

# The search for equity, inclusion and quality in the Chilean education

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# Agenda

- ✓ The Chilean school choice system
  - The 80's: Educational Market
  - Education Policies 1990-2006: Market and State
  - Analysis of the school choice policies
- ✓ Advances in regulation, equity and quality
  - Preferential School Subsidy Law (2008)
- ✓ Inclusion Law (2015)
- ✓ Policy effects
- ✓ New Challenges post COVID 19



# The Chilean school choice system

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# The 80's: educational market

In the early 1980s, the Chilean educational system underwent a deep transformation.

- A universal voucher system was introduced.
- The public system was decentralized; school management was delegated to municipal authorities.
- The government paid a flat per-student subsidy -that did not vary with family SES- to public and private-voucher schools (it was modified in 2008).
- Parents choose schools regardless of where they live.

As an outcome of these reforms Chile has 3 types of schools:

- Private non-voucher schools: financed by fees paid by parents, run by the private sector.
- Private-voucher schools: financed by a per-student voucher provided by the state, run by the private sector.
- Public schools: financed by a per-student voucher, run by municipal authorities.

# Differences in the rules of the game between school sectors

## Student selection

- Public schools had to admit all the students who applied if they had vacancies.
- Private-voucher schools could select their students.

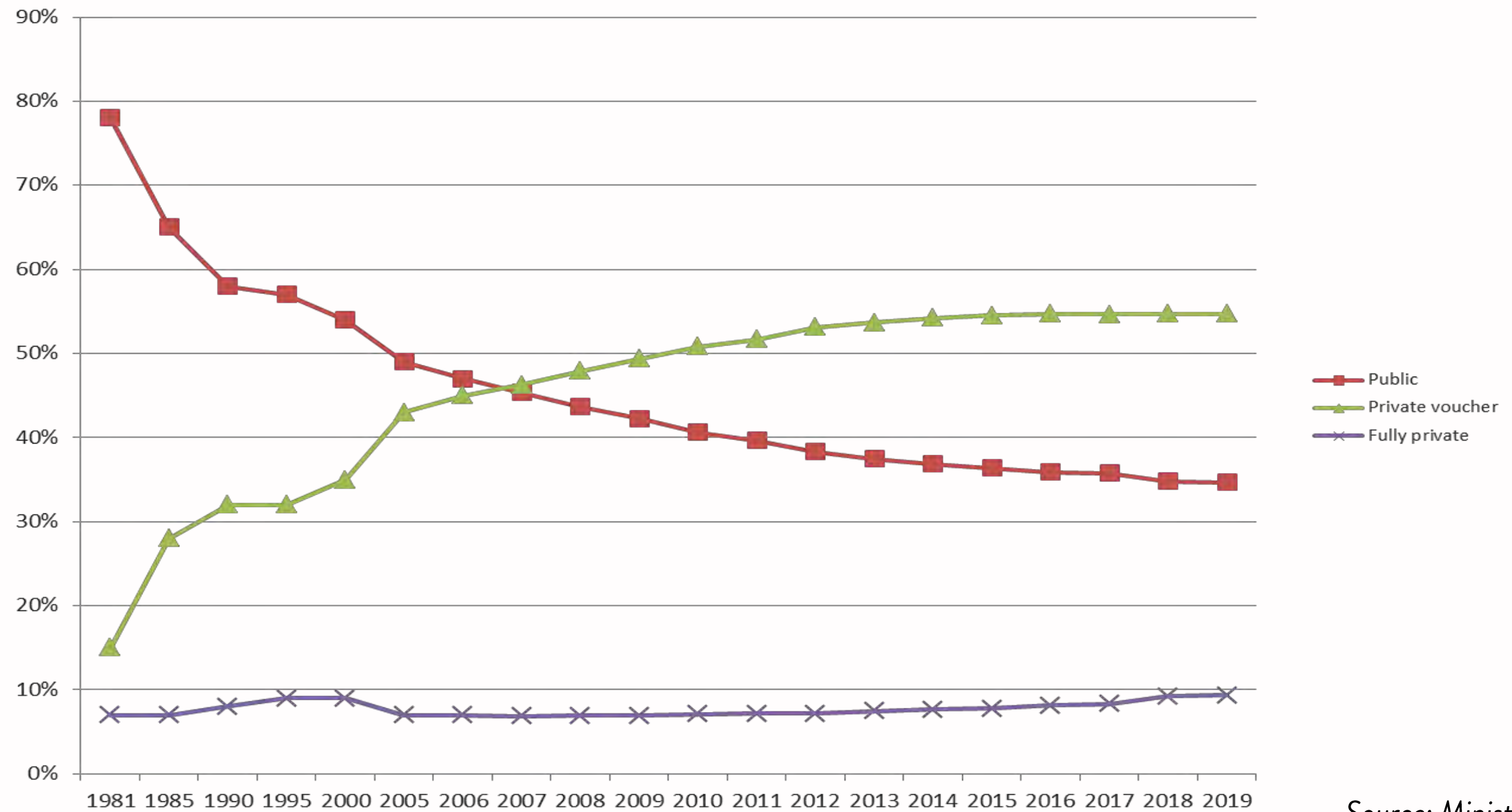
## Copayment

- Public schools could not charge a copayment in elementary education. Since 1993 they could do so in secondary education with the agreement of the parents, but very few did.
- Private-voucher schools could be for-profit and since 1993 charge copayment.

## Teachers labor regime

- Period 1981-91  
Deregulation of the teaching profession (Labor Code).
- Post 1991
  - Public schools  
Teacher Statute
  - Private-voucher  
schools Labor  
Code.

# Evolution of enrollment between schools sectors (1981-2019)



Source: Ministerio de Educación.

# Education Policies 1990-2006: Market and State



1980's

Educational policy did not focus on the school and its needs.



1990's

School improvement programs begin with a significant increase in resources.

- 900 schools program (1990).
- Elementary education improvement program (1992-1997).
- Secondary education improvement program (1995-2000).



1995

Results of the SIMCE national standardized test were made public.



1996

Curricular reform.

- Elementary: 1996.
- Secondary: 1998.
- Preschool: 2000.



# Education Policies 1990-2006: Market and State



1996

Full day school increased the hours students spend at school.



1996-97

Several measures to strengthen the teaching profession.



1996

Monetary incentives associated with schools and teachers performance.



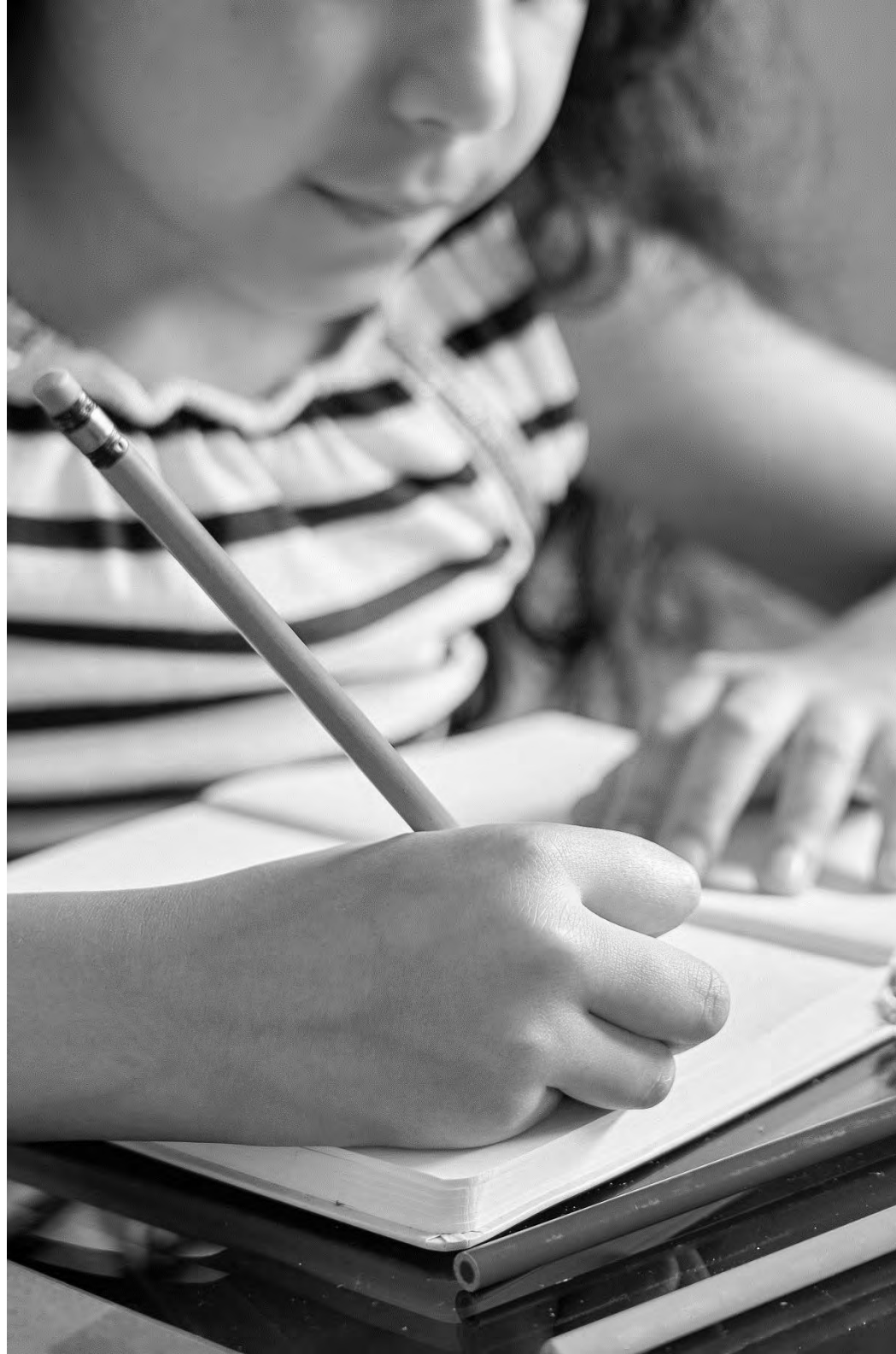
2003

Extension of compulsory education from 8 to 12 years.

