CIMA

Latin America and the Caribbean

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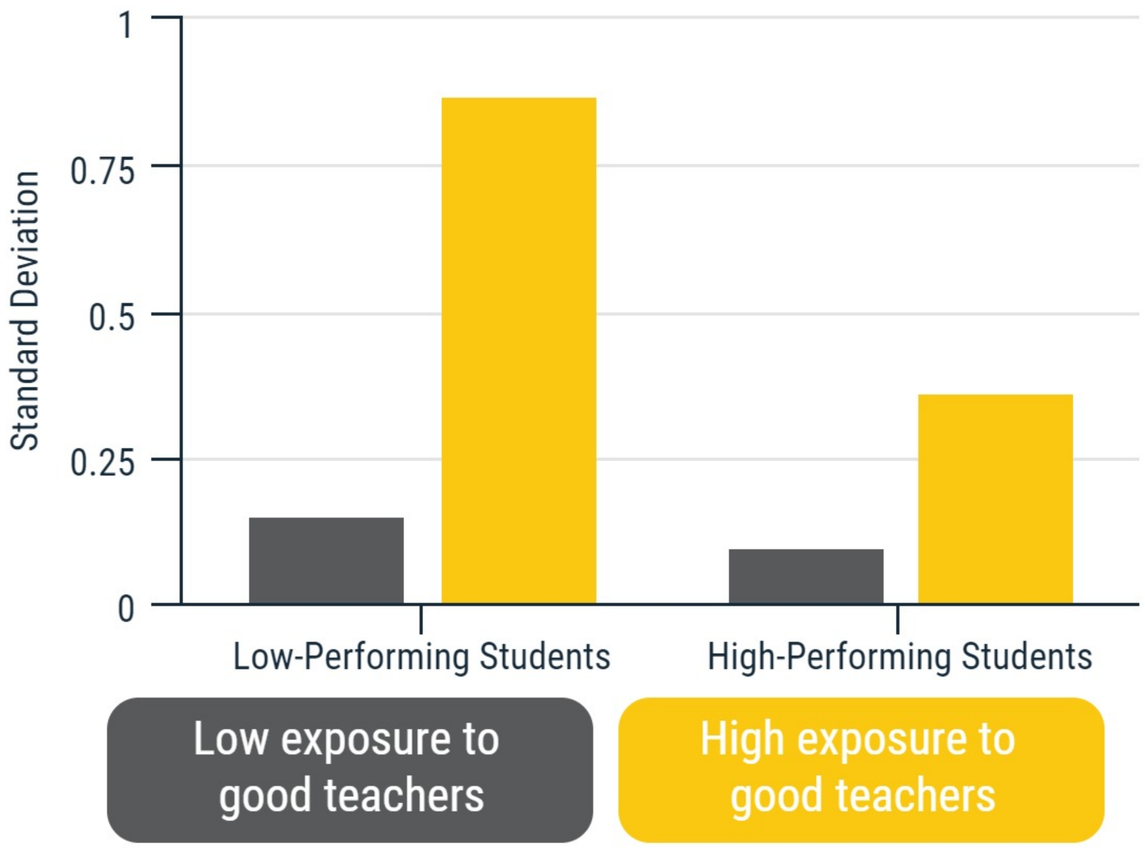
HOW CAN POLICY-MAKERS ADDRESS TEACHER SHORTAGES IN DISADVANTAGED SCHOOLS?

Rural, isolated, and low-performing urban schools that serve disadvantaged students have difficulty attracting and retaining high-quality teachers.

