

Inequalities of Opportunities in Basic Education: Were they Affected by Latin America's Economic Boom?

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Abstract. In the context of economic growth and recovering socio-economic conditions, many Latin American countries have implemented deep educational reforms since the beginning of the century. This paper aims to analyse whether these changes have promoted equality of educational opportunities in the region. Both the *access* and the *knowledge/skills* dimensions are evaluated for

six important countries, deepening the analysis for Argentina, Brazil and Colombia, in order to better understand the trends observed. Results point to reasonable progress in access, but reflect an unsatisfactory evolution of the level and distribution of knowledge and skills (as reflected by PISA test scores).

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1. INTRODUCTION

During the previous decade, many Latin American countries have experienced a rare moment of reduction of income inequality and poverty levels, partly due to economic growth boosted by the rise of global prices of commodities and favourable exchange rates, partly due to policy choices such as deliberate rises of minimum wages or the implementation and expansion of conditional cash transfer schemes. But it is not clear what the actual impact of these important economic phenomena and policies has been on structural sources of inequality such as education.

Pertaining to a liberal-egalitarian stream of theories of justice, the so-called ‘equality of opportunity approach’¹ considers that the less a given outcome correlates with individual circumstances –that is, with features beyond individual control, such as parental characteristics or skin colour– the closer we are from a situation of equal opportunities. If we take *equality of educational opportunities* (EEOp) as a reasonable normative goal, can we say Latin American countries have moved closer to achieving it over the last few years?

In this study, we first describe and analyse the evolution of EEOp in Latin America since the beginning of the century. More specifically, we investigate what happened in terms of: (i) *access* to different levels of basic education (Section 2), and (ii) *knowledge and skills* acquired by students, as reflected by test scores (Section 3). Data regarding access has been gathered from international reports and national household surveys. Test scores and their covariates have been taken from different waves of OECD’s (Organisation for Economic Co-operation and Development) PISA (Programme for International Student Assessment) exams and reports. Regarding both access and achievement, we focus on six Latin-American countries which are important for a number of reasons (e.g., per capita income, development level, population size) and which have participated in most of PISA exams, namely: Argentina, Brazil, Chile, Colombia, Mexico, and Uruguay. Occasionally, we compare them with Spain and Portugal, developed countries which notwithstanding share many traits with Latin America.

The descriptive sections of the paper reveal substantial, albeit insufficient, advances in access, and only very modest, in some cases inexistent, progresses regarding knowledge and skills. To understand these trends we deepen the analysis of three important and contrasted countries: Argentina (Section 4), Brazil (Section 5), and Colombia (Section 6). Taken together, they host around half the population of Latin America and produce more than half of its riches. While socio-economic indicators from countries like Uruguay and Chile are similar to Argentina, Mexico’s resemble those of Brazil or Colombia. For example, taking the Human Development Index as a rough synthetic measure of development level, we can see that in 2012 Argentina with 0.811 (45th highest in the world), Chile (0.819; 40th) and Uruguay (0.792; 51st) are similar and stand clearly above Brazil (0.730; 85th), Colombia (0.719; 91st) or Mexico (0.775; 61st). Among the contrasts, we could mention the political evolution: while centre-left coalitions governed Brazil and Argentina for most of the past decade, in Colombia the centre-right has been in power.

In order to try and explain these countries’ EEOp trajectories along the period 2000-2012, we focus on the availability and distribution of essential educational inputs, as well as the policies

¹ J. Roemer, *Equality of Opportunity* (Cambridge, MA: Harvard University Press, 1998).

implemented. We also speculate on the possible links between economic phenomena and policies mentioned in the first paragraph, and the trajectory of educational outcomes.

We end up in Section 7 summarising our cross-country analysis, emphasising common patterns and differences between the countries, as well as the main challenges they face in the following years.

2. EQUALITY OF OPPORTUNITY IN ACCESS (2000-2012): CONSIDERABLE, BUT INSUFFICIENT, IMPROVEMENT

In 2008, the Latin American Ministers of Education agreed to support the Education Goals for 2021, establishing the achievement of educational equality as a priority. This included guaranteeing universal access and completion of the primary and lower secondary school levels, as well as increasing access and graduation at the upper secondary level².

Although this agreement involved the setting of common goals and cooperative actions, each country was free to adapt them to their particular socio-economic and educational reality. This flexibility acknowledged the different obstacles confronted by each system when striving for educational equality. In some cases, inequality is stronger regarding access to the primary or secondary school levels. In others, it translates into different trajectories in terms of late entry, repetition, and dropout. Finally, skills and knowledge may be unequally distributed.

In this section, a series of educational statistics are presented, allowing us to analyse how far away six Latin American countries stood from the goal of equality of opportunity in terms of access and completion in the year 2000, and how much closer they were by the year 2012³.

During this period, the region has made some progress towards increasing educational inclusion, interpreted as attendance to a formal institution during compulsory school age (Table 1). Coverage at the primary and lower-secondary school levels has been almost universal since the beginning of the century, and growth in overall attendance rates has recently declined. This has led to a generalised concern over the possibility of ‘the end of educational expansion’⁴. However, children now enter the system earlier, and stay in school longer, since attendance rates at the pre-primary and upper-secondary school age have grown soundly during the period. Most of the five-year-old population (over 85 per cent) currently attends school in the six countries of interest. As for those in the oldest age group, progress in enrolment has been modest in Argentina, Brazil and Uruguay, but important in Chile, Colombia, and Mexico. Still, relevant gaps remain between these countries: while Chile and Argentina present rates close to 90 per cent, for example, Mexico lags behind with 66 per cent. Also, although inequalities within each country have been slightly reduced, some differences by income and geographical location are still evident, especially in Uruguay, Mexico, and Chile.

² OEI, ‘Metas educativas 2021. La educación que queremos para la generación de los bicentenarios’, *Documento Final* (Madrid: OEI, 2010).

³ It should be noted that the information available for Argentina corresponds only to urban areas, which may lead to an overestimation of quality and equality levels.

⁴ SITEAL, ‘Metas educativas 2021: desafíos y oportunidades’, *Informe sobre tendencias sociales y educativas en América Latina* (SITEAL: IIPÉ-UNESCO/OEI, 2010).

