government should impose a quota on the number of pupils in individual schools, if cross-regional enrolment should be restricted and, if not, who should cover the cost of education. Between 1990 and 1992, 75% to 90% of education leaders were replaced, both those holding administrative positions and school principals. As early as in 1989 the communist School Inspectorate and district level schooling offices had their staff completely replaced. Even so, at the beginning of the 1990s school principals were still governmental employees, employed by the schooling offices.

In the 1990s decentralization gradually progressed in the **Czech Republic**. Between 1992 and 1998 all schools gained legal independence, which resulted in the transfer of numerous competencies, responsibilities and burdens to the school level. School principals were empowered to hire/fire teachers and staff, allocate wages and maintain schools. This change took place mainly at the expense of the District School Offices (DSO's), an intermediate level of central governance which had earlier been in charge of many administrative tasks. As stated by Munich, decentralization replaced the unified, routinized administrative management performed by DSO with the individual efforts of school principals, who had no experience with this kind of task. This came at the expense of their involvement in pedagogical tasks. DSOs were gradually divested of powers over primary schools and finally in 2000 they were dissolved. Many competencies regarding primary education were transferred to local authorities. This included: the distribution of funds received from the central government (municipalities are also allowed to use local fee-based revenues); maintenance of school buildings; capital investments; as well as nominating and dismissing school principals chosen in an open competition. Formally, municipalities also gained some competencies with respect to supervising the quality of instruction, but most of them do not have the resources to supervise schools. Between 1993 and 2003, municipalities became the funding bodies for all primary schools.

The abolishment of District School Offices also meant the decentralization of secondary schooling. From 2001, secondary schools became subordinated to the self-governing regions. The regions manage schools through regional school committees, being a part of regional administration. According to Munich, this reform has exposed schools to local politics to much greater extent than in the times of District School Offices.

Following the reforms in 1995, around two thirds of decisions concerning primary schools were already being taken on the school level (in secondary schools to a slightly lesser degree). Municipalities were in charge of only 7% decisions, and DSOs of approximately 20% of decisions in primary schools. Bacik (1995) claims that in the mid-1990s the school autonomy provided by the new laws was not in fact fully exercised, as most of the decisions on the school level were taken on the basis of central guidelines issued by the Ministry and with consent of the District School Offices. This process deepened further in the course of the late 1990s and 2000s. Further decentralisation of administration was introduced when 14 self-governing regions started functioning in 2001. This reform added a new level to the already existing structure of administration, composed of 86 districts and 6 200 municipalities. After 2006, centrally imposed curricula were also abolished and schools gained further autonomy in deciding about instruction. Compared to other OECD countries, the Czech system grants particularly large share of

competencies to schools, and a considerable share to municipalities, leaving little to the central government. The 2001 change in school governance had major implications for the functioning of the system. Until 2001, primary school principals were hired by municipalities in an open competition, and then every 4 years they were evaluated by the School Offices. Now they are hired by municipalities for a period of 6 years. Firing can be performed by municipalities only under so-called "serious circumstances", which relate to non-compliance with legal regulations, and do not include poor quality of instruction. The decentralization process therefore consisted of three pillars: first, the growing managerial role of school principals; second, the transfer of responsibilities from central government to local municipalities; and third, the abolition of centrally imposed curricula, which will be discussed further in this paper. This transformation was not accompanied with the provision of adequate monitoring nor with feedback tools.

The education system of the **Slovak Republic** prior to 2003 can be described as partly centralized. In contrast to the three other countries, no responsibility for education was devolved to the local government, although many municipalities were making *ad hoc* contributions to school equipment and repair even in the 1990s. The Ministry of Education was the central body of the state administration for primary and secondary schools. The school departments in Regional and District Offices were in charge of education at the middle level of governance and were subject in this respect to the Ministry. From 1996, they were in charge of i.a. establishing and dissolving schools, distributing central funds among primary and secondary schools, hiring school principals, and maintaining the buildings. They were also in charge of supervising schools' compliance with legal obligations. Since the decentralization in 2003, when Regional and District Offices were dissolved, self-governing regional and municipal authorities (or, in the case of non-public schools - churches, natural persons and legal entities) started administering both primary and secondary education, including the establishment and dissolution of schools, appointment of school principals and ensuring the material conditions for the schools' operation. Local authorities also became empowered to control school spending. In turn, the state remained responsible for defining generally binding rules for the system. It determined (directly and *via* its agencies, like the National Institute for Education or the National Institute for Certified Educational Measurement - NÚCEM) the principles of pedagogical supervision, designing educational policies and curriculum (Mentel and Pokorný 2012). The education system in **Hungary** was decentralized following the general reform of the administrative structure in 1990 (Act on Local Governments). Self-governing municipalities replaced local councils and became responsible for maintaining primary schools. In turn, the 19 county self-governments and county level cities became responsible for secondary and vocational schools. The Ministry of Education and Culture remained in charge of the basic curriculum and core standards, quality, financial arrangements and developmental programs. The reforms of 1998 established a new Ministry of Education, which overtook the competencies of the old service and took charge of vocational training also, formerly managed by different sectorial Ministries.

In the early 1990s, among other responsibilities regarding primary education, local governments hired and fired school principals, defined the number of teachers and other staff, and supervised schools with respect to finances and fulfilment of legal regulations. As a result of insufficient funding from the central budget as well as the severe demographic problems that were already being experienced, municipalities increasingly tried to lower the burden, e.g. by contracting educational services to external providers.

Since the central government did not have adequate tools for keeping schools accountable for the implementation of curriculum (as the system of inspection was abolished in 1986), it decided to make municipalities responsible for the quality of instruction. The vast autonomy in curriculum development given to schools increased the differentiation between schools, sometimes producing adverse effects. Although schools that did not have capacity to produce quality curricula could adopt one of the options offered by the Ministry, some schools designed and implemented teaching programs of questionable value (Vágó 2000). Therefore, the between-school variation, which already existed in Hungary before the discussed reforms, further increased. Some authors argue that decentralisation of education in Hungary deserves criticism, as it focused mainly on abolishing the existing

structures of centralised control, without introducing alternative arrangements which would ensure the consistency of the system (Halász 1993, 2002: 9).