Teachers can help narrow learning achievement gaps

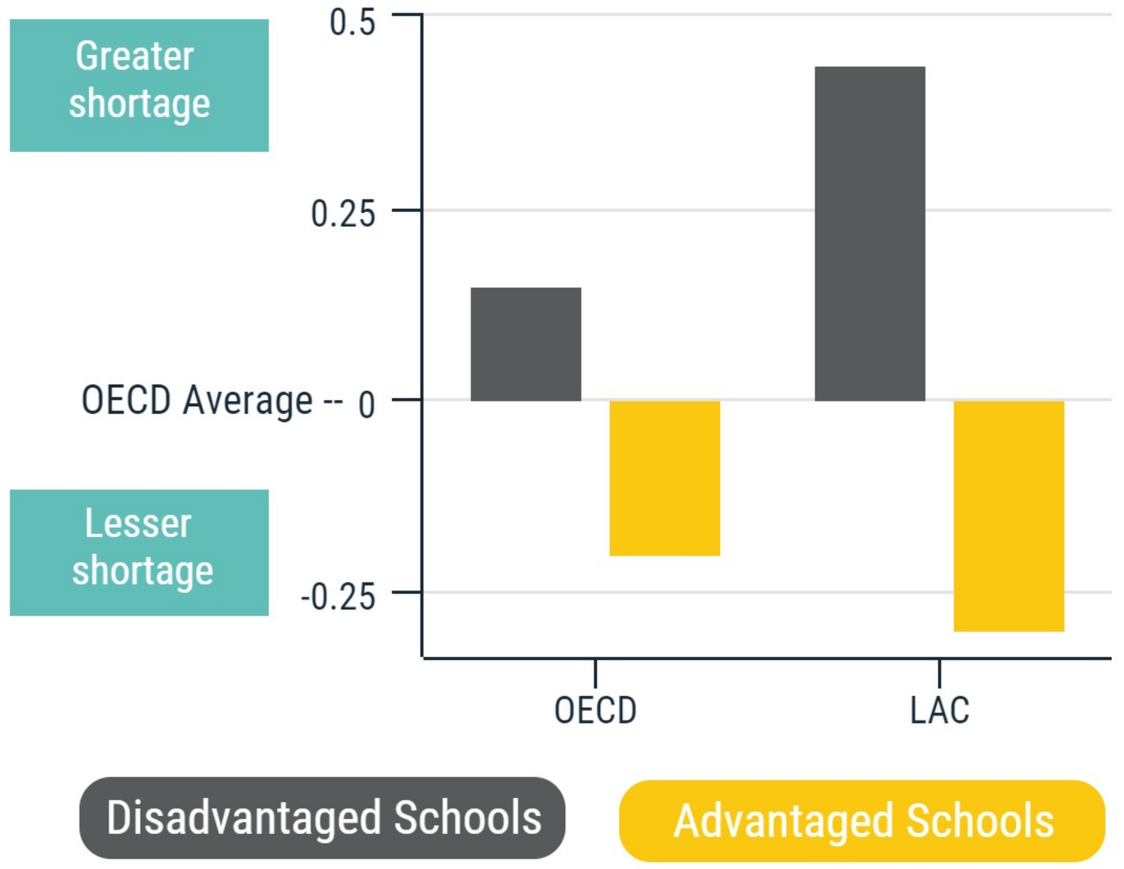
- Students in most countries in Latin America and the Caribbean (LAC) have made significant improvements on international assessments over the past decade.
- However, the proportion of low-achieving students in the region remains high (nearly 50% in science on the PISA 2015 assessment). The percentage of low-income students who are low-achieving is even higher (67%).
- Teachers serve as one of the most important determinants of student performance and can help narrow learning gaps.
- *Cerrando Brechas*, a randomized control trial conducted by the IDB in Ecuador, finds that low-performing students benefit more than twice as much as high-performing students from being taught by good teachers.

IMPACT OF GOOD TEACHERS ON STUDENT ACHIEVEMENT, 2017



Source: Carneiro, Cruz Aguayo & Schady, (2017). Dynamics of Learning in Schools. Presentation at the Centre for European Economic Research (ZEW), Mannheim.

INDEX OF SHORTAGE OF EDUCATIONAL STAFF, PISA 2015



Source: OECD, PISA 2015 Database, Table II.6.15.