Table 1. School Attendance Rates

	Total ^a	Equivalised income quintiles					Area		Age groups				
		1	2	3	4	5	Rural	Urban	5	6-8	9-11	12-14	15-17
Argentina^b													
c2000	74.2	75.4	72.7	72.6	73.3	78.1	-	74.2	73.7	99.1	99.2	97.7	85.2
c2012	75.8	76.7	75.1	74.4	74.9	78.5	-	75.8	93.6	99.5	99.5	97.4	88.3
Brazil													
c2000	69.7	72.2	69.0	66.7	65.8	75.5	67.8	70.1	65.9	93.1	97.9	95.0	81.1
c2012	69.5	76.2	70.1	65.1	61.5	70.9	71.7	69.1	86.6	97.6	99.1	97.8	83.7
Chile													
c2000	74.9	74.0	72.3	73.8	74.8	81.9	68.0	76.0	71.8	97.9	99.3	97.9	87.8
c2012	73.3	76.1	71.3	68.9	69.5	81.4	69.2	73.9	93.9	98.9	99.5	99.0	92.0
Colombia													
c2000	63.0	64.8	63.6	59.9	59.4	67.7	58.9	65.6	77.7	94.1	96.2	89.3	67.8
c2012	68.2	71.3	67.7	65.1	65.1	72.4	63.2	69.9	86.9	96.6	97.1	93.5	75.5
Mexico													
c2000	64.6	65.2	61.5	62.0	62.8	73.0	61.7	66.6	85.2	95.9	97.1	88.8	57.9
c2012	66.9	66.3	64.9	66.3	65.2	73.4	62.6	69.7	96.4	98.4	98.2	91.6	66.2
Uruguay^b													
c2000	69.6	66.2	65.8	68.2	72.4	82.4	-	69.6	91.9	98.5	99.4	95.0	77.2
c2012	73.2	71.0	71.2	70.6	74.7	85.1	68.2	73.2	96.3	98.5	98.1	95.3	77.2

Notes: ^a Population aged 7 to 24 years; ^b Only urban area.

Source: CEPALSTAT (Economic Commission for Latin America and the Caribbean, ECLAC) and *Sistema de Información de Tendencias Educativas en América Latina* (SITEAL, IPE-UNESCO/OEI); based on special tabulations of each country's household survey data.

The ongoing expansion in enrolment during the past decades has allowed educational mobility to grow, resulting in a more diverse student population. However, perhaps more challenging problems remain, such as retaining students until graduation and ensuring an adequate progression. The share of students who lag behind by more than two years indicates the presence of grade repetition, absenteeism or late entry. Table 2 shows that most countries have reduced this indicator at the primary level, which is, with the exception of Colombia, currently close-to or under 10 per cent. At the secondary level, however, this problem tends to be more relevant, as difficulties accumulate along the years. Although comparisons between countries are risky –because the requisites for completing each level may differ–, Argentina, Colombia, and Uruguay seem to have the greatest problems in guaranteeing school progression at this stage. In these countries, the proportion of overage students has actually risen during the period, reaching values close to 30 per cent.

From an EEOp perspective, there are evident shortcomings, such as gaps by gender, socio-economic level, or geographical location. In most countries, boys, students in the lowest income groups, or those living in rural areas, are more likely to lag behind. Furthermore, while these gaps have only been slightly reduced in some systems, they have broadened in Brazil and Chile (at the secondary level), and in Mexico and Uruguay (at the primary level).

Table 2. Percentage of Overage Students ^a

	Year	Total	Gender		Income			Area	
			Male	Female	lower 30%	mid 30%	upper 40%	Rural	Urban
Argentina^b									
Primary	c2000	8.9	10.1	7.7	12.3	4.5	2.9	-	8.9
	c2012	6.6	6.9	6.3	8.7	4.1	2.7	-	6.6
Secondary	c2000	27.5	31.7	23.2	31.2	27.6	19.5	-	27.5
	c2012	31.2	34.1	27.9	32.4	30.4	27.2	-	31.2
Brazil									
Primary	c2000	20.8	24.2	17.0	22.3	9.8	4.9	36.3	16.2
	c2012	6.7	8.4	4.9	6.8	3.1	1.9	12.9	5.1
Secondary	c2000	25.2	27.9	22.5	31.4	23.0	13.4	36.0	23.5
	c2012	12.9	15.1	10.5	14.5	10.2	5.6	19.6	11.5
Chile									
Primary	c2000	11.0	12.4	9.5	13.3	8.2	5.2	17.1	10.0
	c2012	11.2	12.9	9.5	14.5	9.2	6.8	11.5	11.2
Secondary	c2000	13.8	15.3	12.3	14.9	13.5	9.2	18.2	13.2
	c2012	5.2	6.7	3.6	6.5	4.6	2.6	6.6	5.0
Colombia									
Primary	c2000 ^c	24.9	27.3	22.1	25.6	18.2	8.9	35.6	19.5
	c2012	17.5	20.6	14.1	19.2	11.8	8.0	27.7	14.6
Secondary	c2000 ^c	25.6	28.6	23.5	26.1	23.0	15.6	38.8	22.3
	c2012	30.2	33.7	26.3	33.4	26.3	20.2	42.1	27.8
Mexico									
Primary	c2000	10.4	12.0	8.8	9.5	4.7	3.3	17.1	7.1
	c2012	6.8	8.6	4.8	6.1	3.7	1.8	10.4	5.4
Secondary	c2000	21.5	23.9	19.2	20.9	20.8	18.0	25.8	20.4
	c2012	14.3	16.2	12.4	13.6	14.8	15.0	13.9	14.5
Uruguay^b									
Primary	c2000	13.0	14.9	11.1	17.3	7.1	4.2	-	13.0
	c2012	9.3	11.2	7.2	13.5	4.0	2.1	8.6	9.5
Secondary	c2000	24.9	26.5	23.3	29.9	25.0	16.0	-	24.9
	c2012	29.4	31.6	27.2	32.1	30.0	26.0	23.9	30.1

Notes: ^a 2 or more years behind the corresponding grade level; ^b Only urban area; ^c 2003.

Source: SITEAL (IPE-UNESCO/OEI) based on special tabulations of each country's household survey data.

It is also of interest to evaluate how these high levels of access to basic education translate into higher qualifications for the population. According to Table 3, Argentina, Chile, and Uruguay occupy the best position regarding the completion of primary school. Only around 2 per cent of the population aged 15 to 24 years had not finished this level by 2012. Mexico followed with 5 per cent, and finally, Colombia and Brazil presented values close to 10 per cent.

As for graduation from secondary school by the 20-24 year-old population, the countries may be grouped in pairs: Brazil and Chile lead with about 35 per cent of graduates; Argentina and

Colombia follow with 22 per cent; and Mexico and Uruguay lag behind with less than 10 per cent. Total levels of completion have not improved greatly during the past 12 years, and the large gaps between attendance and completion rates indicate important levels of dropout. Also, despite a moderate reduction, some gender and geographical differences remain relevant.