# Analysis of the School Choice Policies

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# Equity and Access

- Equity requires that each student has access to the educational resources she or he needs.
- Two elements are relevant:
  - School funding
  - Schools' admission policies

# Do schools that charge tuition have better results?

(Mizala & Saavedra, 2014)

## What we did

- We evaluated the impact of copayments on educational results using the standardized SIMCE tests for 4th (2005) and 8th grade (2009) taken by the same students.
- To minimize selection bias, we used estimation methods based on propensity scores (assuming selection on observables): propensity score weighting (PSW) and propensity score weighted regression (double robust).

## What we found

- We found that copayments have **no effect** on the Language test results and has a positive effect on the Math test only if the school has been charging monthly tuition higher than Ch\$8,000 (US\$16) and for more than 9 years.
- Its effect on students' academic outcomes operates mainly through the homogenization of the classroom.



# The Stratification of Educational Achievement

(Mizala & Torche, 2012)

- ❑ We analyzed the socioeconomic distribution of achievement within and between schools across school sectors. We used a census of 4th and 8th graders and a multilevel methodology, accounting for unobserved selectivity into school sector.
- ❑ We found that the association between individual SES and test scores was slightly stronger in the private-voucher than in the public sector.
- ❑ But the association between the school's aggregate family SES and test scores (net of students' SES) was much greater in the private-voucher sector than in the public one, resulting in a striking SES stratification of test scores.
  - a 1-unit increase in average school SES implied an improvement in tests scores of 10% of one SD in the public sector and 40% of one SD in the private-voucher sector.

# The Stratification of Educational Achievement

(Mizala & Torche, 2012)

- That is, the educational achievement of a child attending the private-voucher sector depended much more on the aggregate SES of her school than on her own family's SES.
- Also, while the private-voucher sector served a diverse population, each voucher school was socioeconomically homogeneous (some appear to concentrate in better-off families, while others focused on poor communities).
- The SES variance between-schools was 47% in the private-voucher sector and 24% in the public sector.
- This was explained by a system where **parents** chose schools according to their willingness and capacity to pay and the SIMCE tests scores of the **school**; and schools had incentives to select higher SES and able students, rather than to increase their value added.

# A Segmented educational system

The school where a student is enrolled gives a lot of information about her family's SES  
Student level regressions

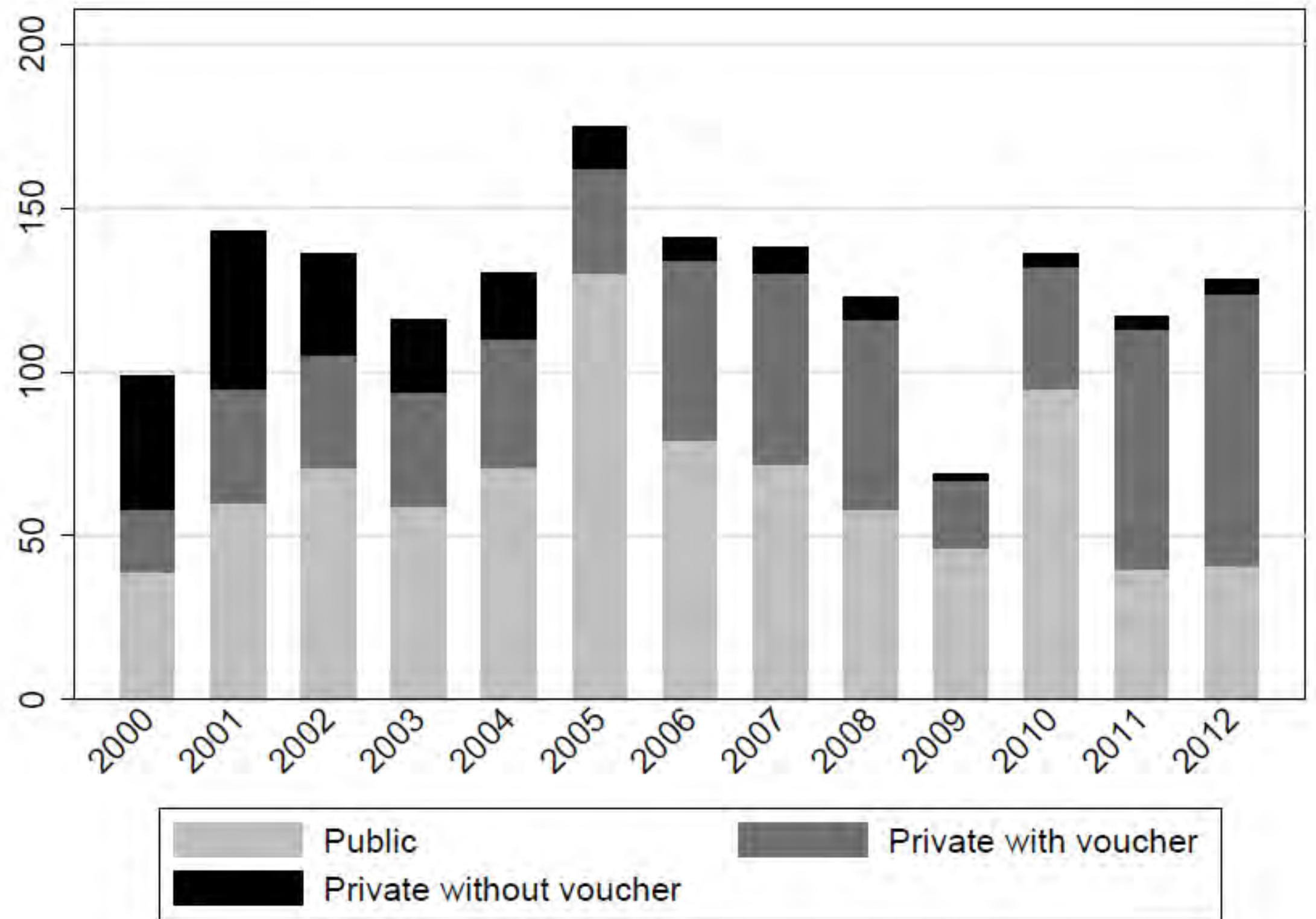
	4th grade	8th grade	10th grade
Dependent variable: <b>SIMCE Language score</b>			
School Dummies	7923	5805	2660
N	230160	227688	227207
R <sup>2</sup>	0.22	0.28	0.37
Dependent variable: <b>Mothers' schooling</b>			
School Dummies	7822	5470	2629
N	211475	187858	186349
R <sup>2</sup>	0.44	0.42	0.38
Dependent variable: <b>Fathers' schooling</b>			
School Dummies	7789	5467	2629
fa	204450	172879	188903
R <sup>2</sup>	0.44	0.44	0.40
Dependent variable: <b>Household income</b>			
School Dummies	7811	5471	2630
N	211148	193244	196160
R <sup>2</sup>	0.69	0.67	0.62

# The Chilean educational market until 2015 had little regulation and few barriers to entry.

- High flexibility to open new private schools with government subsidy (most of them for profit).
- Chile has had an impressive school turnover, between 2002 and 2011, 1,282 schools exited the market and about 2,350 entered the market.
- During the 2000-2012 period, 127 schools closed each year, a destruction rate of 1.2% (similar to the average turnover rates of middle and small-sized industries).
- An unintended consequence of the Chilean educational system driven by market dynamics.



# Annual exit of schools by type of administration



# How these closures affect educational outcomes?

(Hojman, Grau and Mizala, 2017)

## What we did

- We use a large panel of individual student administrative data for the period 2002-12, to estimate the causal impact of unplanned school closure on grade repetition and high-school dropout rates.
- We use a rigorous matching design and an instrumental variable approach to solve potential bias.

## What we found

- School closure increases the probability of high-school dropout between 46% and 62%.
- School closure implies a 78% increase in the probability of grade repetition in fifth grade.

# Advances in regulation, equity and quality

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# Student Movement 2006 “Movimiento Pingüino”



After the student movement of 2006 the need for greater regulation and quality began to be discussed

(Presidential Advisory Council 2006).

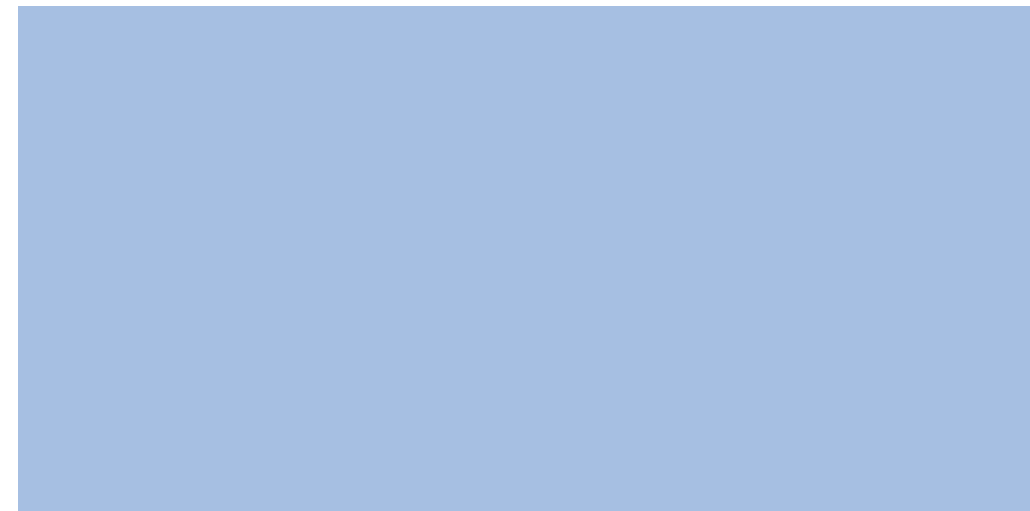




Later,

The new student movement of 2011

and the evidence from academic studies showing the effects of students' selection, for-profit schools and copayments pave the way for further reforms.