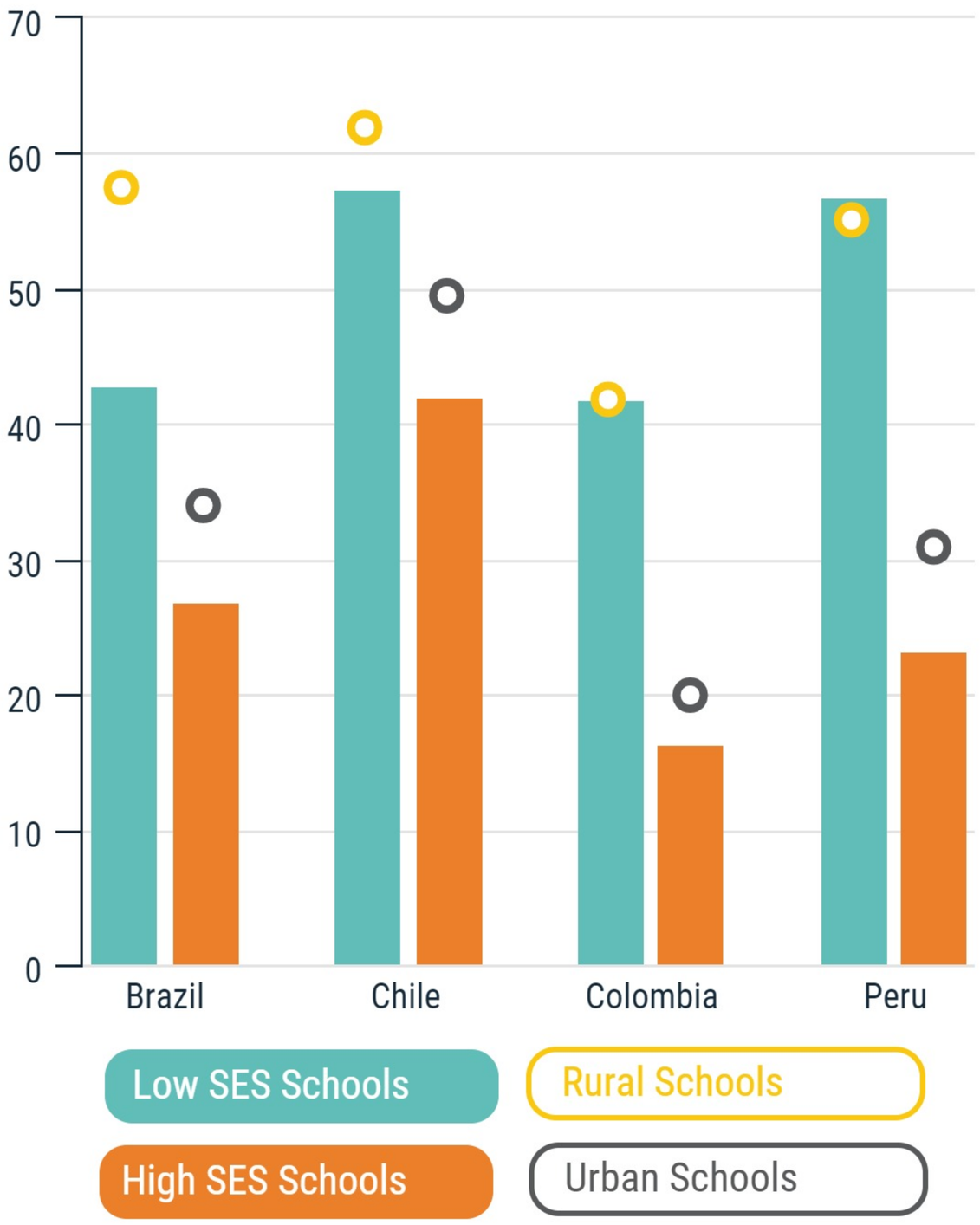
A shortage of qualified teachers hinders instruction in the region

- In PISA 2015, the index of shortage of educational staff summarizes school principals' perceptions about whether their schools' capacities to provide instruction are hindered by a lack of staff or inadequately-qualified staff.
- According to data from PISA 2015, the percentage of students attending schools affected by a shortage of qualified teachers is 27% in Latin America and only 20% on average in OECD countries.
- Socioeconomically disadvantaged schools are more likely to suffer from a shortage of educational staff, and this perceived effect is three times larger in the LAC region than among OECD countries.
- The gap between advantaged and disadvantaged schools regarding shortages of educational staff is two times larger in the LAC region than in OECD countries.