Table 3. Completion of the Primary and Secondary School Levels ^a

	Year	Total	Gender		Income			Area	
			Male	Female	lower 30%	mid 30%	upper 40%	Rural	Urban
Argentina^c									
Primary	c2000	97.5	96.9	98.1	95.5	98.9	99.2	-	97.5
	c2012	98.4	98.0	98.9	97.4	99.0	99.8	-	98.4
Secondary	c2000	18.2	17.1	18.9	16.9	19.9	17.1	-	18.2
	c2012	22.9	24.0	22.0	21.1	26.8	21.2	-	22.9
Brazil									
Primary	c2000	88.7	86.9	90.6	83.6	94.6	98.1	72.9	91.7
	c2012	89.8	88.2	91.5	86.8	91.6	95.3	84.3	90.8
Secondary	c2000	22.8	19.9	25.6	13.4	29.9	32.2	9.2	25.0
	c2012	36.2	33.5	38.9	32.9	45.3	36.2	26.7	37.6
Chile									
Primary	c2000	96.6	96.3	96.9	95.6	98.2	99.2	91.6	97.4
	c2012	98.7	98.6	99.4	98.6	99.0	99.7	97.9	99.1
Secondary	c2000	34.6	33.1	36.1	35.0	40.4	31.5	26.0	35.9
	c2012	34.4	33.8	35.1	37.6	40.4	24.0	42.4	33.5
Colombia									
Primary	c2000 ^b	89.4	86.9	91.7	92.1	93.7	96.9	75.6	94.2
	c2012	92.6	91.4	93.8	92.2	96.1	97.8	81.2	95.1
Secondary	c2000 ^b	20.1	31.8	34.3	34.6	40.2	36.1	23.1	36.4
	c2012	21.5	31.7	31.5	35.5	39.6	26.1	21.7	33.7
Mexico									
Primary	c2000	90.0	89.3	90.6	87.3	94.8	97.7	78.0	93.6
	c2012	94.9	94.1	95.6	92.9	97.1	98.4	90.3	96.2
Secondary	c2000	6.6	7.7	8.6	7.2	11.4	7.4	5.5	8.9
	c2012	8.7	13.6	16.3	14.2	18.4	13.0	14.0	15.2
Uruguay^c									
Primary	c2000	97.0	96.8	97.2	94.6	98.7	99.4	-	97.0
	c2012	97.6	96.8	98.3	95.5	98.7	99.6	97.3	97.6
Secondary	c2000	10.1	9.6	10.6	6.4	12.7	12.8	-	10.1
	c2012	7.5	8.3	6.6	5.4	8.5	8.6	7.6	7.5

Notes: ^a Percentage of the population aged 15 to 24 (20 to 24) years who completed the primary (secondary) level; ^b 2003; ^c Only urban area.

Source: SITEAL (IPE-UNESCO/OEI) based on special tabulations of each country's household survey data.

The quantity of education acquired by the population is the focus of another Educational Goal for 2021: to guarantee that the new generations have access to 12 years of instruction. This is considered the minimum amount required to gain the skills and knowledge currently needed to fully participate in society. In this respect, Argentina and Chile lead the ranking with an average amount of education close to 11 years, followed by Uruguay, Mexico, Colombia and finally, Brazil (Table 4). The number of years completed has grown by one in most countries since the year 2000; and total inequality, measured by the Gini coefficient, has dropped considerably.

Table 4. Years of Education^a

	Total	Gender		Equivalised income quintiles					Area		Gini of the years of education	
		Male	Female	1	2	3	4	5	Rural	Urban		
Argentina^b												
c2000	10.0	10.0	10.0	7.1	8.1	9.1	10.3	13.2	-	10.0	0.231	
c2012	11.2	11.0	11.4	8.9	9.8	10.6	11.7	13.7	-	11.2	0.196	
Brazil												
c2000	6.4	6.3	6.5	4.9	5.4	6.2	7.3	10.9	2.7	5.4	0.412	
c2012	8.0	7.7	8.2	5.0	6.2	7.4	8.8	12.3	4.0	6.8	0.347	
Chile												
c2000	10.0	10.1	9.8	7.6	8.5	9.3	10.7	13.4	5.4	8.0	0.241	
c2012	10.8	10.9	10.7	8.9	9.3	10.0	11.2	13.8	6.8	8.9	0.207	
Colombia												
c2000	7.4	7.3	7.5	4.9	5.4	6.2	7.3	10.9	3.8	7.1	0.358	
c2012	8.4	8.3	8.5	5.0	6.2	7.4	8.8	12.3	4.4	7.7	0.331	
Mexico												
c2000	7.7	8.2	7.3	3.7	5.4	7.0	8.3	12.1	4.1	7.4	0.370	
c2012	8.7	9.0	8.4	5.6	6.9	7.8	9.0	12.5	5.1	7.7	0.315	
Uruguay												
c2000 ^b	8.9	8.7	9.1	6.5	7.4	8.2	9.3	12.0	-	8.9	0.240	
c2012	9.8	9.4	10.1	7.0	7.9	8.9	10.4	13.3	6.2	8.0	0.228	

Notes: a Population aged 25-65 years; b Only urban area.

Source: Socio-Economic Database for Latin America and the Caribbean (SED-LAC, CEDLAS and The World Bank) based on special tabulations of each country's household survey data.

In summary, it may be concluded that Latin America continues to advance in the expansion and equity of access to education. Since the year 2000, attendance rates have steadily grown for all school levels, and access gaps by area of residence or socio-economic status have decreased. Nonetheless, small but relevant fractions of the population in each country remain excluded. Also, the problems of school lag and low graduation rates, especially at the secondary level, seem to have become even more significant. This indicates a possible trade-off between inclusion into the system and the capacity to deal with the recently-included pupils.

Furthermore, gender, income, and geographical location are still relevant determinants of inequality in most countries. In general, boys, children from low income families and rural residents are at a disadvantage. This applies especially to the quality of educational trajectories, considering progression and completion issues. It is worth evaluating then, whether former inequalities of access have been transformed into inequalities of attainment and achievement, where the main challenges for education systems in the region now seem to reside.

3. EQUALITY OF OPPORTUNITY IN KNOWLEDGE AND SKILLS (2000-2012): A DISAPPOINTING EVOLUTION

In this section our analysis focuses on test scores –their average and distribution– as a proxy for education *quality*. We first observe average scores in PISA exams, which have been applied every three years since 2000. In 2012, the last round, the sample consisted of 510 thousand students representing around 28 million pupils from 65 countries.⁵ Argentina, Brazil, Chile, and Mexico have participated from the beginning of the programme, whereas information regarding Uruguay and Colombia is available from 2006 onwards. We have restricted our focus to Mathematics scores.

Average scores might be viewed as a relevant dimension of educational opportunities, since they reflect the prospects for acquiring important skills and knowledge an average pupil has in a given country in a particular moment. As compared to OECD countries' scores, whose average is around 500, average scores obtained by pupils from Latin America, shown in Panel A in Table 5, are *systematically much lower*, all of them below 400 in 2000, and ranging from 376 to 423 in 2012. While improvements have occurred along this twelve-year period in some countries, all these results –and thus any overtime or cross-country comparison– should be taken with great caution. First, because the coverage rates⁶ oscillate (cf. Panel B in Table 5), and second, because there may have been changes in the composition of the samples, due to reasons such as modifications in the month of the year in which the exam took place⁷.