# Advances in regulation, equity and quality

## Equity

- 2008 Preferential School Subsidy Law (SEP)
- 2015 Inclusion Law

## Greater Regulation

(New Architecture of the Education System )

- 2009 General Education Law (LGE)
- 2011 Creation of the Education Quality Agency
- 2011 Creation of the Superintendence of School Education
- 2014 Creation of the Preschool Education Intendancy

## Quality

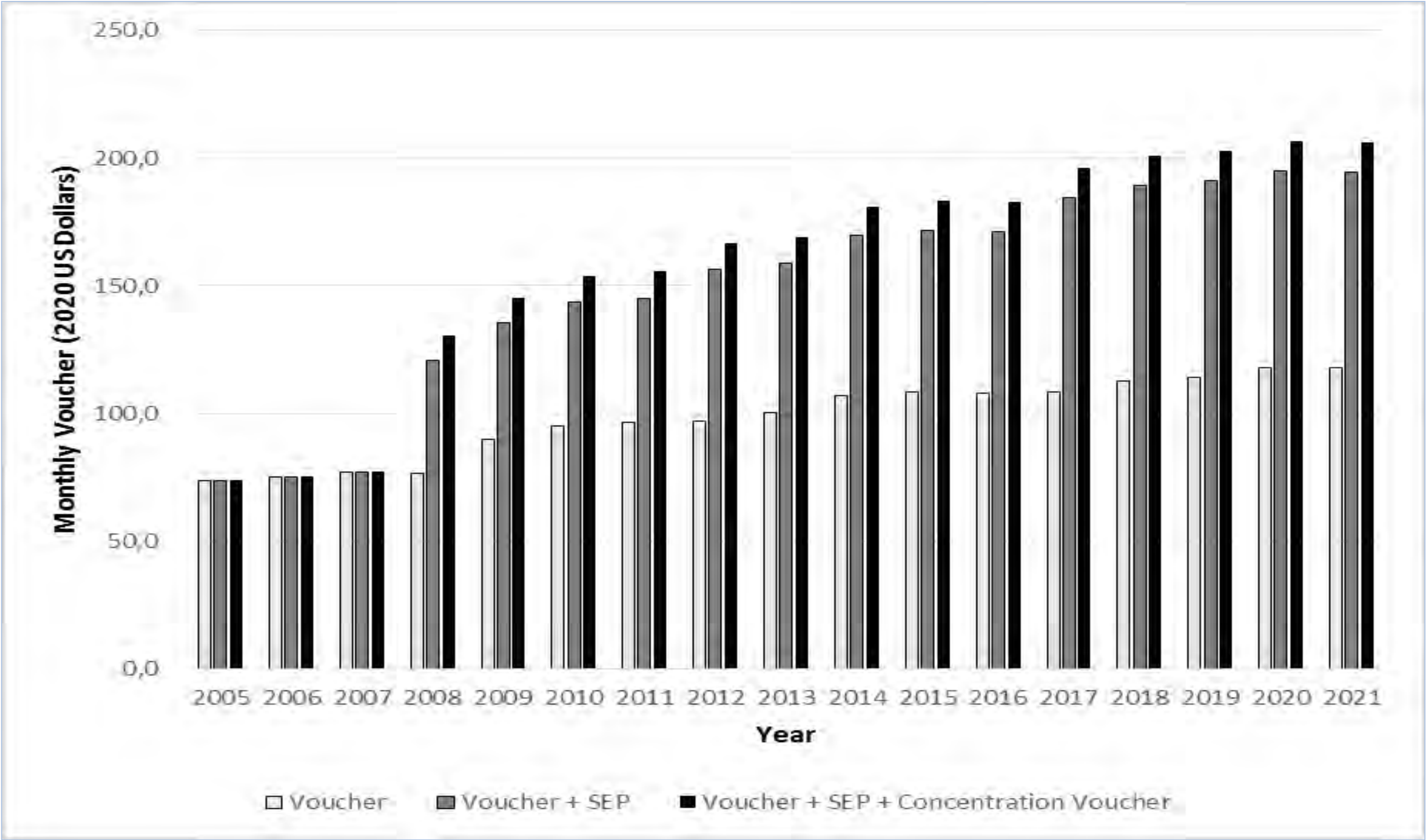
- 2016 Teacher Professional Development Law
- 2017 New Public Education (de-municipalization)

# Preferential School Subsidy Law 2008

- It adjusted the amount of the voucher by the poverty level of the student and the proportion of poor students attending the school
- It covers the poorest 40% of students from pre-Kinder to 12th grade (since 2016).
- Schools receive between 58% and 68% additional funding per priority student, depending on the concentration of them.
- It was the only subsidy conditional on meeting requirements, institutional goals and school results.
- Schools have different degrees of autonomy to expend the extra resources, depending on their educational results.
- Schools that choose to participate must implement a School Improvement Program.
- Its operation has been strengthened and made more flexible.



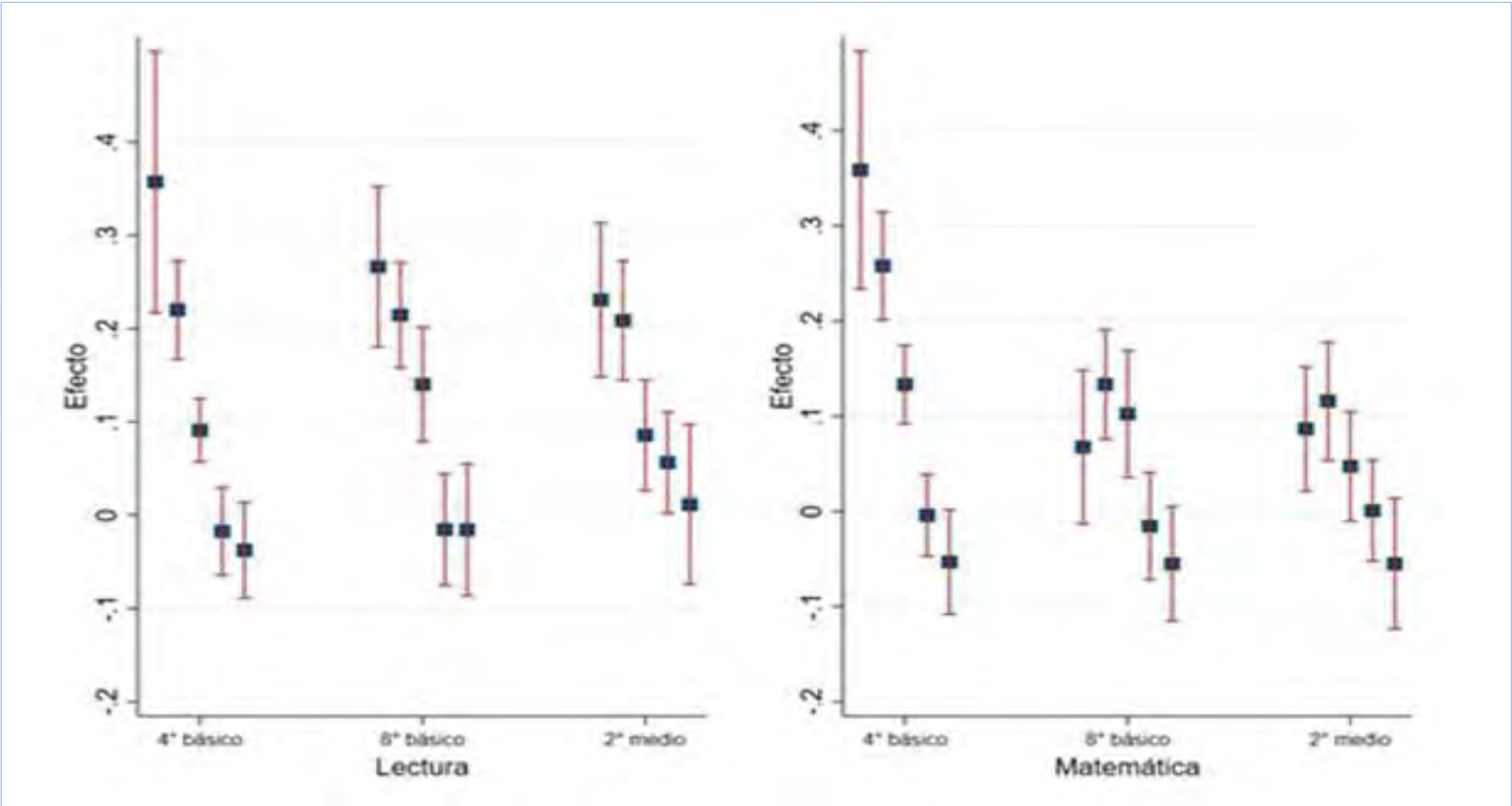
# Value of subsidy and Preferential School Subsidy 2005-2021



# Evaluation of the effects of Pref. School Subsidy on private voucher schools (Mizala and Torche, 2017, Allende et al, 2021)

- Participation is voluntary.
- The schools enrolled into the program can differ systematically from those that did not enroll.
- Only 52% of private-voucher schools enrolled in 2008. By 2014, 72% of them were enrolled in the program. Phased-in entry can be used to evaluate the effect of the reform on students' test scores.
- We create a panel of private-voucher schools and use a fixed effects model at the school level and year.
- The only variation we use to identify the effect of interest is the variation of SIMCE results of 4th, 8th and 10th grade within the school over time. Each school serves as its own control.