Disadvantaged schools have higher percentages of temporary teachers

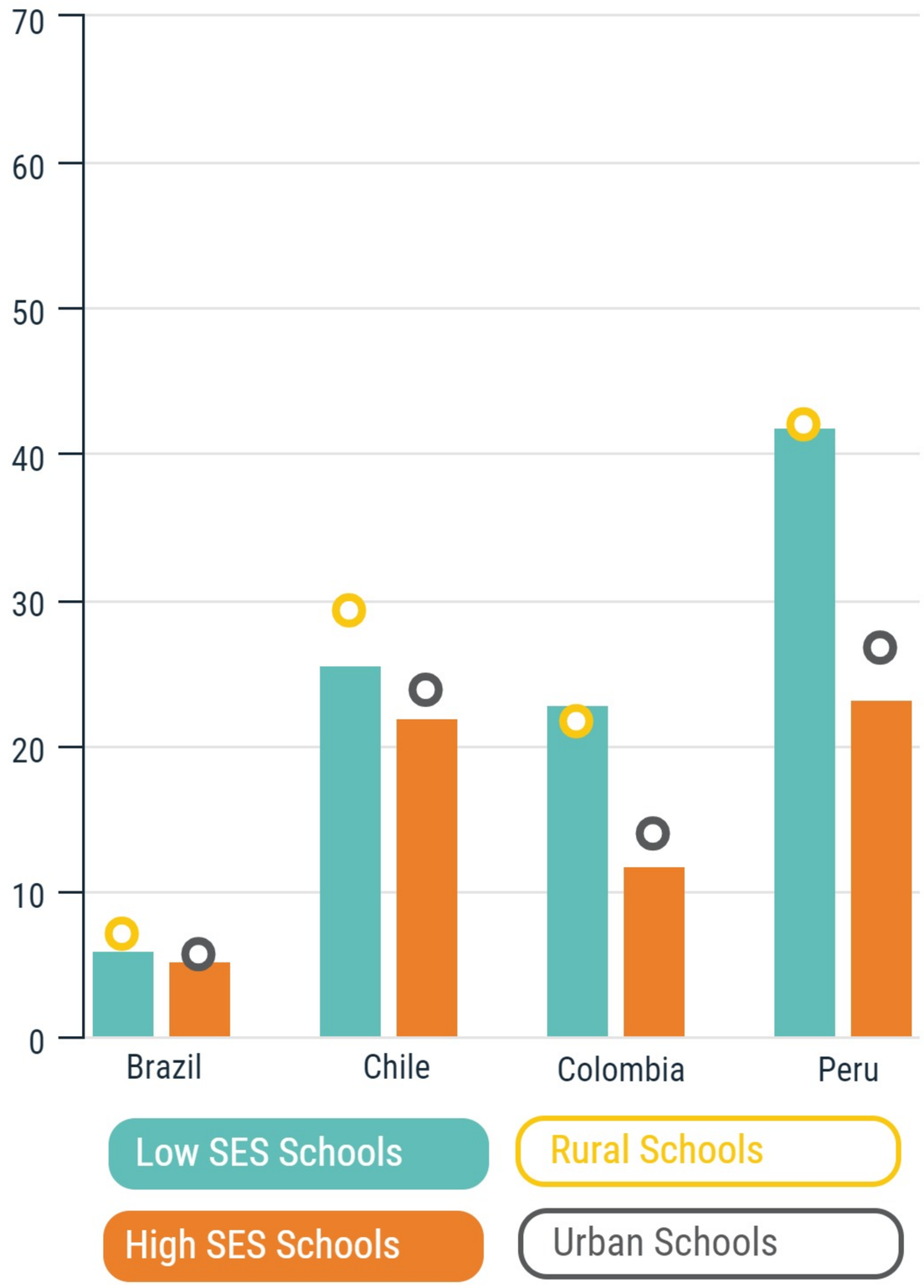
- One way in which governments have addressed teacher shortages is by staffing schools with teachers on temporary contracts. These teachers usually have fewer credentials and earn lower salaries than permanent teachers.
- In Latin America, temporary teachers have a negative influence on learning, specifically among disadvantaged students.
- Chile has the largest percentages of temporary teachers in low-SES and rural schools (57% and 62%, respectively), while Colombia has the lowest percentages of temporary teachers in low-SES and rural schools (42% in both types of schools).
- The difference in the proportion of temporary teachers between advantaged and disadvantaged schools is larger in Peru and Colombia than in Chile and Brazil. For example, in Peru, the gap between low-SES and high-SES schools is around 20 percentage points.