⁵ Source: <http://www.oecd.org/pisa/aboutpisa/>, accessed on February 2014.

⁶ PISA samples have an important limitation: they do not fully represent the national population of 15-year-olds in many participating countries. Coverage rates are not 100 per cent for various reasons, some of which are logistic or fortuitous (e.g., pupils living in a remote region, or who were sick the day of the exam), while others reflect genuine problems (i.e. individuals enrolled in too low a grade or who are not enrolled are ineligible for PISA exams). Since school lag and dropout are important challenges in Latin America, results reflect the quality of education acquired by a group, which might be more or less selective depending on the country.

⁷ R. Klein, 'Uma re-análise dos resultados do PISA: problemas de comparabilidade', *Ensaio: Aval. Pol. Públ. Educ.*, 19:73 (2011), pp. 717-768.

Table 5. PISA 2000-2012. Average Scores in the Mathematics Exam (Panel A) and Coverage Rates, in Percentage of the Cohort of 15-Year-Olds Represented by the PISA Sample (Panel B).

Panel A	2000	2006	2009	2012
Argentina	388	381	388	388
Brazil	334	369	386	391
Chile	384	411	421	423
Mexico	387	406	419	413
Colombia	-	370	381	376
Uruguay	-	427	427	409
Panel B	2000	2006	2009	2012
Argentina	77	79	69	80
Brazil	69	55	63	69
Chile	82	78	85	83
Mexico	45	54	61	63
Colombia	-	60	59	63
Uruguay	-	69	63	73

Source: PISA exams and reports.

The broad picture that emerges from the data in Table 5 is that of a clear-cut stagnation in Argentina and Colombia; Uruguay sees stagnation followed by a slight decline in average scores, possibly related to an increase in its coverage rate and a consequential inclusion of many socially disfavoured pupils; considerable improvements in Mexico and Chile, in spite of an increase and maintenance at a high level, respectively, of coverage rates; sizeable progress in Brazil, but preserving the same low coverage rate (69 per cent) it had in 2000.

Average scores are relevant, but they might hide more information than they show. It is usually not sufficient to know the fortune of an average pupil, who might not concretely exist in very unequal contexts. This is why it is important to turn to more sophisticated indicators. As previously mentioned, the EEOp considers that inequalities in an outcome may be partitioned into a fair portion and an unfair one: inequalities stemming from circumstances are unfair, in contrast with those which depend on choices made by individuals with equal circumstances.

Different techniques translate those concepts into indicators.⁸ Some contributions have concentrated in the measurement of EEOp, with an emphasis on pupils' educational achievement, usually measured by standardised test scores⁹. Following that approach, we report estimations of inequality of opportunity in six Latin American countries, plus Portugal

⁸ For recent surveys, see: G. Pignataro, 'Equality of Opportunity: Policy and Measurement Paradigms', *Journal of Economic Surveys*, 26:5 (2012), pp. 800-834; and X. Ramos, and D. Van De Gaer, 'Empirical Approaches to Inequality of Opportunity: Principles, Measures, and Evidence', *Working Papers 259* (2012), *ECINEQ*, Society for the Study of Economic Inequality.

⁹ D. Checchi and V. Peragine, 'Inequality of Opportunity in Italy', *Journal of Economic Inequality*, 8 (2010), pp. 429-450; F. Ferreira and J. Gignoux, 'The Measurement of Educational Inequality: Achievement and Opportunity', *Policy Research Working Paper 5873* (2011), The World Bank. Available at: <http://elibrary.worldbank.org/doi/book/10.1596/1813-9450-5873>; L. F. Gamboa and F. Waltenberg, 'Inequality of Opportunity in Educational Achievement in Latin America: Evidence from PISA 2006-2009', *Economics of Education Review*, 31:5 (2012), pp. 694-708.

and Spain (Table 6). As for the method, we calculate inequality of opportunity as the proportion of the variance of PISA Mathematics scores that is explained by a set of circumstances, ranging from zero (perfect equality of opportunity) to one (maximum inequality of opportunity)¹⁰. The exercise does not aim at establishing a causal relationship; it simply consists of a static decomposition of inequality into unfair inequality (the *R*-squared) and residual inequality (one minus the *R*-squared).

Table 6. Inequality of Opportunity in Education as Measured by the Proportion of Variance of Test Scores Explained by a Set of Circumstances

R-squared	2000	2006	2009	2012
Argentina	0.281	0.271	0.269	0.269
Brazil	0.253	0.324	0.293	0.274
Chile	0.241	0.286	0.217	0.273
Mexico	0.176	0.217	0.258	0.311
Colombia	-	0.187	0.174	0.133
Uruguay	-	0.199	0.206	0.231
Spain	0.236	0.189	0.271	0.229
Portugal	0.221	0.165	0.156	0.193

Source: Own calculations employing PISA data.

In order to ensure overtime comparability, we have chosen as ‘circumstances’ a set of variables which is available with equal or very similar definitions across different rounds of PISA, namely: pupil’s gender, pupil’s father’s and mother’s education and occupation, school type (i.e. public or private), family wealth (a composite variable that expresses the relative overall financial situation of the household), and home educational resources (a composite variable that expresses the extent to which educational resources in particular are available).

To clarify the content of Table 6, let us focus on the number that appears in the fourth row of the first column: 0.176. It means that 17.6 per cent of the variance in PISA Mathematics scores in Mexico in 2000 is ‘explained’ by pupils’ circumstances, quite above the ideal 0 per cent, but way below the undesirable 100 per cent. It means thus that the level of inequality of opportunity in education quality in Mexico was 17.6 per cent in 2000, at least according to a very parsimonious (and thus inevitably incomplete) definition of circumstances –had more information been included, the calculated level would have been higher–. Keeping our eyes on Mexico, we observe an important increase in inequality of opportunities along the years, which has reached more than 30 per cent in 2012.

In the remaining five Latin American countries, inequality of opportunity in achievement has either remained essentially stable (Argentina) or has deteriorated (other countries). This is indeed worrying, since it means that circumstances beyond an individual’s control are equally good, or even stronger, predictors of knowledge and skills today than they were over a decade ago.

¹⁰ We follow Ferreira and Gignoux, *op. cit.*

To put those results into perspective, it is useful to compare them with those of Portugal and Spain, two countries which, while European and members of the OECD, are not renowned as archetypal providers of equal opportunities for their citizens. Yet, with a few exceptions in particular countries and years, Latin American countries' levels of inequality of opportunity in achievement are equal to or higher than those of Portugal and Spain.