Recently, the government of Victor Orbán has undertaken reforms, which reverse earlier decentralization policies. In 2011, all principals were forced to resign and then reapply for their post. In this process, many of them lost their jobs permanently. As a second step, by January 1st 2012, all schools in municipalities numbering less than 3000 inhabitants (4169 schools) were automatically overtaken by the central authority. Larger municipalities could remain responsible for the maintenance and real estate but most of them decided anyway to transfer this responsibility to the state. Currently, almost all the competencies are centralized, with the state deciding about hiring and firing, as well as managing the entire educational process. In 2012, the government established the Klebelsberg Institution Maintenance Center, which is a liaison between the Ministry and school administrations, and which manages more than 4000 schools, with 1.2 million students and 120,000 teachers. The Center has almost 200 district offices, one in each *járás* (a re-established 100-year-old administrative unit). In other words, all teachers and school principals became employed directly by state authorities and their wages are paid by the central government. Salaries are fixed and depend only on the teacher's position within the official promotion system. The supervisory role of the state has been significantly strengthened at the expense of municipalities. The state agency (Klebelsberg Institution Maintenance Center and its district offices) is running the whole system in a centralized manner.

Similarly, to the other countries discussed, **Poland** profoundly decentralized its education system during the 1990s. In terms of its remit, scale of expenditure and its role in the community, education is now undoubtedly the most important area of activity for Polish local governments. This duty was handed over to them in the early 1990s, not long after the reinstatement of local government in Poland, despite fears, particularly in educational circles, that the inexperienced local institutions would prove incapable of meeting such a complex challenge. The decision stemmed partly from the fact that the main aim of reform in public administration was to create strong and independent local governments. This reform was aimed at breaking with the communist heritage of the Polish centralized state and to build a rational and democratic administrative system. It was also intended to increase the efficiency and effectiveness of public services by passing responsibility to local governments for defining aims, financing and managing them (Levitas 1999, 409).

The first educational role taken on by local governments was the running of pre-schools. This became the statutory duty of municipalities (*gminy*) from 1991, thus from the moment of reinstating local governments in Poland. As from 1993, municipal councils began, on a voluntary basis, to take on the management of primary schools. Before this became a statutory duty in 1996, municipal councils were already in charge of 32% of primary schools. A further stage in decentralization reforms of the education system was the hand-over of post-primary schools to local government control. To begin with, between 1996 and 1999, only large cities made use of this opportunity as part of a pilot programme. However, in 1999 two reforms were introduced – in administration and schooling. As part of the first reform, a county level (*powiat*) of local government was established and the 49 *voivodships* were reorganized into 16 new regions. It now became the statutory duty of counties to run basic vocational schools, technical colleges as well as general and profiled high schools. Meanwhile, the education reform involved creating middle (lower secondary) schools as an intermediate level between primary and upper-secondary education. The management of middle schools automatically became a statutory duty of municipal governments. The current competencies of local governments in Poland with respect to education provision are very wide: planning the budgets of pre-schools and schools, setting teacher wages (within country-level regulations), adjusting the school network, transporting pupils to school, maintaining and improving the facilities, as well as organizing and financing extra-curricular activities.

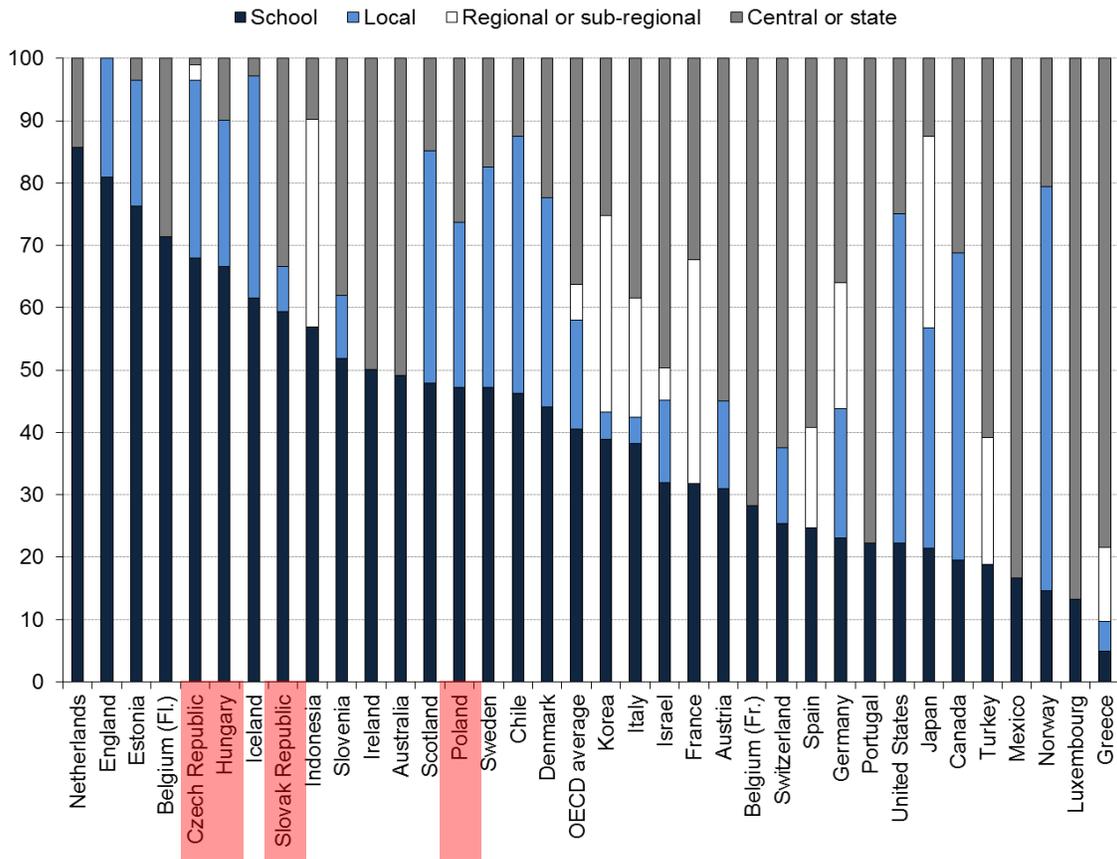
Given the common origin and common political motivations, the mode and scope of decentralization in each of the four countries are surprisingly diverse. In each case decentralization was a political process, embedded in the particular dynamics and circumstances of a broader transition, rather than a reform designed within educational