PERCENTAGE OF SCHOOLS WITH TEMPORARY TEACHERS



Sources: 1. Bertoni, Elacqua, Jaimovich, Rodriguez, and Santos. (2018). Teacher Policies, Incentives, and Labor Markets in Chile, Colombia, and Peru: Implications for Equity.; 2. Elacqua, Marotta, Powidayko, and Soares. (2017). Equity and Efficiency in Teacher Allocation in Brazil. Presented at the Seminar on Financing Basic Education in Brazil, São Paulo, SP.

PERCENTAGE OF SCHOOLS WITH NOVICE TEACHERS



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Disadvantaged schools have teachers with less experience

- *Cerrando Brechas* finds that students taught by novice teachers (those with less than 3 years of experience) perform worse academically than students taught by more experienced teachers.
- The proportion of novice teachers with less teaching experience is higher in low-SES and rural schools, particularly in Peru (42% and 42% in both types of schools) and Chile (25% and 29%, respectively).
- The difference in the proportion of novice teachers between advantaged and disadvantaged schools is also larger in Peru and Colombia.
- Brazil has the lowest percentages of novice teachers in low-SES and rural schools (6% and 7%, respectively).

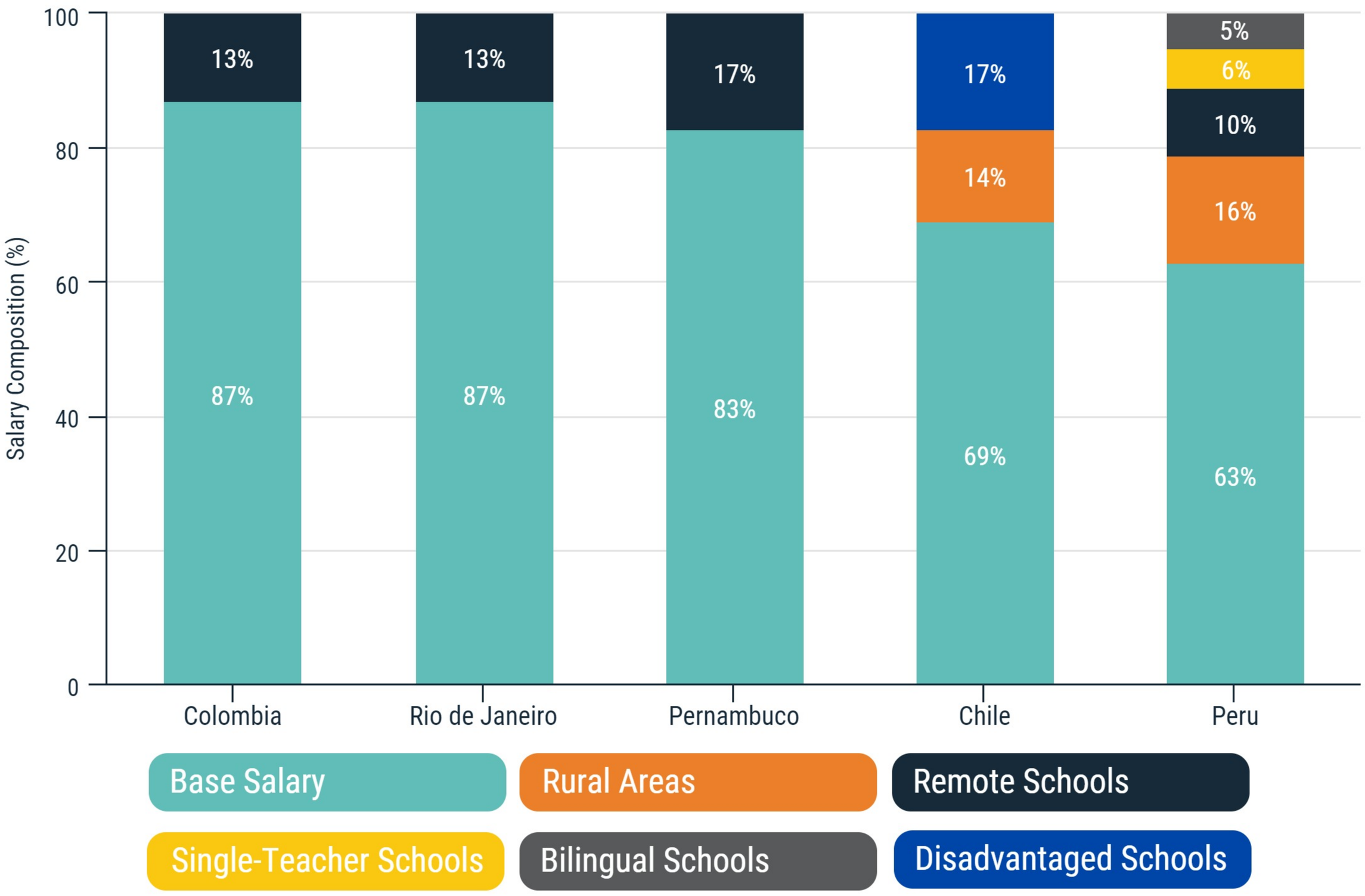
One way to reduce inequity in teacher distribution is by reforming vacancy allocation policies