# Effect of SEP on Math and Reading test scores by grade and school SES quintile. Private Voucher Schools (standard deviations)



The effect is stronger on the more disadvantaged schools, reducing the socioeconomic gap in educational achievement

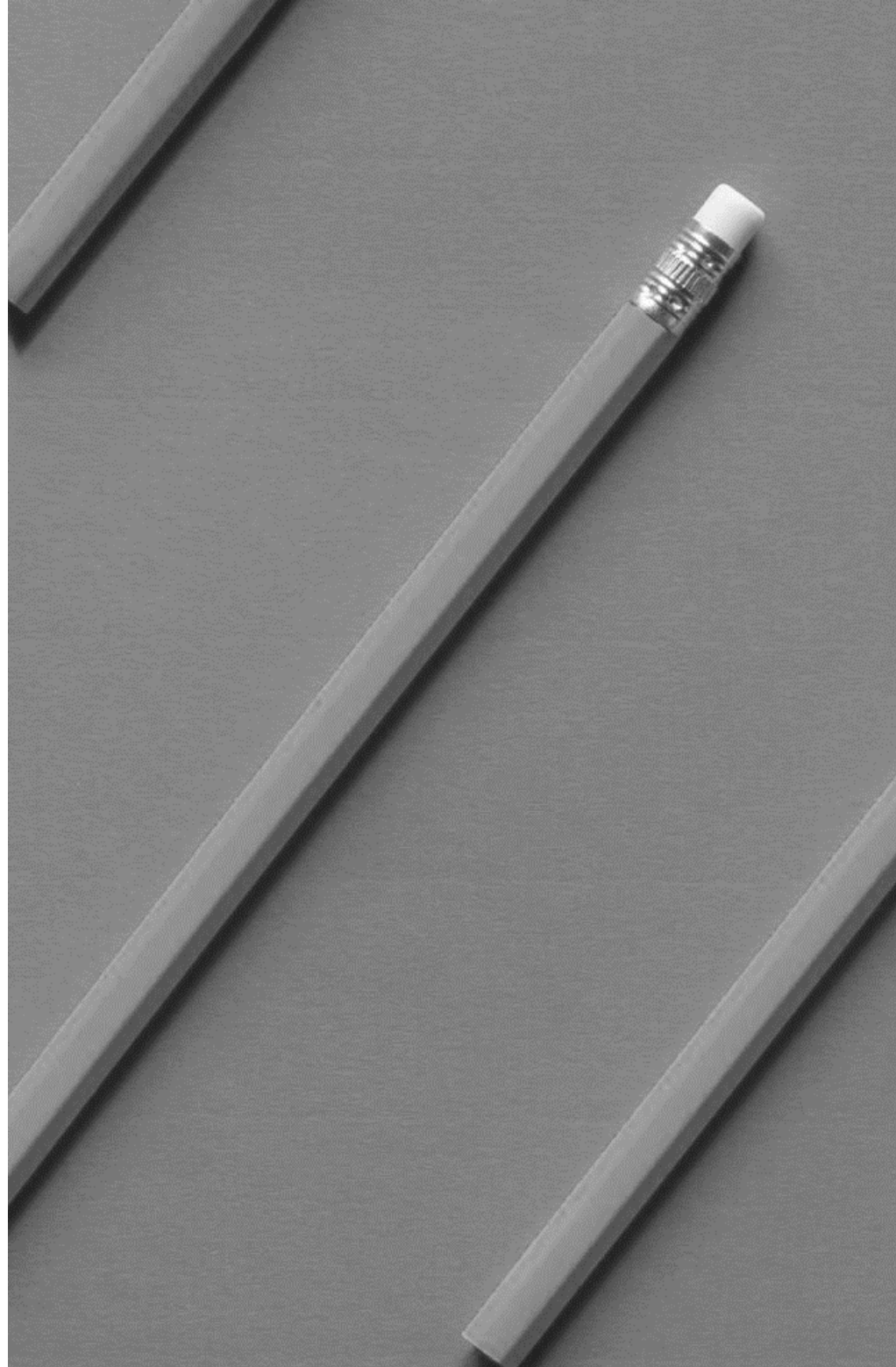
Source: Allende, Valenzuela, Mizala and Fuenzalida (2021)



# The Inclusion Law (2015)

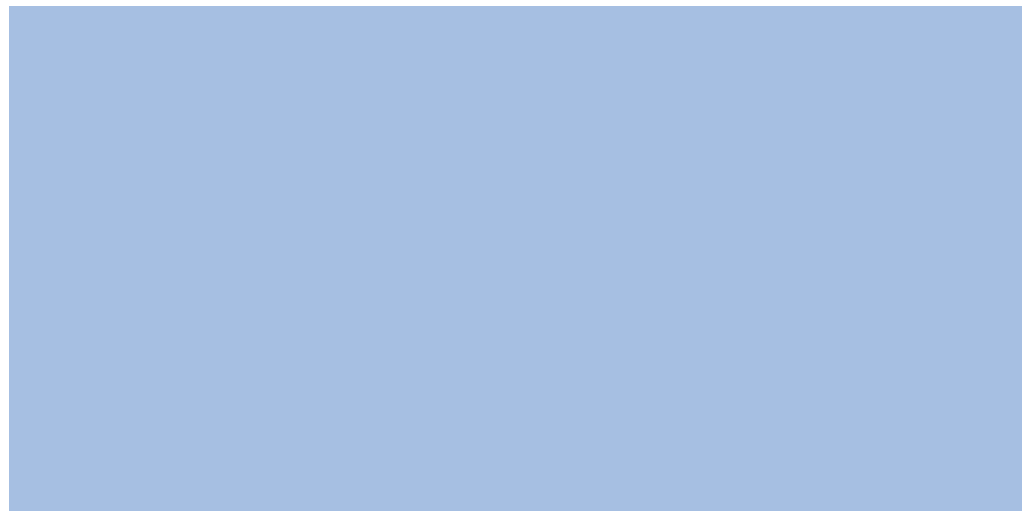
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## Inclusion Law:

- Promise: improve the quality of education and move from an educational system that reproduces inequalities to an inclusive one that contributes to reducing opportunity gaps.
- Inclusion Law: ends (gradually) copayment, students' selection and for profit-schools with public resources.



# Elimination of Copayments

- ❑ Eliminates copayments by replacing them with:
  - SEP expanded to quintiles 3 and 4.
  - Increase government subsidy for schools without copayment.
  - Future increases in government subsidy.
- ❑ Aims that schools gradually adjust over time, change their social composition and increase their resources.
- ❑ Considers a transition period since the changes in social composition start mainly in PK and Kindergarten.
- ❑ Involves a reasonable fiscal cost (approx. US\$1.1 billion).



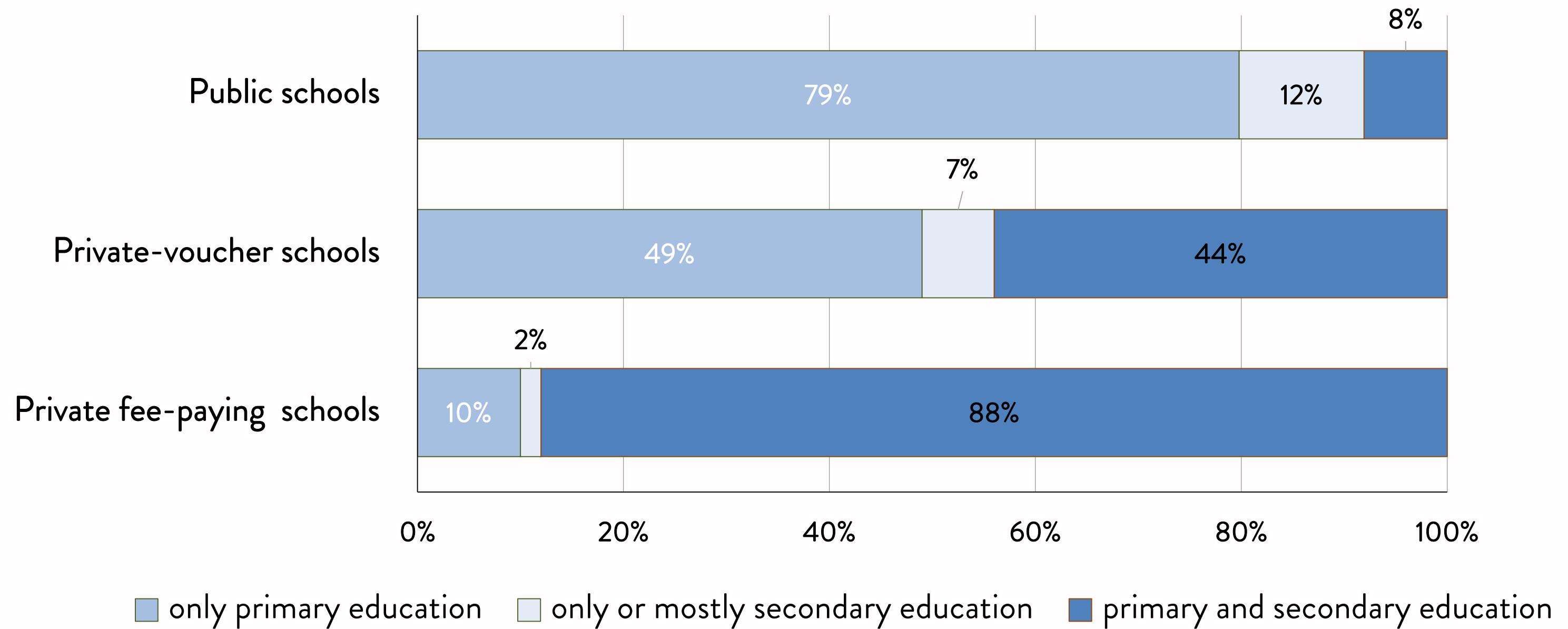
# Student Selection Ends: New School Admission System

- The Inclusion Law eliminates arbitrary selection by schools that receive public funding.
- Creates a centralized admission system. A coordinating agent, MINEDUC, determines in a non-discriminatory way the allocation of students in over-demanded schools.
- Parents express their preferences and students are assigned to the schools trying to maximize their preferences, the only priorities are applicants with siblings in the schools or children of school employees.
- System began in Magallanes Region (2017); then, 4 regions were added and since 2020 it includes all the regions of the country.
- In 2021, 74% of students were assigned to one of their top 3 choices and 55% were assigned to their first choice.