circles. The four countries ended up with a quite different division of responsibilities among institutions and various levels of administration (even if we ignore the recent re-centralization moves in Hungary). This diversity is well illustrated in Figure 7, depicting the percentage of education related decisions (with respect to lower secondary education) taken at each level of government. As it turns out, the Czech Republic went very far along decentralization path and left particularly few competencies (1%) to its central government. The Czech degree of decentralization is very high not only in relation to the four countries discussed, but also compared to all OECD countries. At the same time, it remains one of the countries with highest percentage of decisions being made directly at school level (68%), and has a noteworthy scope of competencies (28%) assigned to local governments. Interestingly, the Slovak Republic, which naturally had a common education system with the Czech Republic until 1993, eventually followed a different path and transferred much less responsibility to municipalities (7%), while preserving much more at the central level (33%). As the data on the graph refer to the year 2011, division of responsibilities in the Hungarian education system closely resembles the Czech system, with two thirds of decisions being made by school principals, an important role being played by municipalities and little influence exerted from central government. However, as described earlier, a profound recentralization of Hungarian education is currently taking place. Out of the four countries, Poland seems to have the most balanced division of tasks between different tiers of government. Roughly, 50% of decisions are left to school principals, while municipal authorities and central government are both responsible for about 25% of tasks. Interestingly, although the Polish education system is more centralized in terms of decision making than the Czech, Slovakian, and pre 2012 Hungarian systems, it still leaves more power to local governments and school principals than is the case in the average OECD country. It shows once again that the degree of decentralization in CEE countries is very high. The decentralization of education in these countries was clearly a part of the bigger political plan of cutting the post-communist central administration, which explains both the dynamics and profundity of this process.

In all four countries questions have been raised as to whether the local governments and schools have sufficient competencies and capacities to properly fulfil the numerous and complex tasks assigned to them. The smaller the units, the more likely some of them may lack the resources to provide education of good quality. As local governments in all countries (except Hungary after 2011) contribute financially to maintaining the education system, it is also important to look at the fiscal strength of school governing municipalities as an important indicator of their capabilities.

The degree of fiscal federalisation in Slovakia is quite low. Less than 20% of public expenditure is made at the sub-central level. Local governments have a somewhat stronger position in the Czech Republic and Hungary, where approximately one quarter of public expenditure is made by territorial self-government. The ratio is, however, substantially higher for Poland, where local and regional expenditure accounts for 32% of total government spending.

Figure 7. Percentage of decisions taken at each level of government in public lower secondary education (2011).



Source: OECD Education at a Glance 2012

As shown in Table 5, both the local administration and primary school network in the Czech Republic, Slovak Republic and – to a somewhat smaller degree – in Hungary, are very fragmented. In the former two countries the average municipal population is below 2000, and most municipalities have less than 500 inhabitants. Even if not every municipality runs a primary school, the average school is very small (between 111 pupils in the CR and 141 in Hungary). In contrast, Polish municipalities are rather large (15500 inhabitants on average). The mean municipality in Poland maintains between 4 and 5 primary schools. The primary school network is rather dispersed, but the average school has 159 students, more than in any of the remaining three systems.

Table 5. Indicators of fragmentation and decentralization in schooling and administration

	Average primary school size	Average municipality population	Sub-central government spending as % of total government spending (2011)	Average number of primary schools per municipality
Czech Republic	111	1682	26.32%	0.78
Hungary	141	3141	23.07%	1.14
Slovak Republic	132	1872	17.46%	0.86
Poland	159	15 500	32.09%	4.5

*OECD Government at a Glance 2013, OECD Education at a Glance 2013, national statistics

4.3. Education Funding

In the **Czech Republic** schools are directly funded by municipalities, but salaries are entirely secured by the Ministry and transferred to local budgets as a targeted grant. The grant formula comprises the number of students divided by the standard student/teacher ratio and multiplied by the average national wage for teachers at the respective level of qualifications. The Ministry also provides a per student grant for other expenses in schools, covering roughly 20% of the actual non-wage costs. The remaining part is funded from municipal budgets (drawing mostly on local shares in income tax and on property tax). Regions and municipalities can provide schools with extra funds depending on their goals and financial capacity. School principals negotiate their budgets with municipal officers.

Formally, school principals have some autonomy in determining the actual salaries of the teachers he/she employs, but they have very limited resources to exercise this power. Schools are eligible for extra grants for students with special needs and socio-economically disadvantaged students. Private schools get up to 100% of their recurring costs reimbursed (90% in the case of secondary schools). In the **Slovak Republic**, between 1996 and 2002, all operating and investment costs were covered by the State Budget (Ministry of Education). The funds for primary schools were distributed by the district offices and those for secondary schools by regional offices of state sectorial administration. As a result of the decentralization reforms in 2003, all primary and secondary schools, both public and private, are now financed by the state according to the number of students attending a given school each year. They also receive additional funding from the municipalities and regions. The transfer from the central budget includes a wage part and an operational part. Public schools may also receive special-purpose grants and subsidies for reconstruction and modernisation from the central budget. School budgets are developed by school principals and controlled by local authorities (municipalities and self-governing regions) and then supervised by the State School Inspection, representing central government.

In **Hungary** after 1989, local and central budgets became separate, and municipalities had to take partial responsibility for funding schools. The financial resources were distributed among schools via their maintaining bodies (local governments or private actors), who were responsible for setting school budgets. The amount of state funding was determined by a formula taking into account the number of students in a given grade, educational program and school type. The formula did not differentiate between rural and urban pupils. In the

mid-1990s, centrally distributed grants covered around 50% of school expenditure, and the remaining 50% had to be provided by maintaining bodies from their own revenues. The algorithm to divide the state funds treated public and non-state owned schools equally. The education law amendment, introduced in 1996, guaranteed state funding for not less than 80% of actual local expenditure on schools. After the reforms in 2012, the Klebelsberg Institution Maintenance Center became responsible for all teachers' salaries and most of the infrastructural expenses of schools; therefore, the system has been recentralized also in terms of finances.