Summing up, in the countries we have focused on, not only is average achievement alarmingly low, but also, circumstances are significant determinants of a pupil's outcome, and there has been no clear improvement in this respect in the past decade. Reconnecting to the paper's plot, while Latin America has seen economic and redistributive advances in the 2000s, as well as in access to education (with due qualifications exposed in Section 2), when it comes to knowledge and skills the situation has not improved. To better understand these trends, we now focus on three important countries in the region: Argentina, Brazil and Colombia.

4. ARGENTINA: A PERIOD OF REFORMS AND HIGHER SPENDING WITH MODEST RESULTS

In a context of profound socioeconomic changes, the Argentine education system has been deeply transformed during the last few decades through the application of two successive waves of reforms. At the beginning of the nineties, a radical neoliberal programme was applied with high social costs, as unprecedented levels of poverty, income inequality, unemployment, and social segregation were reached throughout the decade. The economic equilibrium was ultimately compromised, and the century ended with a deep socioeconomic crisis.

As for the education system, the reform undertaken during this period was paradigmatic for its depth, speed and coverage. The chief goals of increasing access, quality and equity in basic education, were pursued by radically modifying the structure and governance of the system and guaranteeing a higher amount of public spending on education. One of the main aspects of the reform was that it completed the decentralisation of the provision of basic education services from the central government to the provincial level. Also, a new legal framework for the system was established in 1993, which included the following components: the compulsory school attendance period was extended from seven to ten years; private services were granted the same legal status as government services; and several supply and demand-side programmes were designed and implemented to aid low-income families and vulnerable schools.

Notwithstanding the severe criticism received by the reform and the difficult socioeconomic context in which it was applied, there is evidence of some positive results. The main achievement was probably the growth in school attendance at the secondary level, which greatly reduced socioeconomic gaps in access and increased the proportion of the population holding a high-school degree. There is consensus, however, over the difficulties encountered to preserve and strengthen the quality of the services provided: repetition and dropout rates have risen or remained high during the period, and the role played by circumstances like family

income or parental education remains significant; regional inequalities have been exacerbated by the decentralisation process; and public-private sector disparities have grown.

After the deep crisis of 2001-2002, the process of economic recovery allowed a great improvement in most socio-economic indicators. Nevertheless, some serious problems persist in with this new model, such as a high degree of labour informality; relevant income inequality and poverty levels; and residential and social segregation¹¹.

In the education sector, a new process of reform has been underway since 2005. Law 26.075 established the obligation to gradually raise public expenditure on education, from 4 per cent of the Gross Domestic Product (GDP), to 6 per cent by the year 2010. According to different sources, the goals set down in this law have been successfully met, thus positioning Argentina among the countries with the highest public spending on education relative to GDP¹².

The expansion in the education budget had a large impact on teachers' wages, which grew by more than 60 per cent in real terms between 2004 and 2010¹³. However, there is significant wage dispersion between provinces; teachers' salaries in Argentina remain low by international standards; and the goals of strengthening teacher training or professionalising the career were not accomplished¹⁴. Thus, teachers' unions are often in conflict with the government, so that strikes are frequent; there is a high degree of dissatisfaction with working conditions; and incentives to entering the teaching career are relatively low.

The new National Law of Education (26.206) passed in 2006, was intended to promote regional coherence, as well as to continue pursuing the goals of quality and equality. The compulsory school attendance period was extended again, now covering 13 years of basic education, and organisational and curricular innovations were introduced. Also, during this period important targeted programmes were created or extended, in order to support the demand for education from vulnerable children and to strengthen service provision by disadvantaged schools. Additionally, the implementation of a social welfare programme in 2009, *Asignación Universal por Hijo* (Universal Child Allowance), was relevant due to its poverty reduction potential and its conditionality of school enrolment.

Special attention was devoted in this legislation to extending the length of the school day and year. However, progress has been slow and Argentina is currently one of the Latin American countries with the lowest official learning time in basic education¹⁵. Moreover, official

¹¹ F. Groisman, 'Argentina: los hogares y los cambios en el mercado laboral (2004-2009)', *Revista de la CEPAL*, 104 (2011), pp. 81-102; C. Veleda, A. Rivas and F. Mezzadra, *La construcción de la justicia educativa. Criterios de redistribución y reconocimiento para la educación argentina* (Bs. As.: CIPPEC-UNICEF-Embajada de Finlandia, 2011).

¹² DiNIECE, *Una mirada sobre la escuela 3*; and P. Bezem, F. Mezzadra, and A. Rivas, 'Monitoreo de la Ley de Financiamiento Educativo. Informe Final', *Informe de Monitoreo y Evaluación* (2012), Bs. As.: CIPPEC.

¹³ L. Bottinelli, 'La recomposición de los ingresos laborales de los docentes en el período de la pos-convertibilidad', *X Jornadas de Sociología* (2013), Bs. As. Available at: <http://sociologia.studiobam.com.ar/wp-content/uploads/ponencias/454.pdf>

¹⁴ OECD, *Education at a Glance 2012: OECD Indicators*. Available at: <http://www.oecd.org>; Bezem, Mezzadra and Rivas, 'Monitoreo de la Ley de Financiamiento Educativo'. (2012). Available at: <http://www.cippec.org>

¹⁵ E. Tenti Fanfani, A. Meo and A. Gunturiz, *Estado del arte: escolaridad primaria y jornada escolar en el contexto internacional. Estudio de casos en Europa y América Latina* (Bs. As.: IPE-UNESCO, 2010).

instruction time tends to differ from real instruction time due to teacher absenteeism, strikes, and infrastructure problems. Thus, total school hours vary greatly between years and regions.

As for the quantity and quality of human and material resources, information is scarce. In primary schools, according to UNESCO data for the year 2008, the student-teacher ratio is similar to that in other Latin American countries, and has remained relatively stable since the nineties. On the other hand, infrastructure and material resources were slightly better than in the rest of the region. However, notorious differences are found between provinces and schools, associated with socioeconomic background¹⁶. This is linked to student social segregation, a problem which constitutes a relevant source of inequalities in achievement¹⁷.

As may be inferred from the previous sections, progress in educational outcomes during this last decade has been rather modest, mainly circumscribed to equality in access. School attendance rates have either remained stable or marginally grown for most age groups, with the exception of the pre-primary level where access has grown considerably, and gaps by household income have continued to fall. Other quantitative indicators were further improved, such as the average number of years completed by the adult population, and the proportion that currently finishes the secondary and tertiary levels. On the other hand, there is little evidence of a positive evolution in the quality of education. School lag, for instance, has moderately dropped at the primary level, but has increased slightly at the secondary level, and there is still evidence of gender and socio-economic inequalities. As for the learning achievement levels, the information provided by PISA for 15-year-old students isn't very auspicious: Argentina systematically occupies the lowest positions in the international rankings, and little progress has been made between the years 2000 and 2012.