# Policy effects: What effects can be observed ?

- The New School Admission System has made visible the challenges still facing our educational system.
- Social segregation is not changing fast (Villarroel, 2021, 1°EM).
- Social segregation is hard to reverse (most of it is between private-voucher schools, PISA 2018). 15% of private-voucher schools, which make up about 35% of their enrollment, still charge copayments.
- Greater demand to enter the most prestigious schools that are still selective. 74% of applicants (2020 registration process) applied in the first place to a school with excess demand.
- At the same time there is excess supply (2 vacancies for each applicant). It is crucial to plan the educational supply (Amaya et al, 2021).
- Preference for public education has not increase (Castillo, 2021). This could be explained in part by the educational levels offered by public schools (Canals et al, 2021).

# Education level by school sectors (2022)

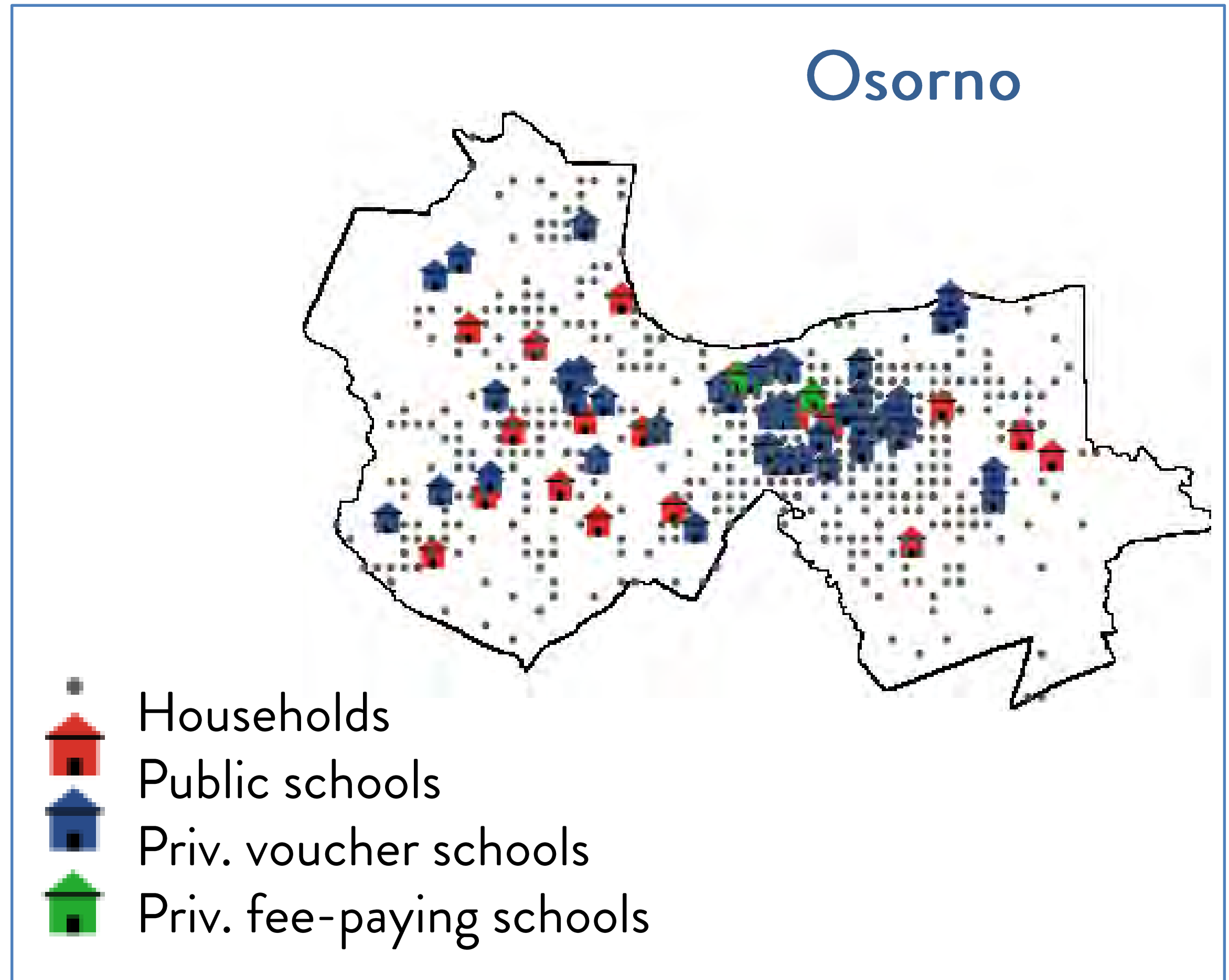




- ❑ We analyze the mechanisms driving the decline in public school enrollment using an Agent Based Model (ABM).
- ❑ We implemented an ABM representing a city's households and schools. Each iteration represents a school year. The ABM simulates the period (2004-2016).
- ❑ We used students, school and block data from 4 Chilean cities to calibrate the model.
- ❑ We compared the real-time trends between simulated data (baseline scenario) and real data for each city.
- ❑ We simulate different experiments to assess what could have happened under different conditions.

Decreased enrollment in public schools in Chile:  
Using Agent-Based Models (ABM) to understand temporal trends  
(Canals, Canessa, Maroulis, Mizala, Chaigneau, 2021)

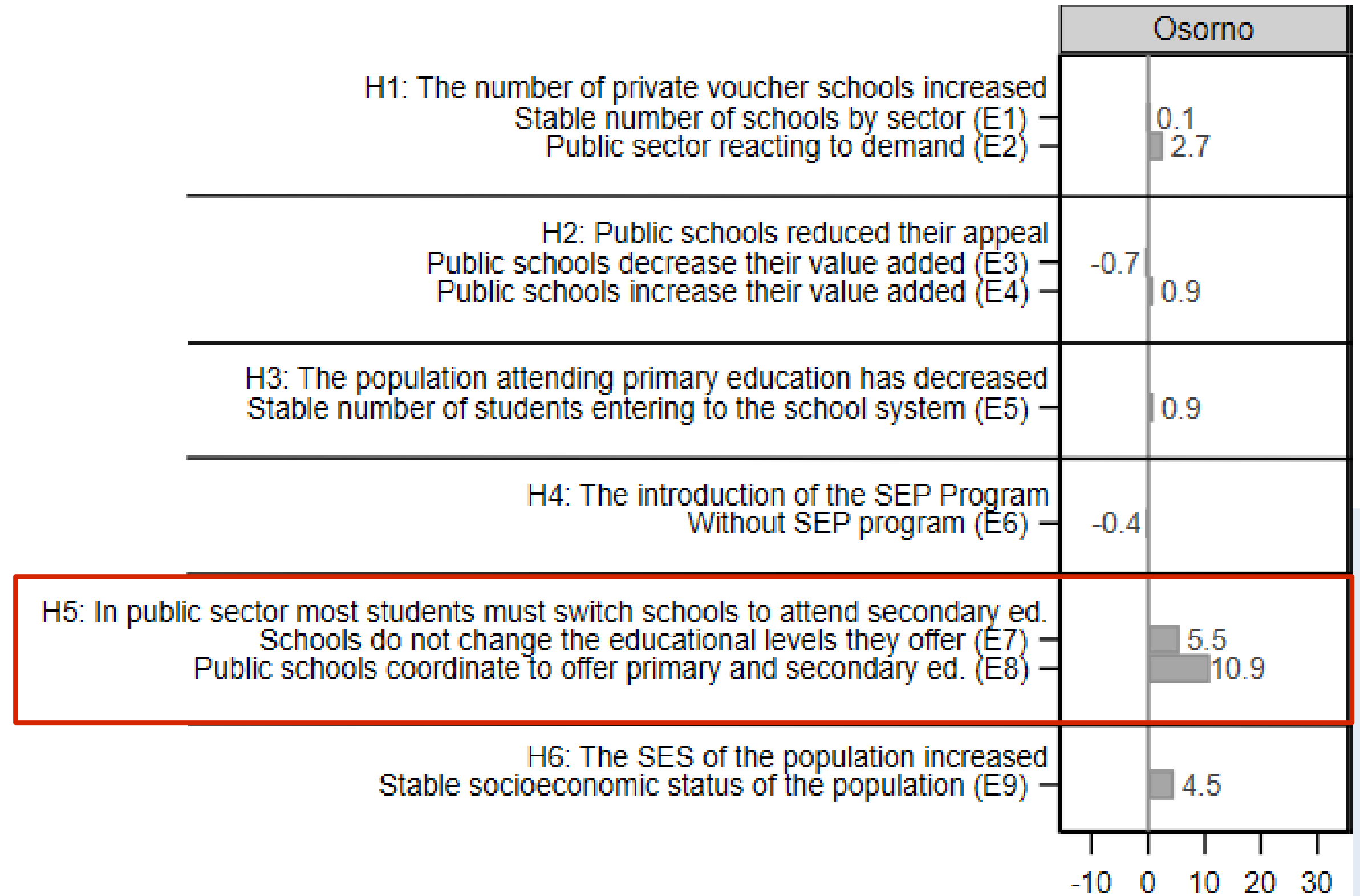
The ABM model  
geographically  
represents students  
and schools



# Results: Difference between public enrollment in 2016 and 2004. Experiments comparison

The differences in the educational levels offered by schools of different sectors (Hypothesis H5) seem to be the main mechanism behind the decrease in public enrollment.