In Poland the decentralisation of primary schooling (in 1996) made it necessary to change the funding model. The duty was too costly for municipalities to finance from their 'own revenues', including local taxes and fees, real estate rent and sale, and local government shares in personal income tax (PIT) as well as corporate income tax (CIT). Although between 1996 and 2010 municipalities' share in PIT rose from 15% to 36.94%, still, due to disproportion in the tax base, most of them would be unable to cover the costs of education provision (Herbst, Herczyński et al. 2009). From 1996, a two-stage funding system for education provision was introduced, within which funds are transferred to local governments by the Ministry of Finance (based on a formula worked out by the Ministry of Education), and local governments are responsible for the direct financing of schools. However, in order to strengthen the role of local governments in the funding chain, it was decided that the transfer of funds from the central budget to local budget should be in the form of a so-called 'educational part of the general subvention'. As the general income of the local government budget, this instrument (despite its name) is not earmarked for any definite service, and local authorities have full autonomy regarding how it is distributed between schools, services, or even transferred outside the education system. The formula determining the amount transferred from the central budget to local governments relies on the "per student rule", but it includes different weights for different categories of students and different tiers of education. There is also a component reflecting teachers' formal qualifications, as qualifications have influence on teachers' wages, being the most important cost of education provision. After 1999, further decentralisation of education (including the transfer of responsibility for secondary education to local authorities at the county level) necessitated reform of the algorithm used to distribute the educational part of the general subvention between local governments. The new algorithm had to encompass the funding of three levels of education⁶ - primary, middle school and upper-secondary school as well as a range of additional services (so-called out-of-school). The educational part of the general subvention (called in short 'education subvention) is not sufficient to reimburse all expenditures made by local governments on schools and other educational facilities. As estimated by Herbst, Herczyński, and Levitas (2009), the subvention covers approximately 70% of costs, while the remaining 30% come from the own revenues of municipalities. Local governments (and particularly municipalities) in Poland have different sources of own revenues, the most important and stable of which is the share in personal and corporate income tax collected on their territories. Every municipality in Poland receives 39.34% of PIT and 6.71% of CIT collected from its residents and companies registered on its territory.

4.4. Means of over quality control

In a decentralized education system, the outcomes may depend on the adequacy of decisions taken by the local authorities responsible for education provision, as well as on the quality of management at school level. The political changes in CEE countries over the 1990s were very dynamic, and this raised doubts as to whether local leaders and school principals were sufficiently prepared for the new tasks. The question of how much control (and

⁶ Pre-school is still not included in the educational part of the general subvention and up until now has been financed from other local government income. However, the Ministry of Education is currently considering including funding for the education of four and five-year-olds in the subvention.

over which functions of the education system) should be preserved by the agencies at the central level is one of the most fundamental issues in the public (and academic) debate on education management. It is thus worth examining how the school accountability and supervision mechanisms function in the four countries.

Curriculum and national standards of education provision

In the **Czech Republic**, the national curriculum was abandoned in 2006 and replaced with general guidelines. They are developed by MEYS but schools have vast autonomy in designing their own instruction. The guidelines define the objectives of basic education, the key competencies to be acquired, and the general content of subjects and learning outcomes. They also provide a framework timetable and the minimum total number of hours for the educational areas per week. The Ministry approves curricula because of these very general standards, and school principals are still allowed to adjust them according to local needs, altering timetables (up to 10%) and teaching programmes (up to 30%). Czech teachers are free to choose the teaching methods, handbooks and educational aids they use. The Czech Republic has also recently adopted a *National Qualifications System* linked to the European Qualification Framework. In 2011, the National Institute of Education was established, with a goal to provide evidence on policy and practice in education, formulate the framework for education programs and assist schools in the development of teaching programmes.

In **Slovakia**, the Ministry and its agencies were fully responsible for designing the curriculum until 2007. There were at least three alternative national curricula designed by the state government, and schools were allowed to choose between them. The Ministry issued a list of approved teaching methods and textbooks, from which teachers could select. Teachers could modify up to 30% of the adopted curriculum, which was aimed at supporting their creativity and adjusting the content to the needs and interests of students. The reform in 2008 introduced a two-level model of curriculum, comprising the national component (developed by the National Institute for Education and the National Institute of Vocational Education) and a part developed by individual schools (Mentel and Pokorny 2012). Based on the national curriculum, schools can therefore develop their own programmes. The reform brought a radical change with respect to both the general shape of the curriculum, and the distribution of responsibilities between the state and schools. In terms of curriculum content (in the state part), the requirements referring to factual knowledge were replaced with definitions of key competencies. The traditional teaching subjects were integrated into more general “areas of education”. In 1989 the curriculum in **Hungary** was centralized with strict national standards, but following the Education Act of 1985, schools were already allowed to apply ‘particular curricular solutions’ if authorized. These school-level modifications gained popularity in the early 1990s. The idea was to allow more autonomy at school level, but also to assure the necessary level of coherence. Major changes in the curriculum were adopted in 1993, when a two-level regulation system was implemented, replacing the former detailed curricular programs. The *National Core Curriculum* (NCC), issued in 1995, was designed by progressive educators strongly influenced by international trends. Great attention was paid to cross-curricular areas: communication, health education, information and telecommunication technology, technical-practical skills, environmental protection etc. The NCC defined ten broad areas of knowledge (like ‘Man and Society’), substituting the traditional division of school subjects. The required achievements were defined by outcomes at the end of grades 4, 6, 8 and 10. These arrangements left a lot of space for schools to develop various local curricular approaches. Only the lower and upper limits of hours devoted to specific knowledge areas were defined on the national level. In order to support the decentralized mechanism, nationally accredited experts evaluated the curricula developed on the school-level. The local curricula also had to be accepted by municipalities governing particular schools. By 1998, this reform was completed and a large share of responsibility for the curriculum was effectively shifted to the level of municipalities and schools. Yet, after 14 years of decentralization, this process was slightly moderated. The 1998 reform gave back to the Minister some limited control over quality assurance, establishing the office and regional units of OKEV – the National Center for Evaluation and Examination of Public

Education, which was set up to serve as a direct administration tool for evaluation, supervision and quality assurance. Later, in 2000, following the controversies around the NCC, the *Frame Curricula* (FC) were created to supplement the NCC. They reintroduced specific subjects within the ten broad knowledge areas along with annual timetables. The NCC still existed, but the FC took more of a regulatory burden. The general structure of a two-level system with schools having broad curricular autonomy was maintained. Schools that offered high quality programs different from the FC could keep them, if they obtained special accreditation.

Until 2012, the Hungarian Ministry of Education managed the National Textbook Register, including all textbooks from which teachers could choose. However, since the changes in 2012, the government approves only one textbook per grade/subject. The autonomy of teachers has been substantially reduced and currently (in 2014) teachers can only decide on roughly 10% of the curriculum, the rest being regulated by the central government. The Hungarian experience until 2012 can thus be characterized as far-reaching decentralization of the curriculum, encouraging much diversified approaches within a very general framework. However, in contrast to the other countries discussed, Hungary started early on to reverse some of the previous decisions, which proved dysfunctional, and started reintroducing a high degree of central control over the curriculum.