Considering equality of results, however, there appears to have been a somewhat positive evolution, since the proportion of the variance in results explained by the chosen circumstances has experienced a small reduction (Table 6). Still, the level of inequality continued in 2012 to be significantly higher than in the reference countries, Spain and Portugal. This change then, although statistically significant, is not considerable enough to infer that the influence of family background in achievement has fallen during the last decade.

In conclusion, results in the Argentine education system seem disappointing in light of the important efforts exerted during the last few decades. Explaining these developments is quite complex, due to the multiplicity of factors involved. The modest improvement in equality of opportunities in access and performance might respond to the recovering socio-economic context since the beginning of the century, as well as to the supply and demand-side policies implemented. On the other hand, the system still faces evident difficulties to integrate children from vulnerable backgrounds, which results in social segregation and the provision of services of differential quality. Furthermore, the last reform has received criticism for its speed and the lack of preparation and support from the main actors involved, which has hindered its

¹⁶ A. Rivas, A. Vera and P. Bezem, *Radiografía de la educación argentina* (Bs. As.: Fundación CIPPEC -Fundación Arcor - Fundación Roberto Noble, 2010); N. Krüger, 'The Segmentation of the Argentine Education System: Evidence from PISA 2009', *Regional and Sectoral Economic Studies*, 11:3 (2011), pp. 41-64.

¹⁷ N. Krüger, 'Segregación social y desigualdad de logros educativos en Argentina', *Archivos Analíticos de Políticas Educativas*, 21:86 (2013). Available at: <http://epaa.asu.edu/ojs/article/view/1352>

impact¹⁸. Finally, despite the larger education budget, teacher dissatisfaction is still high, total instruction time is insufficient, and financial inequalities between provinces persist. Thus, structural barriers have yet to be overcome, which will require innovative measures.

5. BRAZIL'S STRUCTURAL CHANGES IN BASIC EDUCATION: TOO LITTLE, TOO LATE

While socio-economic indicators at the turn of the century were not particularly auspicious, important developments had taken place in Brazil's education system. They had delivered moderate immediate effects in terms of EEOp –as attested by unsatisfactory figures concerning 2000 observed in Tables 1-7– but offered reasonably promising prospects.

As elsewhere in Latin America, socio-economic indicators improved during the past decade. Indeed, inequality and poverty levels dropped, from 0.59 to 0.54 (Gini), and from 37 per cent to 24 per cent (head count) respectively –levels which, while high for international standards, are historical lows in Brazil–. The unemployment rate fell from 13 per cent in 2001 to 7.9 per cent in 2011, and the proportion of formal workers reached 52.5 per cent in 2011, up from 41.9 per cent in 2001.¹⁹ The main drivers of such improvements were fast growth, and two important policies: the implementation of *Bolsa Família* (Family Allowance) in 2004, a large conditional cash transfer programme, and sustained increases in the minimum wage level.

In education, some trends and policy paths have been deepened or reinforced. Large-scale standardised tests became widespread, at the national and subnational levels. The federal government maintained Brazil's participation in the successive PISA editions, ensuring the possibility of international comparisons, and also created in 2005 the *Prova Brasil* (Brazil Test), a biennial census-level national assessment of knowledge and skills of primary (public urban) schools' pupils. Shortly after, it created the *Índice de Desenvolvimento da Educação Básica* (Index of Basic Education Development, IDEB) which aggregates with equal weights test scores in Prova Brasil (or SAEB, for private schools) and approval rates, and may be computed at any level (country, state, municipality, or school). IDEB results are available on-line providing information for parents and policy-makers.

One of the main critiques to the formula used then to fund public primary education in the country (through the co-called "FUNDEF"²⁰) was that it allowed for too wide inequalities. For example, in 2006, the last year of FUNDEF, per-pupil spending in the relatively rich state of São Paulo was 2.5 higher than in the poorer state of Alagoas.²¹ Another important critique was that the federal government could set low threshold levels, thus minimising its own contribution to

¹⁸ Ruiz, 'La nueva reforma educativa argentina según sus bases legales'.

¹⁹ Sources: *Pesquisa Nacional por Amostra de Domicílios* and *Pesquisa Mensal de Emprego*, both collected by Instituto Brasileiro de Geografia e Estatística. Consulted in IPEADATA (<http://www.ipeadata.gov.br/>) in May 2014.

²⁰ *Fundo de Manutenção e Desenvolvimento do Ensino Fundamental e de Valorização do Magistério*.

²¹ M. Franca, 'Financiamento e qualidade da educação básica no Brasil: evidências a partir do FUNDEB', unpubl. MS diss., Universidade Federal Fluminense, Niterói, Brazil, 2013.

the poorest states²². The aforementioned state of Alagoas for example, did not receive supplementary resources in 2006 from the federal government, since the threshold level had been set so low that only Pará and Maranhão were granted that right. These problems affected Brazil's public education irrespectively of the government in office, since they occurred throughout Cardoso's second term (1999-2002) and Lula da Silva's first term (2003-2006).

Only in 2007, already in Lula da Silva's second term (2007-2010) was FUNDEF replaced by FUNDEB,²³ expanding the sources of revenues, modifying the funding formula, and widening its scope. It now covers all 'basic education', adding pre-school, secondary school, and basic education for adults, to primary school, which was the exclusive focus of the previous scheme. Larger amounts of federal funds have also been set aside to supplement the meagre per-pupil spending at relatively poor states.

A novelty in the 2000s was the implementation of conditional cash transfer schemes. In Brazil, they had been launched through local experiences in the 1990s and became a federal programme in 2001, still during the Cardoso administration (1995-2002) under the name of *Bolsa Escola Federal* (Federal School Allowance), providing cash transfers to poor families conditional on their enrolling their children in school. In 2003, the first year of Lula da Silva's administration, that programme was merged with others under the label *Bolsa Família* and expanded substantially, to reach around 13 million beneficiary families by the end of the decade. Different studies have concluded that children aged 7-14 living in households receiving these benefits are more likely to be enrolled at school, and less likely to repeat a grade or drop out. The evidence concerning the effect on test scores is sparse and more ambiguous²⁴.

The main advantage, if any, of the pressure for better results on IDEB, seems to be oriented to its approval rate dimension, reflected on the figures in Table 2. The percentage of overage students in Brazil's primary school has dropped substantially from 20.8 per cent in 2000 to 6.7 per cent in 2012, the most impressive reduction in the region, particularly benefitting the poorer population. In secondary school, the reduction has been significant too, from 25.2 to 12.9 per cent. Nonetheless, the coverage rate in PISA exams remains in 2012 the same as it was in 2000, suggesting that retention and dropout still plague Brazil's system, at least for 15-year-olds –thus, there still are important deficits in access-opportunities–.