Impact in public enrollment decrease (2004-2016)  
Comparison between experiments



Impact corresponds to the difference between the public enrollment decrease (public enrollment in 2016 – public enrollment in 2004) of each experiment and the public enrollment decrease of the baseline scenario

In sum

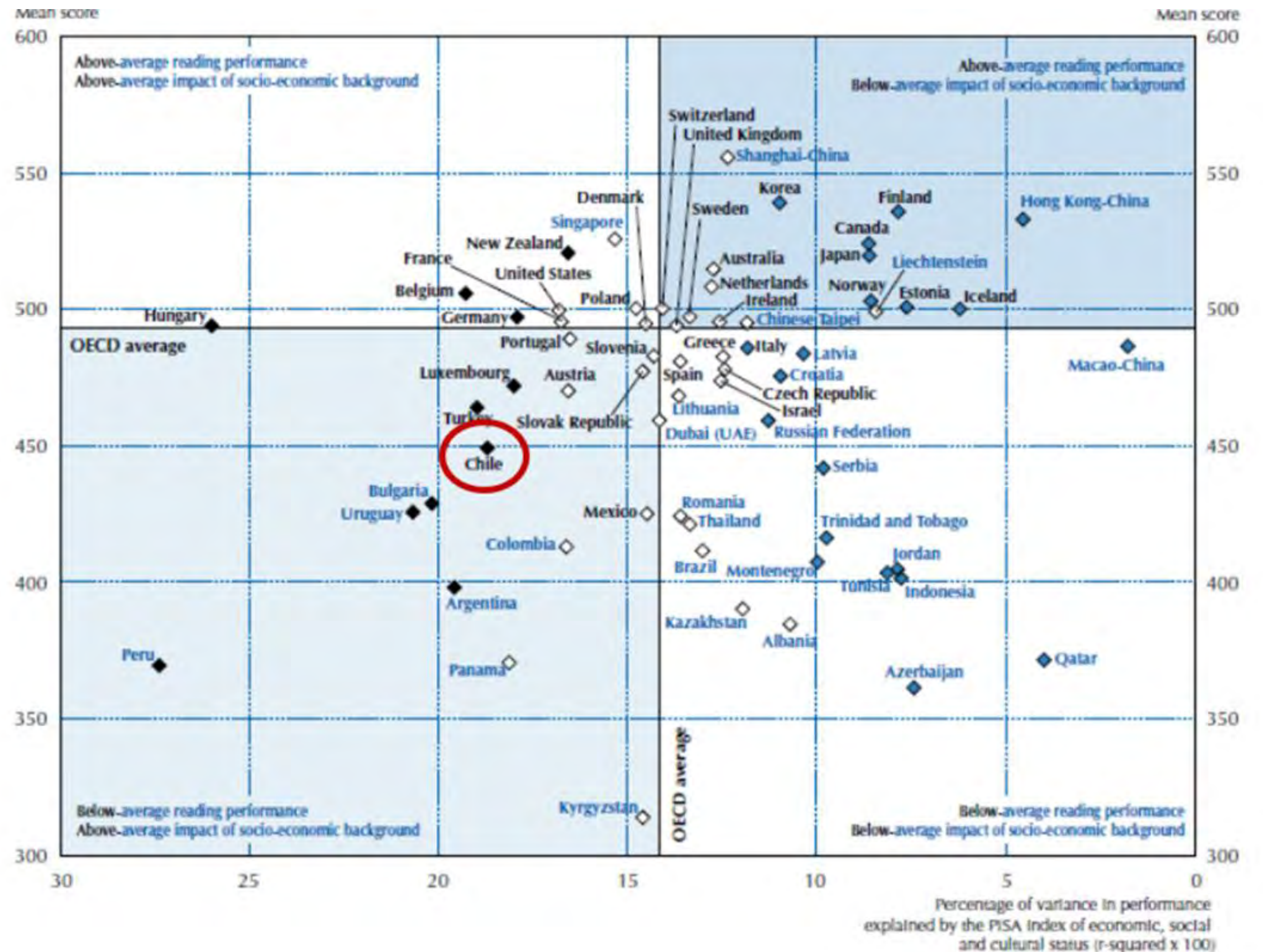
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# Strength of the socioeconomic gradient and reading performance, PISA 2009

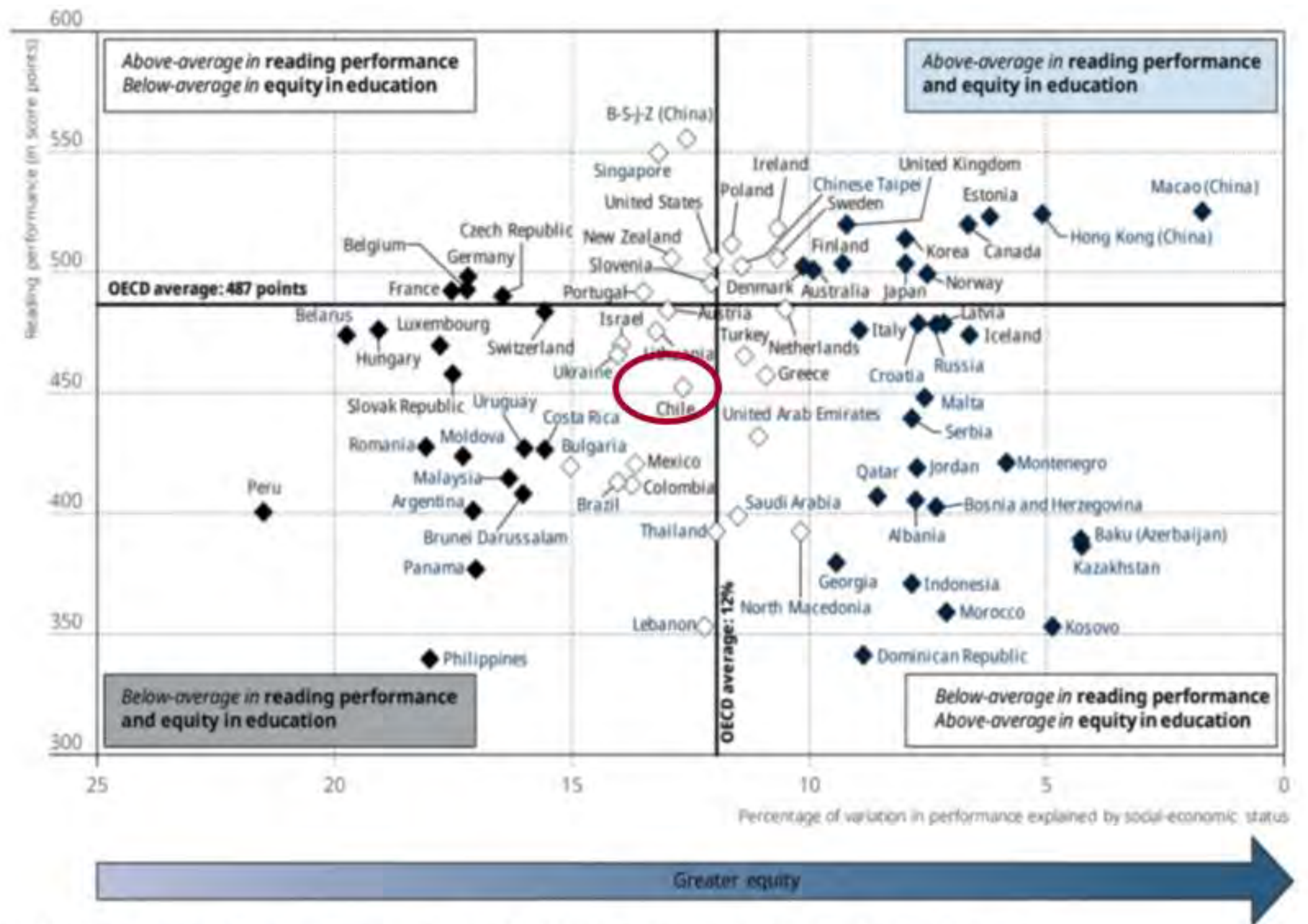
Chile: strength of the relationship between performance and socioeconomic background is above the OECD average impact.





# Strength of the socioeconomic gradient and reading performance, PISA 2018

Chile: strength of the relationship between performance and socioeconomic background is not statistically different from the OECD average impact.