In **Poland**, both public and non-public schools are obliged to follow the Core Curriculum developed by the Ministry of Education (MEN). Until 2009/10, the curriculum precisely specified the content of teaching. After the reform in primary and lower secondary schools and since 2012/2013 in high schools, the curriculum defines learning outcomes, basic content knowledge and the skills students should acquire. Thus, teaching content has become less specifically defined. The common core does not define the sequence of teaching, nor the time necessary for teaching each fragment of the curriculum; nor does it specify the hierarchy of particular topics, giving more autonomy to the teachers. However, besides the core curriculum, schools are obliged to follow the Frame Teaching Programme set by MEN, which specify the minimum required number of teaching hours by subject for each education stage (grades 1-3, 4-6, 7-9, and 10-12).

Supervision

Evaluation and regulatory mechanisms were introduced in the **Czech Republic** after 1995, when the government established the School Inspectorate. This is a review body with offices in all 86 districts, responsible for monitoring schools and school facilities in terms of adherence to safety rules, financial accounting, and fulfilment of mandatory reporting duties. Inspections do not cover the quality of instruction and do not use any student testing tools. The only means of obtaining information on teaching standards is arranging *ex ante* visits to schools by observers from the Inspectorate. Schools are inspected on average every 3-4 years. The Inspectorate cooperates closely with the Ministry of Education, Youth and Science. Inspections are coupled with evaluations conducted by local authorities, yet the latter, especially smaller authorities, have neither the resources nor expertise to properly exercise this task. The results of inspections are published on a regular basis. Schools are expected to conduct self-evaluations but there is no one clear scheme for doing so. The regions, municipalities and schools have autonomy to implement evaluations and assessments.

In the **Slovak Republic** evaluation and assessment takes place at all levels of the system. However, the current system is not coherent and the activities performed by numerous stakeholders are not mutually compatible (Mentel and Pokorný 2012, 6; 22). Slovakia inherited from Czechoslovakia the State School Inspection in charge of quality of pedagogy. School Inspection evaluated the quality of teaching through class observation. In addition, the Departments of Education of Regional and District School Offices could assess the quality of the education process, although they did not use any common framework or rules in performing evaluations. The system was highly centralized but clear evaluation standards were missing (Berčík et al. 2002, 282). The issue of school evaluation

became more regulated following the 2008 School Act, defining the principles and aims of education and creating conditions for the inspection and evaluation of quality within the educational system. Since then, the evaluations are performed by the agencies of the Ministry (the State School Inspection and National Institute for Certified Educational Measurement -NÚCEM), school managing bodies and schools themselves. The State School Inspection is responsible for external school evaluation and it formally covers such issues as pedagogical quality, school management facilities and general maintenance. However, in practice the evaluation is most often focused on whether the school fulfils all its legal obligations, and has little to do with educational quality.

Overall, it seems that in Slovakia the autonomy of schools and maintaining bodies prevailed over the countrywide norms and standards. The existing control mechanisms are used mainly for statistical purposes, and have little impact on the way schools function in reality. **Hungary** has adopted an internal evaluation and quality control model, which prevails over the external model. The Ministry of Education maintains registers of professionals (examiners and experts) who are allowed to conduct evaluations of schools and examinations of students. Currently there are three types of control: pedagogical/professional (conducted by experts/inspectors appointed by the state authorities, legal (by the national educational authorities), and authority supervision (by a general purpose regional government authority). Teachers, school principals and schools are subject to supervision. The system of evaluating teachers is currently being designed with the support of the EU funds. Its main assumptions are that it is going to be an external, regular and compulsory system, that it will combine formative and summative elements, and that it will have an impact on salaries. The system of evaluating school principals is strongly linked (mainly, but not exclusively, through the research tools used) both with teacher evaluations and school evaluations, and includes a self-assessment component too.

Poland changed its system of schools supervision in 2009. The reform aimed at moving from the then purely bureaucratic, legally centred, rigid control exercised by school inspectorates (government territorial agencies) to supervision based on evaluation of teaching, providing schools with useful feedback on the quality of its work. The old system of supervision was exercised by government agencies and was not equipped with any efficient tools for assessing teaching standards in schools. The supervisors visiting schools focused on checking the adequacy of school documents with legal requirements and the fulfilment of reporting obligations. The reform initially aimed at closing school inspectorates and replacing them with new institutions, yet ultimately the new system is based on the old institutional infrastructure. In the new system, schools are obliged to conduct, internal evaluations on a regular basis, and work with the external evaluators, who come to schools for 2-3 day visits to conduct a broad qualitative study. The external evaluations include interviews with all the stakeholders and collecting a large quantity of data about school work. The reports from evaluations are public.

The major challenges for the new system are, firstly, the competencies of evaluators, who at the same time should be researchers and tutors, and from whom school principals would like to get feedback and learn. Secondly, school principals who are accustomed to the old type of supervision are often not ready to work cooperatively with an external evaluator. For these reasons, the implementation of new supervision is still a long process, and its success or failure will depend on the quality of evaluations and on the attitudes of school principals. The new system maintains the purely legal control of school functioning, which is exercised by inspectors representing the same local school inspectorates that conduct evaluations. The development and implementation of the new system was financed from EU funds.

Standardized tests

In the **Czech Republic** there are no central examinations, no nation-wide system of testing, nor other standardized tools monitoring student achievements. Therefore municipalities, which are in charge of quality of instruction, do

not have easy access to sources of information about teaching in their schools. The Czech government is considering the possibility of introducing a full-cohort national standardised test in grades 5 and 9 (in Czech language, a foreign language and mathematics), but the term for it has not been fixed yet. In the absence of standardized testing at the end of lower secondary school, acceptance to upper secondary school (particularly to the general secondary path) depends on the completion of compulsory education and passing the entrance examination set by a chosen school. The upper secondary track, with the exception of schools offering only basic vocational training, ends with the final assessment of students (Maturita examination). However, its content varies in different schools, so universities do not rely on its results and organise their own entrance exams.

In the **Slovak Republic**, there are two basic types of student assessment: an internal assessment performed by teachers, which is the schools' responsibility, and an external assessment exercised through standardized tests developed by NÚCEM. Until 2003, certificates at the end of primary school were awarded based on continuous assessment performed by teachers, with no final examinations. Students were admitted to the secondary full-time schools if they completed entrance examinations. Secondary school ended with a compulsory final examination (*matura*), which had to be passed in order to access a higher education institution. From 2003, Slovakia began experimenting with national testing of pupils at the end of lower secondary school. The test was fully implemented from 2009 onwards. The country organises only one national test during compulsory education (grade 9), testing student performance in two main subjects – the language of instruction and mathematics (Eurydice 2009). The aim of the test is to obtain information about students' performance at the end of compulsory education in order to provide schools with feedback on student performance. In turn, the Maturity examination, concluding the upper secondary stage of education, consists of an internal and external part (the latter takes form of a written test created and evaluated by NÚCEM). The external part of the Maturity examination measures student performance with respect to the language of instruction (Slovak, Hungarian or Ukrainian), mathematics and a foreign language. External testing in both instances is of moderate stake, but achieving a very good result may allow enrolment in the next educational tier without entry examinations. NÚCEM is responsible for conducting both 9th grade testing and the external part of maturity examinations. Slovakia does not make school test results public. The government also intends to introduce standardized tests at the end of primary education.