Regarding the quality dimension of IDEB, the pressure for better results on the exam, the current widespread 'accountability culture', and the overall configuration of Brazil's education system do not seem to be leading to notable results. PISA average Mathematics scores have increased in the 2000s, but inequality of opportunity in education (Table 6) has deteriorated.

²² D. Vazquez, 'Desequilíbrios regionais no financiamento da educação: a política nacional de equidade de FUNDEF', *Revista de Sociologia e Política*, 24 (2005), pp. 149-164.

²³ *Fundo de Manutenção e Desenvolvimento da Educação Básica e de Valorização de Profissionais de Educação*.

²⁴ R. Silveira Neto, 'Impacto do Programa Bolsa Família sobre a frequência à escola: estimativas a partir de informações da Pesquisa Nacional por Amostra de Domicílios (PNAD)' in J. de Castro and L. Modesto (eds.), *Bolsa Família 2003–2010: avanços e desafios* – Vol. 2 (Brasília: IPEA, 2010); F. Cireno, J. Silva and R. Proença, 'Condicionalidades, desempenho e percurso escolar de beneficiários do Programa Bolsa Família', and P. Jannuzzi and A. Pinto, 'Bolsa Família e seus impactos nas condições de vida da população brasileira: uma síntese dos principais achados da pesquisa de avaliação de impacto do Bolsa Família II', in T. Campello and M. Neri (orgs.), *Programa Bolsa Família: uma década de inclusão e cidadania* (Brasília: IPEA, 2013).

The explanation cannot lay on a more heterogeneous student body, for two reasons: (i) few new socio-economic groups have been incorporated into the system in the 2000s; (ii) the coverage rate remains stable. Moreover, the improvement of socio-economic indicators in the decade could in fact lead to a prediction of larger EEOp.

Possibly the reason why so much changed in general socio-economic terms, but so little in EEOp indicators is the lack of deeper structural educational reforms. Typical Latin American social segregations remain intact in Brazil: (i) in metropolitan areas, between selective private schools for the better-off and underfunded public schools for the worse-off; (ii) among private schools, according to the degree of selectivity (academic and social), which is correlated to the fees charged; (iii) among public schools, according to location, reputation and other features²⁵; (iv) across states, as shown by the per-pupil-spending gaps.

The supply of education in Brazil is too heterogeneous, both in terms of capital and of labour. A study based on 2011 data, presents a typology of infrastructure facilities in Brazilian schools, classifying them in four groups: elementary, basic, adequate and advanced. Only 15.5 per cent of the schools reach at least the adequate level, and 44.5 per cent do not reach the basic level. Inequalities across regions and schools types are noteworthy.²⁶ The overall deficit in infrastructure is not only very large, but it is also unequally distributed. The equalisation of (flows of) revenues made possible through FUNDEF and now FUNDEB is insufficient, not only because it is performed exclusively within-states, and because the federal supplementation was (until 2006) too small, but also because there are infrastructural inequalities (stocks).

In terms of labour, it is well known that teachers are essential in the education production function. For many reasons, higher teacher wages could enhance learning: motivating teachers in service, retaining good teachers in the occupation, attracting good candidates.²⁷ In countries with good PISA results, teachers are relatively well-paid and are recruited among above-average high-school students²⁸. Latin American teachers' wages are low when compared to equally qualified workers, a result which is confirmed for Brazil with late-2000s data²⁹. National studies indicate that very few good students in high-school want to pursue a career teaching, which is due to lack of social prestige, fear of violence at schools and perceived low wages.³⁰

²⁵ M. Costa and M. Koslinski, 'Escolha, estratégia e competição por escolas públicas', *Pro-Posições*, 23:2 (2012), pp. 195-213.

²⁶ J. Soares Neto, G. De Jesus, C. Karino and D. De Andrade, 'Uma escala para medir a infraestrutura escolar', *Est. Aval. Educ.*, 24:54 (2013), pp. 78-99.

²⁷ P. Dolton, 'Teacher Supply', in E. Hanushek, and F. Welch (eds.), *Handbook of Economics of Education*, vol. 2 (Amsterdam: Elsevier, 2006).

²⁸ M. Barber and M. Mourshed, *How the World's Best Performing School Systems come out on Top* (London: Mc Kinsey, 2007).

²⁹ A. Mizala and H. Ñopo, 'Evolution of Teacher's Salaries in Latin America at the Turn of the 20th Century: How Much Are They (Under or Over) Paid?' *IZA Discussion Paper* 6806 (2012); A. Britto and F. Waltenberg, 'É atrativo tornar-se professor do Ensino Médio no Brasil? Evidências com base em decomposições paramétricas e não-paramétricas', *Estudos Econômicos*, 44:1 (2014), pp. 5-44.

³⁰ G. Tartuce, M. Nunes and P. Almeida, 'Alunos do ensino médio e atratividade da carreira docente no Brasil', *Cadernos de Pesquisa*, 40:140 (2010), pp. 445-477; P. Louzano, V. Rocha, G. Moriconi and R. Oliveira, 'Quem quer ser professor? Atratividade, seleção e formação docente no Brasil', *Est. Aval. Educ.*, 21:47 (2010), pp. 543-568.

An important and promising policy reform in the 2000s was the implementation of a specific national minimum wage for teachers. It was introduced in July 2008³¹ to take effect in 2009. The problem is that while the legislation stems from the federal level, given the organisation of Brazil's education system it is states' and municipalities' duty to actually pay teachers' wages. Since tax revenues are excessively centralised, many administrations simply cannot implement the legislation, or face many difficulties in doing so.

6. COLOMBIA: SOME ADVANCES IN ACCESS BUT NOT IN QUALITY

Colombia has been recognised for its historically high levels of inequality with slow improvements on educational indicators. Fiscal and administrative decentralisation have been implemented during three decades to revert this trend. For example, since 2004, funds have been transferred to "certified" regional entities –states and municipalities with a population over 100 thousand– according to coverage of the pupils' population. Through this initiative, some progress has been made through the rearrangement of responsibilities, the creation of information and monitoring systems, and the design of long-term policies. Also, local incentives to increase enrolment at the municipal level have been strengthened. However, the total amount of funding for education continues to be lower than the amount assigned to areas like defence.

During the last decade, education has been presented as a means to reduce armed conflicts by increasing access and avoiding recruitment by armed illegal groups. The importance of public enrolment has increased notoriously as a result of great efforts aimed at avoiding dropout and fighting demand barriers to access (i.e. conditional cash transfer programmes, free service provision, school meals, rural education programmes, transport subsidies, etc.). This required financial efforts which were made possible only after important oil discoveries in the country provided the funds to support the transfers specified in Law 60 and Law 715.