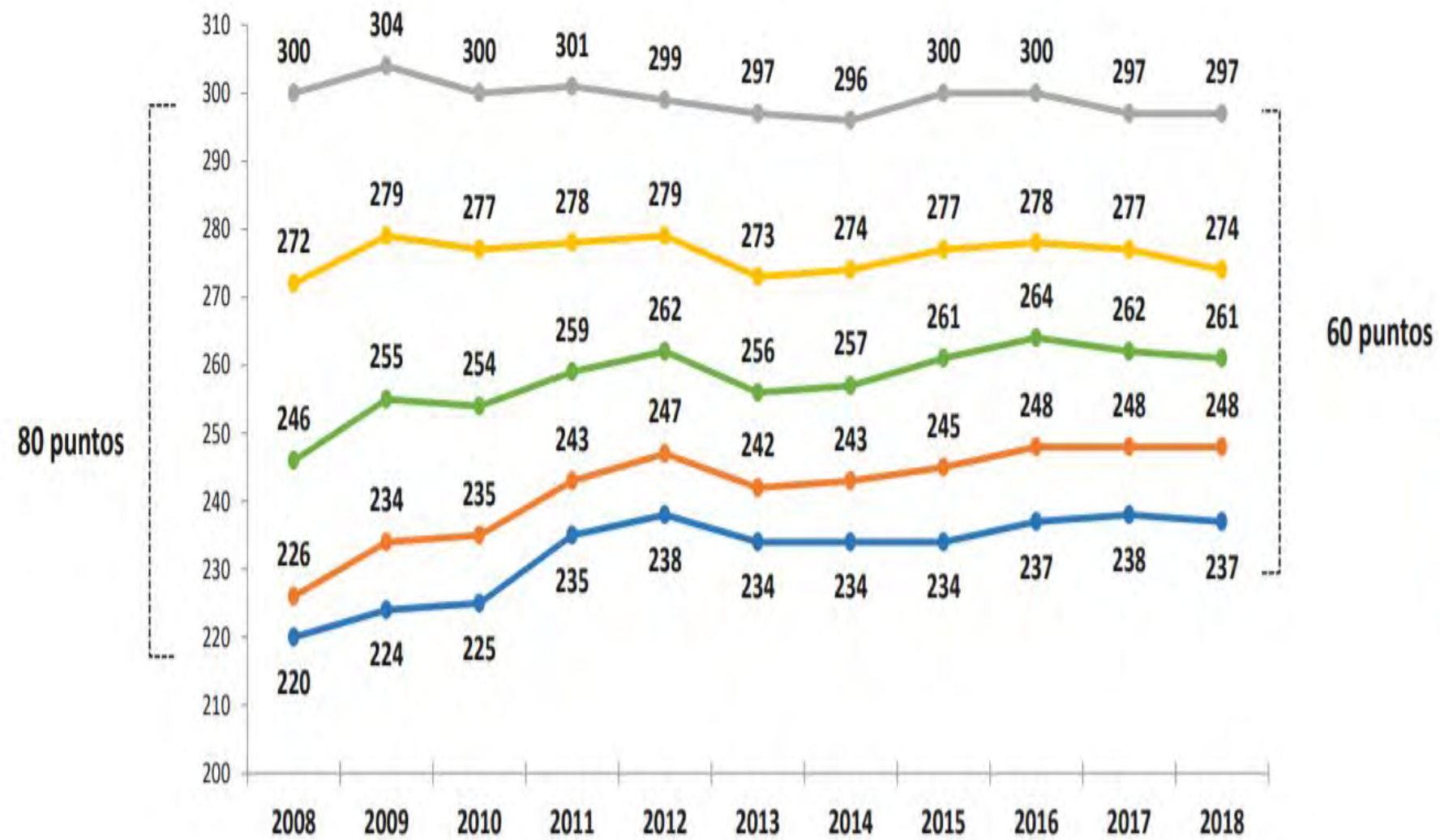


**Note:** Socio-economic status is measured by the PISA index of economic, social and cultural status.

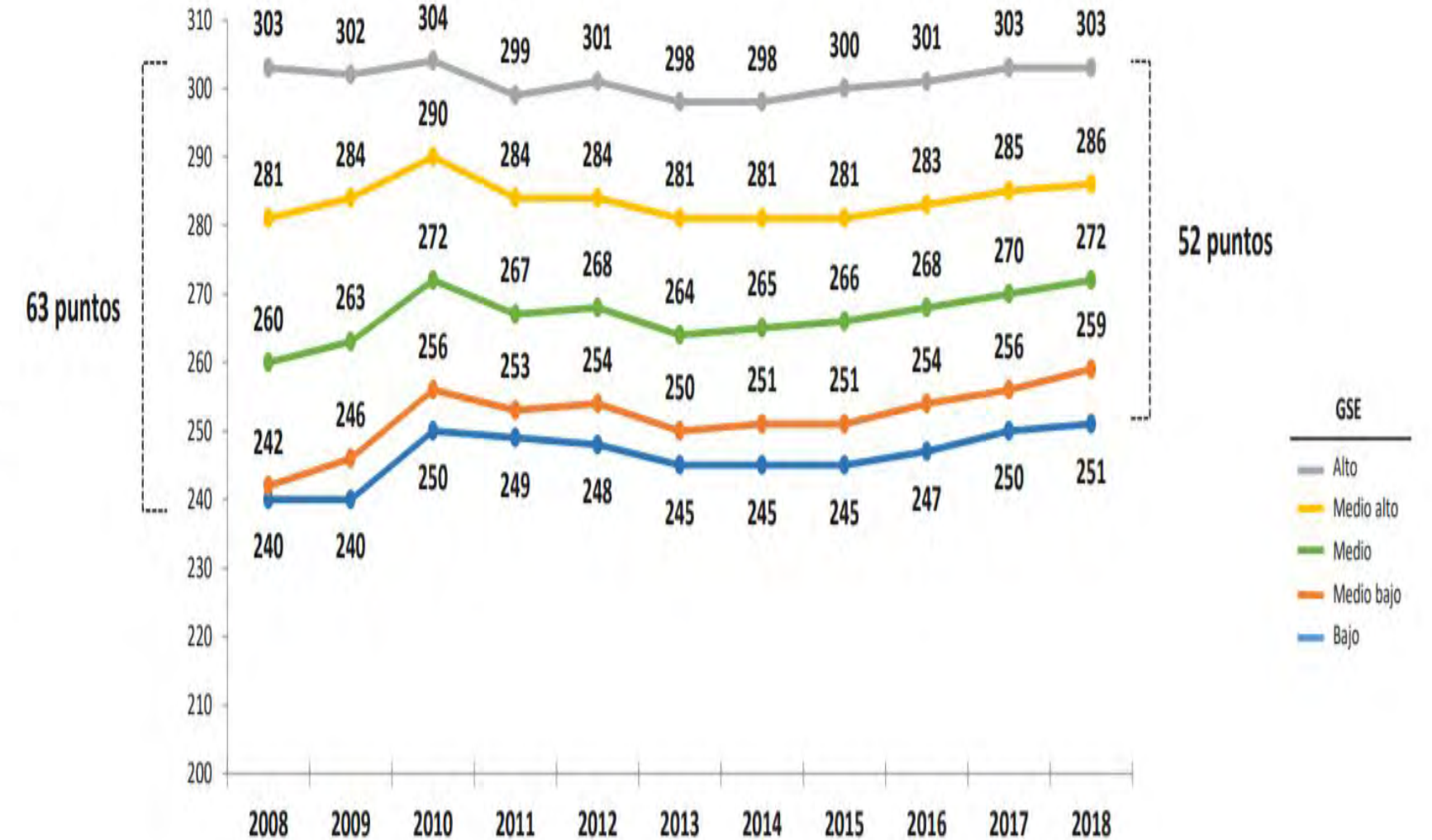
**Source:** OECD, PISA 2018 Database, Table II.B1.2.3.

# However, SES is still relevant in the performance of the schools

## 4th grade SIMCE test Mathematics



## 4th grade SIMCE test Language





## In sum:

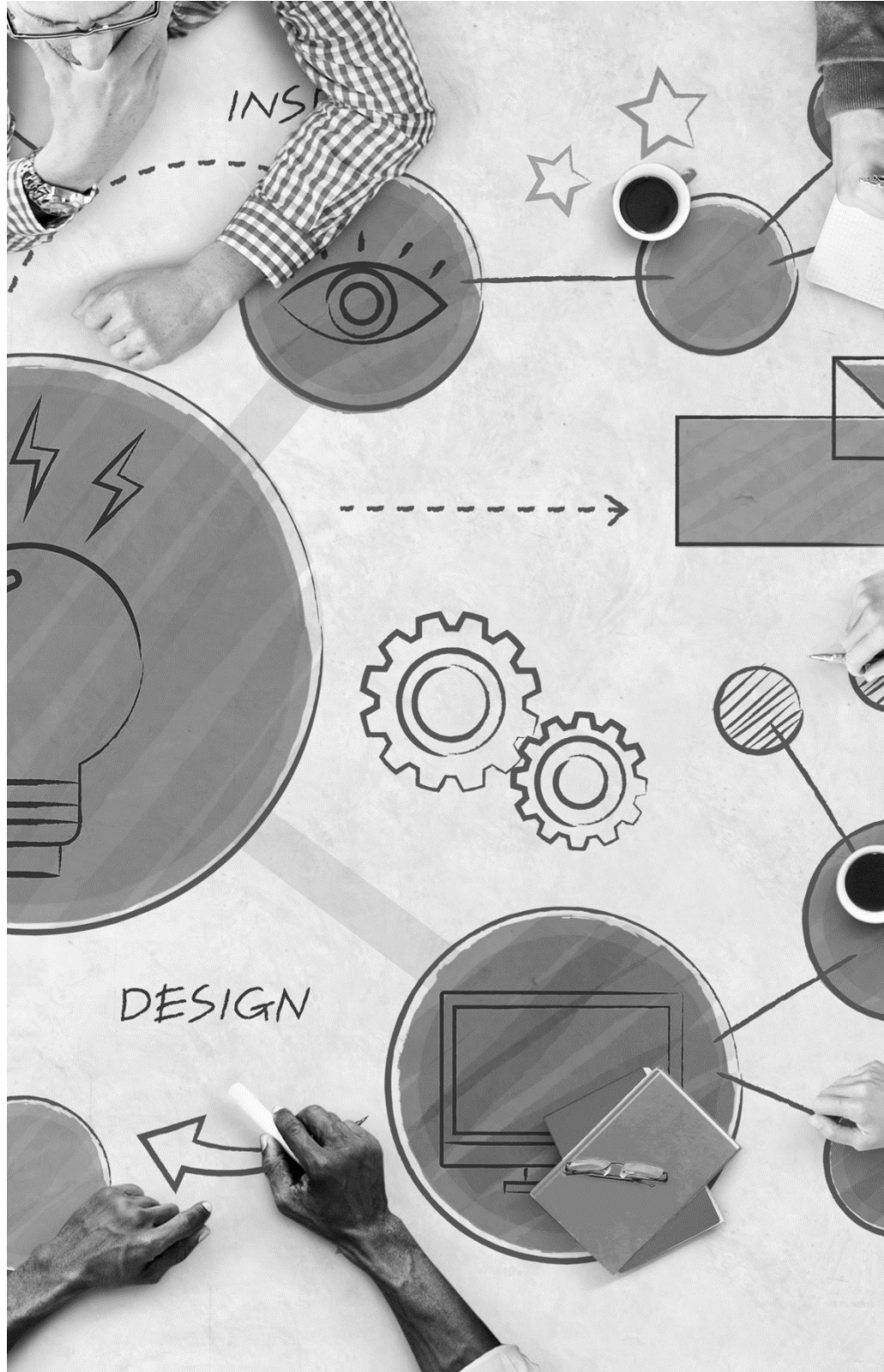
Despite the relevant number of policies aimed at Equity and Inclusion, progress is still not enough.

Long periods of time are required to observe effective changes (e.g., families choose a school for an entire educational cycle); it requires the development of new skills and abilities (of school leaders and teachers); and involve actors' cultural changes (e.g., beliefs of families, teachers and principals).