Hungary has quite a long tradition of testing as a tool for monitoring, evaluation and quality control in public education. Testing had purely diagnostic function and was run on representative samples of students. From as early as 1986, after the adoption of the Education Act, Hungary started conducting experiments in testing at the end of ISCED 1 and 2 levels. In the first decade of 2000, the country started introducing a broader set of national tests with the objective of monitoring and evaluating schools. In 2001, a new test was introduced in lower secondary schools. The evolution of testing in Hungary was strongly influenced by international surveys, such as PISA, PIRLS and TIMSS. The results fostered discussion about the curriculum and teaching methods, and strengthened concern about the quality of education. This debate led Hungary to introduce new types of national tests aimed at monitoring individual student skills and knowledge on a standardized and regular basis. Currently Hungary organises four compulsory national tests in grades 4, 6 and 8 and 12, encompassing maths and literacy. The system gives all schools feedback concerning their performance and the individual student identifier allows parents to access information about their children. Optional in 2001, this new evaluation system became compulsory for all schools in 2006. From 2008, all local authorities (maintaining bodies) had to use it when monitoring schools in their charge. However, in practice this tool was applied very rarely. Currently, the Klebelsberg Institution Maintenance Center and its district offices could use this tool but it remains to be seen what practice will be established with regard to competence measurement.

Hungary and Poland are two of the small group of EU countries (including Denmark, Iceland and Sweden) publishing the results of tests for each school.

Poland introduced standardized, externally evaluated tests after grades 6 and 9 in 2002 and a standardized maturity examination after grade 12 in 2005. The examination at the end of primary school (6th grade) serves only as an evaluation of student performance and does not determine their future academic career. In particular, it should not be used by lower secondary schools to determine a candidate's eligibility. In practice however, student sorting at the beginning of lower secondary school has recently become a serious issue in big cities, where parents can choose between different schools. In turn, the 9th grade tests are definitely high stake, as they determine which upper secondary school will be accessible for a given student. Upper secondary schools accept candidates based on their performance in the 9th grade test, although they are allowed to organize an additional examination in some cases (e.g. for bilingual classes). Following the introduction (in 2005) of a standardized maturity examination in upper secondary schools, most higher education institutions abolished entrance examinations and rely on the test results for the determining student admissions. However, some of them still perform additional entrance interviews.

4.5. Teachers as subjects of educational policy

In the **Czech Republic**, teachers are employed by school principals. They are hired on a competitive basis, for a 6-year term. They can be fired by the founding legal body of the school (the municipality in the case of primary schools or the regional government in the case of upper-secondary schools). There are many ways to get certification for teaching, but some teacher training programs are of low quality and furthermore, the whole profession is subject to negative selection, with the most talented graduates avoiding this career path. Pre-service teacher training (for primary - generalists and lower secondary level - specialists) takes 4 or 5 years (usually in a faculty of education) and must finish with a university qualification at Masters level. It provides a very short practicum. Institutions providing training have the autonomy to create their own study programs, yet accreditation by the Ministry is required. Graduates of subject specific MA studies can obtain teaching qualifications in consecutive courses offered by HEI. In-service training is organised by higher education institutions, institutions for in-service training of educational staff or other institutions that can be granted accreditation by the MEYS. A self-study option is also available for teachers. Most of the programs are still provided by the National Institute for Further Education (with central and 13 regional offices). Teachers are not obliged to undergo further appraisal, this is left to the discretion of school principals. School internal regulations provide criteria for teacher appraisal. In this respect, the Czech system is one of the most decentralized among OECD countries. Teachers' prescribed teaching load is 22 hours per week. Salaries in this group have increased since 2000, yet they remain low compared to the OECD average and may negatively affect the attractiveness of the profession. Wage grids set by the Ministry are mainly determined by years of experience. School principals have the right to grant teachers special bonuses according to their merit, but taking into account that they dispose of very limited financial resources, they have little room for manoeuvre here. In 2011, teachers' salaries were 54% of the full-time, full-year average earnings for 25-64 year-olds with tertiary education (OECD 2013).

In **Slovakia** pre-service teacher training is provided by Faculties of Education at HEI, within a four-year programme for first stage primary school and a five-year programme for second stage primary school. Secondary school teachers are trained in five-year, subject-specific programs in HEI, leading to a final state examination. The school principal is responsible for teacher appraisal (an internal one), but the actual possibilities of rewarding the best teachers are in practice very limited. The legislation does not determine the forms and methods of teacher appraisal; therefore, each school chooses the appraisal methods and criteria independently. However, in contrast to the Czech Republic and Hungary, the Slovak government provides national regulations on the promotion of teachers, which link it with personal development plans. The career system is based on the further education of teachers (external appraisal) and it establishes successive qualification levels (beginner teacher, independent