However, due to the economic recession occurred at the end of the century, the demand for private education services fell, increasing pressure in the public sector. Net enrolment rates grew from 35, 92 and 68 per cent in 2000 at the preschool, primary and secondary levels, respectively, to 45, 96 and 79 per cent in 2012 (ECLAC; SEDLAC). The proportion of students who complete high school increased as well, according to the National Ministry of Education: between 2001 and 2012 the completion rate grew by 67 per cent at the public sector and 10 per cent at the private sector.³²

Education quality has been addressed through the use of national standardised tests and the application of the so-called 'school co-existence initiatives', an integral system combining competences and citizen skills. The *SABER* tests are taken throughout the school career (5th, 9th and 11th grade and at the end of higher education, *SABER-Pro*). Although traditionally used to monitor progress at the regional and local levels, these tests are also employed to classify schools, and operate as a signal to parents in their school-selection process, especially in the

³¹ Created through Act 11.738/2008.

³² Ministerio de Educación Nacional, 'Revolución educativa 2002-2010: acciones y lecciones' (2010). Available at: http://www.mineducacion.gov.co/1621/articles-242160_archivo_pdf.pdf

private sector. Results from SABER 11 suggest that differences in Mathematics or Reading between private and public schools are significant (Test scores are more than ten per cent lower in the publicly-administered schools). However, when equivalent socio-economic conditions are assumed, these gaps in achievements tend to disappear.³³ A recent study employing SABER 11 test shows that inequality of opportunities has grown during the past decade, and it is more notorious in the main metropolitan areas (Bogotá, Medellín, and Cali).³⁴ At international level, Colombia has also participated in TIMSS (Trends in International Mathematics and Science Study) and PISA. Relative performance to other countries has been lower than the international average both evaluations.

Regarding the gender gap, boys seem more prone than girls to lag behind in primary and secondary school levels, and the differences grow at higher stages. This result has been at the centre of attention, since absenteeism and delay among boys is highly associated with criminality, armed conflict and child labour; while among girls, it is often linked to teenage pregnancy and also child labour.

As for the gaps between urban and rural areas, gains in access have not been matched by a greater equality of results. At the end of the nineties, attendance levels were much lower in the rural sector, but these differences have been recently reduced, due to a higher coverage, a larger teacher staff, and new flexible service-provision schemes. However, what represents an important concern is the gap in the proportion of students who lag behind (see Table 2).

Some initiatives have been implemented in order to improve educational quality: changes in the teaching career were introduced and a new supply of educational services was provided through private schools (such as charter schools).

The teaching career scheme (*escalafón docente*) established by Decree 2277 in 1979 was modified by Decree 1278 in 2002. This new mechanism is more demanding, and requires a trial period, strong achievement evaluations and continuous training in order to be promoted. Also, it seeks to align teachers' incentives with those of the government, through the possibility of being fired for those who do not abide by the rules. However, the highest salaries with this new scheme are still not enough (approximately U\$S 1,300 a month) to attract the most qualified human capital to the field.

Another measure was the creation of voucher (PACES) and charter schools programmes (*Colegios en Concesión*) to cover the excess of demand. Although these schools have permitted low income students to receive private education services, the effect of this system on quality –measured through test scores– may not be significant.³⁵

In 2012, attendance rates reached values close to 100 per cent at the primary level, and over 70 per cent for students aged 13 to 19 years. To sum up, progress in the educational sector

³³ A. Iregui, L. Melo and J. Ramos, 'Análisis de eficiencia de la educación en Colombia', *Revista de Economía del Rosario*, 10:1 (2007), pp. 21-41.

³⁴ L. F. Gamboa and E. Londoño (2015), 'Assessing Inequality of Opportunity in Education at a Regional Level in Colombia', *Lecturas de Economía*, 83, pp. 97-133.

³⁵ J. Angrist, E. Bettinger, E. Bloom, E. King and M. Kremer, 'Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment', *American Economic Review*, 92:5 (2002), pp 1535-1558.

during the last decades has been practically restricted to reducing demand barriers to access for low income students in public schools.

7. CONCLUSION: THE MOST DIFFICULT CHALLENGES ARE AHEAD

Along a decade of economic growth and improving socio-economic conditions in Latin America, a wide array of education policies has been implemented, with impacts on relevant indicators.

Each country has departed from a different situation and has evolved in its own particular way, although the overall picture shows that while some groups still struggle to solve progression and completion problems, there have been reasonable improvements in the access dimension.

Nonetheless, the evolution of knowledge and skills seems insufficient and disappointing, since not only do they stand on average far below an acceptable level, but also, and more importantly, a pupil's outcome remains significantly predetermined by her circumstances, and there has been no clear progress in this respect. To the contrary, in most countries of the region EEOp in PISA test scores has deteriorated between 2000 and 2012 –and it would be worse had the samples covered the whole cohort–.

Argentina, Brazil and Colombia, the countries chosen for more detailed analyses, differ in many respects and stood in contrasted positions at the turn of the century. Notably, Argentina had much better indicators by 2000 than the other two countries. However, some trends and difficulties have been shared by all of them, such as the paradox of a movement toward decentralising education provision in a context of centralised funding. The implementation and expansion of conditional cash transfers has also been common to the three countries, but at different moments and with different designs, and it might be the case that some effects of these programmes on education are yet to come –especially in Argentina, since its scheme is relatively recent–. In all cases there are shortages of teachers as well, be it quantitatively (e.g., reflected in too few extended-day schools) or qualitatively (e.g., low wages, low status and tough working conditions). Basic physical infrastructure in schools is also a concern, more so in Brazil and Colombia than in Argentina.

Aimed at tackling the aforementioned problems, a myriad of different reforms have been tried in the three countries –wage increases, teacher-career restructuring, the diffusion of a 'testing culture', funding reforms, the introduction of weak and strong accountability schemes, and so on–. And that happened as the economies were growing, unemployment rates were decreasing, and inequality and poverty levels were retrenching, all of which would suggest further positive impacts on children's education.

If the improvements in achievement levels –on average and regarding their distribution across the population– have been unsatisfactory, we must first admit that it would have been impossible to advance in this respect given the poor initial education indicators, particularly so in Brazil and Colombia. It must also be said that changes in education –especially in qualitative matters– are inevitably slow. While poverty rates, for example, can follow the economic cycle

in developing countries, a person's skills and knowledge are not so 'elastic', even more so given the fact that parental education is always a good predictor of a person's test scores.

While acknowledging all those caveats, we should not be too complacent. Latin America's education is still in need of deeper, structural, reforms. It is clear that the most difficult challenges are ahead. Those reforms should allow to: (i) attract talented students to the teacher occupation, especially to public schools; (ii) increase the average number of effective hours of instruction (with positive spill-overs, for example to women's participation in the labour market); (iii) tackle the social segregation which separates the better-off and the worse-off into schools well-equipped –both in labour and in capital–, and poorly-equipped, respectively; (iv) ensure sub-national governments have adequate funding to provide the services entrusted to them. To accomplish all that, increasing public investment in education in those countries, while not a sufficient condition, is certainly a necessary one.