It is essential to monitor and evaluate the effects of reforms and policies that are being implemented: analyze their impacts and externalities, understand the reasons for their difficulties, and identify the need for adjustments.

Equity and inclusion build skills that are just as important as achievement in Math or Language. They allow students to learn to live together productively and share the values of a pluralistic democracy.





# Where to put the effort for greater equity and inclusion?

- Institutional Reforms (New Public Education)
  - Strengthen public education. Only by strengthening public ed. we will be able to create a system with many schools worthy of being chosen and thus significantly reduce the social segmentation of our educational system and improve its quality.
- Policies and programs aimed at schools in vulnerable areas.
- Policies and programs to support improvement at the classroom level.
- Retention of students in the school system, ensuring positive educational trajectories.

# New Challenges post COVID<sup>19</sup>

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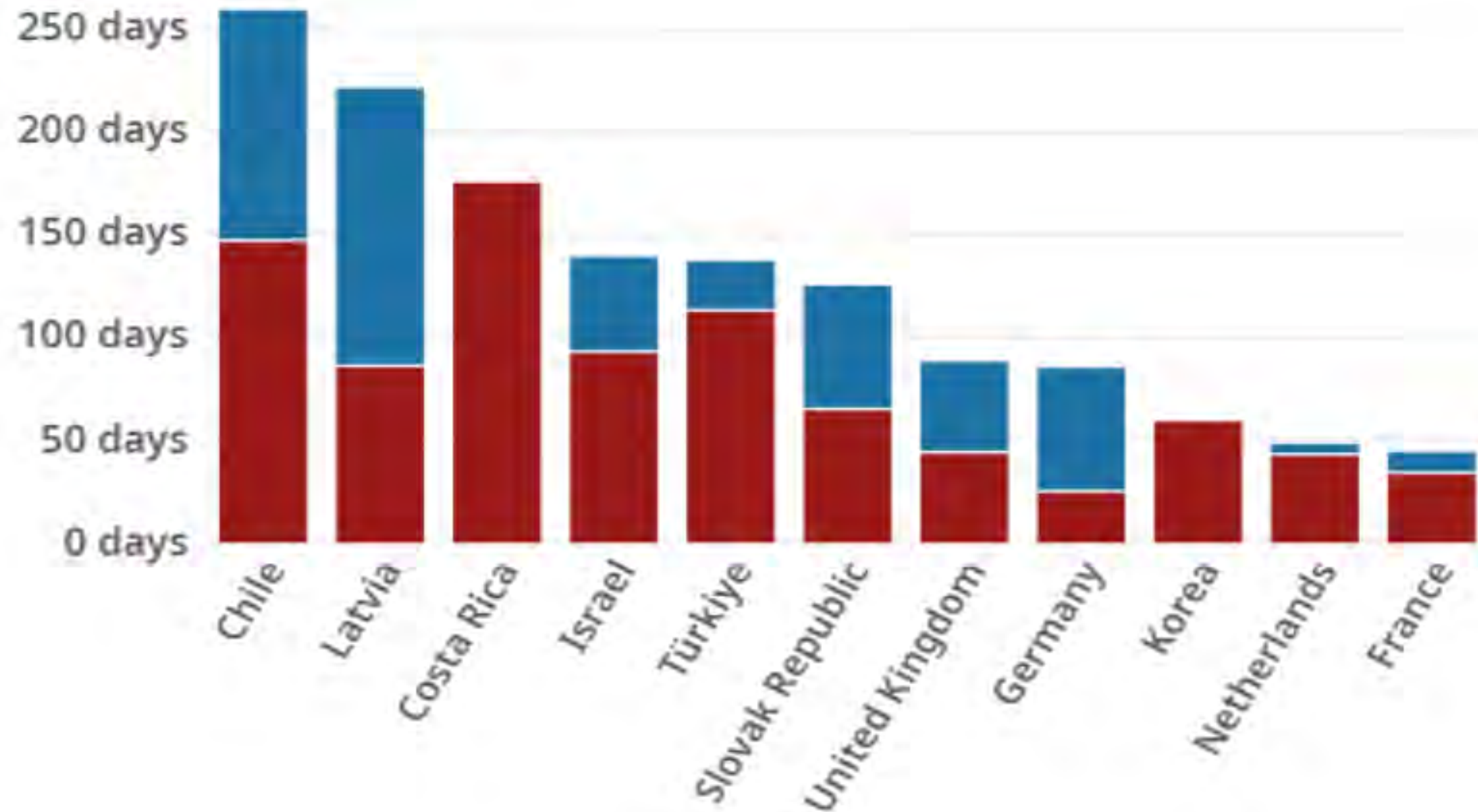




# Chile had schools closed for a long period due to the Covid pandemic

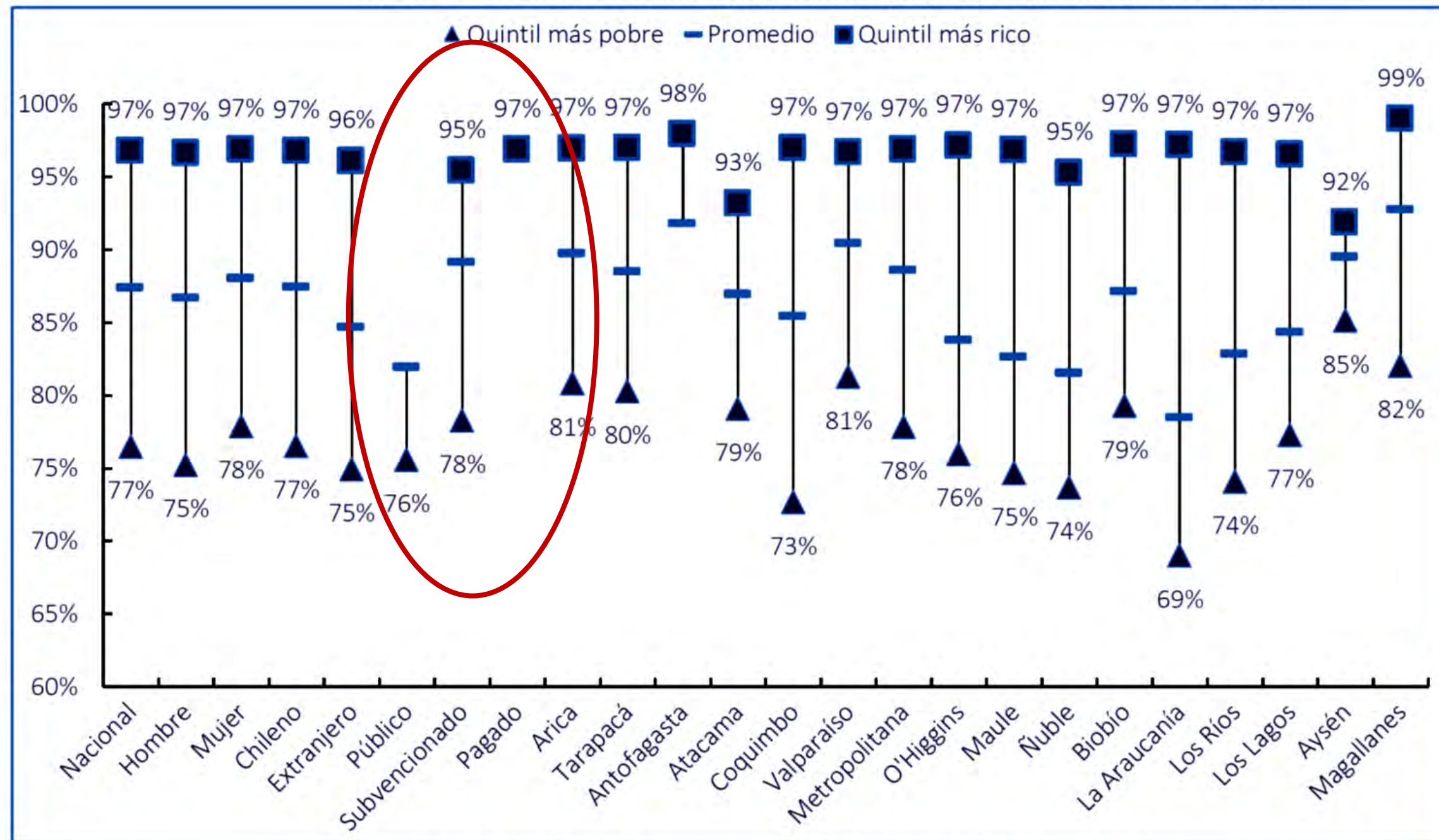
School closures due to COVID-19  
number of days, selected countries

2019/20 2020/21



# Strong asymmetry in access to the devices that made distance education possible

Gráfico 2. Acceso de estudiantes a dispositivos que posibilitan la formación a distancia



Fuente: Ministerio de Educación con base en herramienta de simulación del Banco Mundial.

Nota: Para más detalles se sugiere revisar la tabla A2 en Anexo 1.



- ❑ The pandemic increased existing educational gaps.
- ❑ It is necessary to implement policies capable of reducing the educational gaps generated by the suspension of face-to-face classes.
- ❑ The crucial challenges are:
  - Student attendance: Increase in chronic absenteeism. It is crucial to retain students in schools. There has been a significant deschooling.
  - Pay attention to the socio-emotional needs of students and teachers.
  - Develop educational support strategies that can reverse the negative effects and close the learning gaps.

# Some policies:

- Joint work of civil society, universities and the government to carry out national campaigns aiming to close the gaps, e.g., the campaign For a Chile that reads
- Promote teaching in other formats that allow significant learning.
- Integrate social-emotional development into the curriculum.
- Develop the skills (and not just the content) to which our school system is indebted.
- Abandon disciplinary silos and advance in inter-disciplinarity.
- Emphasize the importance of collaborative work as teachers' professional development.
- Move towards an education system with more tools and resilience, providing both school leaders and teachers with new professional skills.



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