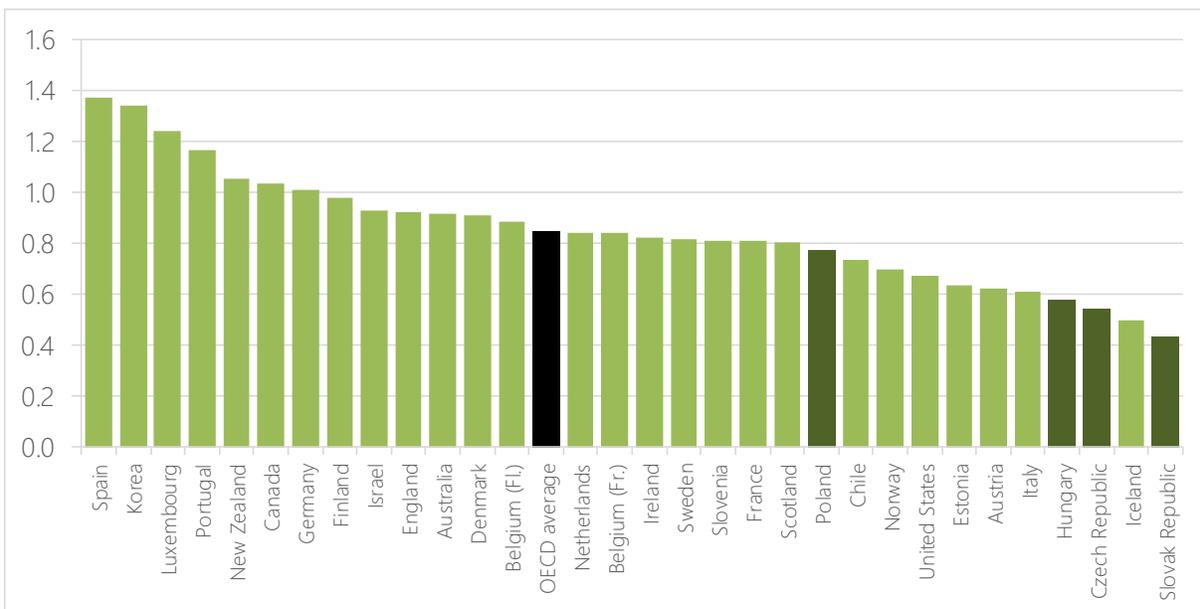
teacher, teacher with 1st and 2nd certification level). HEI and other teacher education institutions provide certificates for subsequent levels. Salaries are determined by grids prepared by the Ministry. They may be supplemented with personal bonuses. However, Slovakia faces the problem of negative selection to the teaching profession, mainly due to low salaries.

In **Hungary**, the system of teachers' promotion was reformed firstly in 1996, when obligatory in-service training every 7 years was introduced. The teacher appraisal model became strongly decentralized, with school regulations determining the criteria for appraisal. A new teacher career development model was established in 2013. Teachers' careers are now rated according to a 5-stage model: Trainee (0-2/4 years), Teacher I (3-8 years), Teacher II (9-14 years), Master teacher (over 14 years) and Researcher teacher. Teachers have to take a qualifier exam in order to be upgraded in the model. Teachers' wages are closely connected to the formal stage of their career. Although **Polish** teachers are not considered as civil servants, they are distinct from other employees. Since 1982, the legal basis for teacher employment is provided by the Teacher's Charter Act. This sets the minimum qualification requirements for teachers (a Master's degree supplemented with pedagogical training), the statutory working and teaching time, the wage components and minimum wage at each of the four stages of a professional career. It also defines the procedure for professional promotion. Very importantly, the Teacher's Charter regulates the conditions under which a teacher may be dismissed, and provides some social benefits for teachers. Overall, it provides teachers with much more protection than the standard employment regulations offer to representatives of different professions. The Teacher's Charter is heavily criticized by local governments, who are responsible for school management including teachers' hiring and dismissal. The local authorities argue that teacher employment is overregulated and makes effective management of the school network impossible. They also raise the issue of teachers' working time. The Teacher's Charter sets a weekly, statutory number of teaching hours equal to 18 (for most teachers in primary and secondary education), which is one of the lowest values among OECD countries. According to local governments, this makes the costs of schooling in Poland unnecessarily high. In response to the critique, central government experts argue that, given the scope of decentralization in Polish education, the regulations embedded in the Teacher's Charter are necessary to ensure common standards and quality of schooling in different localities.

One of the major concerns regarding teacher status in Poland over the 1990s was that low salaries may cause negative selection to the teaching profession, leading to cumulative, adverse effects on the quality of education. At the time, the average teacher's wage was below the national average wage calculated for all professions. In 2000, the government adopted a program of teacher wage increases. Between 2000 and 2011 the average teacher's wage in Poland increased by 63% (in constant prices).

According to recent data, teachers' wages in Poland (compared to another three discussed countries) are more attractive relative to the expected salary for workers with tertiary education on the domestic labour market. The average Polish teacher earns 77% of the expected wage, while the Czech teacher – only 54%, and the Slovak teacher – 44% (see figure 8).

Figure 8. Ratio of teacher salaries to average earnings for full-time, full-year workers with tertiary education aged 25 to 64



Source: OECD Education at a Glance 2013 and MEN (for Poland)

Another teacher related regulation differentiating the four countries refers to the net teaching time during the school year. According to OECD data, Czech and Slovak teachers are much more loaded with direct teaching than their colleagues in Hungary and Poland. This applies particularly to teachers in Czech and Slovak primary schools, who perform 40% more teaching hours than their Hungarian counterparts and 6% more than it is the case in the average OECD country. Teaching time is very low in Poland, particularly when comparing regulations concerning ISCED 2 and ISCED 3 education stages (lower and upper secondary schools). The typical workload of a teacher in a Polish lower secondary school is 83% of that in a Slovak school, and 77% of the OECD average. Such a low teaching time is a consequence of the Teacher’s Charter, which sets a statutory weekly teaching time for most teachers employed in public schools in Poland equal to 18 hours, which is one of the lowest values in Europe.

Table 6. Teachers’ working time (net teaching) in public institutions over the school year

	Primary education	Lower secondary education	Upper secondary education, general programmes
Czech Republic	840	630	602
Hungary	604	604	604
Poland	618	547	544
Slovak Republic	846	656	627
OECD average	790	709	664

5. Summary

Our intention was to highlight the institutional differences in the education systems of the four Central European countries: the Czech Republic, Hungary, Poland and Slovakia in order to better understand the differences in learning outcomes as measured by international assessment programmes, such as PISA. The four countries differ with respect to achievements in PISA, with Poland outperforming the other three countries in terms of recent scores in all subjects, the change between 2000 and 2012, as well as the between-school variation.

We applied a qualitative, comparative approach based on a Most Similar Systems Design. We believe that our work provides a valuable contribution to the debate on the effectiveness of education systems and that it is complementary to quantitative analyses. Econometric studies may better identify and isolate the causal relationships, but frequently they lead to the comparison of very different systems without controlling for the differences in institutional arrangements. In this paper we have provided an in-depth comparative analysis of four education systems, which shared many characteristics at the beginning of the 1990s, but chose different development paths in subsequent years.

Some of the findings of our analysis are summarized in Table 7. Most importantly:

- All 4 countries have profoundly decentralized their education systems since 1990. The Czech Republic, Hungary and Poland introduced their major reforms in the mid-1990s, while in Slovakia decentralization was delayed and limited in scope. In Poland and Hungary, most competencies were transferred to local governments, while in the Czech Republic schools were given substantial autonomy. Poland preserved most quality-related competencies at the central level.
- In all countries, an important role in the system is performed by local governments. However, in the Czech Rep., Slovakia and Hungary the local administration is very fragmented. Polish municipalities have much more administrative and financial capacity to manage schools as compared to the other three countries.
- The education systems of the four countries differ with respect to student tracking. While in the Czech Republic, Slovakia and Hungary early tracking is allowed (after grade 4 or 5), all Polish students are obliged to graduate from lower secondary school (grade 9) before they are tracked into an academic or vocational path.
- Slovakia, Hungary, and Poland (but not the Czech Republic) perform standardized tests at school. Slovakia administers only one test (grade 9), while Hungary and Poland measure student skills several times during the school career. In all three countries, the test results are meant to be used as a diagnostic tool for schools, but only in Poland and Hungary they may also be used for school accountability. In contrast to Slovakia, in Hungary and Poland the average outcomes of every school are made available, in Poland publicly, in Hungary for experts. Of all countries, Poland is the only one in which standardized tests have effectively replaced the entrance examinations to the next education tier.
- The teaching profession is subject to regulation in all countries. Poland controls teacher training, regulates salaries, precisely defines the promotion scheme and sets statutory teaching time). The Czech Republic, Slovakia and Hungary seem to have less control over teachers' professional promotion. Teachers' wages (relative to other professions requiring a university degree) are more attractive in Poland than in the other three countries. In turn, statutory teaching time in Poland (18 hours per week) is the lowest among all the countries considered and one of the lowest among OECD members.
- The core curricula for schools are defined by the central governments of the four countries, but the systems differ in the level of autonomy assigned to schools. The core curriculum in the Czech Republic and Hungary

is very general and schools are allowed to implement very different teaching programs. However, in Hungary the curriculum started to be recentralized in 2011. Poland and Slovakia have retained most control over the school curriculum over the whole study period.

- All four countries are still developing solutions in terms of school evaluation, being dissatisfied with the existing methods. It seems that none of the systems has yet equipped themselves with a complete/comprehensive school evaluation framework. This aspect of modernizing the system is being financed by the EU.

Although it is impossible, based on the analysed material, to draw definite conclusions on the causal effects of particular institutional solutions on the outcomes of education, it turns out that the differences in the arrangements are substantial. Taking into account that 30 years ago the four systems were organized in a very similar manner, it proves that decision makers have taken different paths while making reforms. The common characteristic of the transformation was the decentralizing effort, which has recently been reversed in the case of Hungary. Similarly, in the Czech Republic criticisms were raised, that the decentralization of the system went too far in a very short period of time, and was not properly designed. The empowerment of school principals and local authorities was not accompanied with monitoring and feedback arrangements, which eventually caused teachers', principals' and schools' accountability for educational performance to deteriorate. School principals were overburdened by administrative duties at the expense of management over of quality of instruction.

Poland seems to have the most balanced division of competencies between various levels of educational governance, combining the managerial capabilities of central agencies, local governments and school principals. Delayed student tracking (by introducing lower secondary schools) and the implementation of standardized examinations at three different stages of the student career has kept the Polish education system more uniform and based on common standards, even though most managerial responsibilities have been transferred to the local level. Finally, compared to the other three countries, the Polish government addressed the problem of the unattractiveness of the teaching profession (common to all four systems) relatively early on. Although systematically increasing teachers' wages and keeping statutory teaching time at a low level probably had little impact on PISA outcomes in the period 2000-2012, it may yield some positive effects in the near future.

Table 7. Summary of findings

	Czech Republic	Slovak Republic	Hungary	Poland
Decentralization	Profound decentralization, mostly to school level. Important role of municipalities, which are fragmented and lack know-how.	Delayed decentralization, with major reforms in 2003. Most managerial competencies transferred to local and school level. Central government preserved control over curriculum	Following 1990 education was deeply decentralized, including hiring principals and teachers, school maintenance and control over curriculum. After 2011, the government initiated recentralization.	Crucial role of local governments, fully responsible for education provision. Important competencies regarding quality of education preserved at central level.
Tracking	Early tracking possible. Students may flow to elite schools after grade 5. About 13% of the cohort is already transferred to such schools at the age of 11.	Early tracking possible. Students may flow to elite schools after grade 4. About 8% flow to such schools at the age of 10-12.	Early tracking possible. Students may flow to elite schools after grade 4. Profound disparities in student performance among the tracks.	No tracking allowed until graduation from lower secondary school (9 th grade). Low variation in achievement between schools.
Control over curriculum	Framework Educational Programs for different levels and types of education are developed by the Ministry, but they are very general and in practice, schools have substantial autonomy in designing their own education programs. The Framework defines the objectives of basic education, the key competencies to be acquired, the general content of subjects and learning outcomes.	Prior to 2007 schools chose between alternative curricula prepared by the central government. Recently the local curricula are built of two components – the core component, set by the central agency, and the local component, developed by the school.	In the late 1990s, a large share of responsibility for the curriculum was effectively placed with municipalities. In 2000, following the controversies around this programmatic autonomy, the <i>Frame Curricula</i> (FC) were supplemented to the NCC. They reintroduced specific subjects within the ten broad knowledge areas along with annual timetables. After 2011, the curriculum was recentralized.	Detailed core curriculum and minimum teaching time per subject set by the Ministry of Education. Schools are free to choose their methodological approaches, but they must follow the core curriculum and frame timetable.

Czech Republic

Slovak Republic

Hungary

Poland

Standardized tests

In the Czech Republic there are no standardized tests. The maturity examination at upper secondary level is administered and graded within school.

Slovakia organises only one national test during compulsory education (grade 9), testing only the two main subjects – the language of instruction and mathematics. The test results for particular schools are not published.

As from 2006, there are four compulsory national tests in grades 4, 6, 8 and 12. This compulsory measurement is not used by the maintaining bodies for the accountability purposes; however, schools regularly receive detailed feedback about their performance.

Standardized tests at the end of 6th and 9th grade introduced in 2002. Standardized examinations after 12th grade (maturity test) - since 2005. The 9th and 13th grade examination are high stake, as their outcomes determine admission to schools of a higher tier (high school and university respectively)

Teachers' wages and teaching time

Wages unattractive relative to other professional groups. High number of net teaching hours. Decentralized teacher promotion scheme

Very unattractive wage and high number of net teaching hours. Decentralized teacher promotion scheme.

Low teaching time. Low average wage – relative both to other OECD countries and to other professions requiring a university degree in Hungary. Teacher promotion mechanism and salaries are fully centralized.

Very low statutory teaching time. Average teacher wage low by OECD standards, but more attractive than in other countries in the region. Substantial rises over last 15 years. Competencies regarding teacher promotion divided between schools, local government, and central gov.

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