- There are different ways in which governments address shortages of qualified teachers in disadvantaged schools. One option is to reform teacher allocation rules.
- In some countries, governments have more discretion over teacher allocation and can assign higher-performing teachers to more disadvantaged schools. In these systems, teachers have less flexibility when choosing a school. This is the case in South Korea and Singapore, where teachers also have higher salaries and better working conditions.
- In several school systems in Latin America (i.e., Brazil, Colombia, and Argentina), high-performing applicants have more flexibility when choosing where they will teach and are more likely to select advantaged schools. Exceptions include Chile, where each municipality and privately-subsidized school defines its own rules, and Peru, where principals play a role in the selection process.

Some countries use monetary incentives to attract qualified teachers to disadvantaged schools

- When governments have less discretion over teacher allocation, school systems may use monetary incentives, such as bonuses, to attract teachers to teach in disadvantaged and hard-to-staff schools.
- Some school systems in Latin America reward teachers who teach in rural, bilingual, and disadvantaged urban schools. Teachers in Peru are provided with the highest number of incentives to work in hard-to-staff schools; combined, these incentives make up almost 40% of teachers' monthly salary.
- These bonuses do not necessarily focus on attracting qualified teachers to hard-to-staff schools. One exception is Chile, which provides an additional incentive to high-performing teachers who work in disadvantaged schools.

MONETARY INCENTIVES FOR TEACHERS, BROKEN DOWN BY TYPE, 2017



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Non-monetary incentives can also reduce inequality in teacher distribution

- Governments also use non-monetary incentives to attract teachers to disadvantaged schools; examples include better working conditions and career advancement opportunities.
- In Pernambuco, Brazil, schools in violent areas have armed security guards. Increasing teachers' real and perceived safety may attract teachers to disadvantaged schools.
- Smaller class sizes are another mechanism used to improve teachers' working conditions in hard-to-staff schools. In Peru and Argentina, the minimum student-teacher ratio (used to determine teacher needs) is lower in rural schools than in other types of schools.
- In Chile, schools that serve vulnerable students receive additional resources to hire support staff (i.e., psycho-pedagogues) and provide technical assistance, training, and pedagogical materials.
- Another example of a non-monetary incentive are the career advancement opportunities for teachers who work in hard-to-staff schools. In Peru, teachers who work in rural schools can move up the career ladder more quickly than their counterparts in other schools.

NUMBER OF YEARS TO MOVE FROM THE LOWEST TO HIGHEST PAY SCALE, PERU

Source: Authors' calculation based on the laws and regulations of teaching careers in Peru.

Well-designed dissemination of information could be a cost-saving strategy to address teacher shortages

- Changes in teacher allocation rules as well as monetary and non-monetary incentives may reduce teacher shortages, but they also tend to be costly and difficult to implement in the short run.
- The IDB is currently testing the effectiveness of strategies that use behavioral insights as a cost-saving alternative to attract teachers to disadvantaged and hard-to-staff schools.
- One strategy is to use a text messaging program (like the sample in the graphic below) focused on high-performing teachers to motivate teachers to choose or transfer to disadvantaged schools.

The Information Center for Improvement in Learning (CIMA, for its acronym in Spanish) of the Education Division of the Inter-American Development Bank seeks to promote the use of data and indicators in evidence-based decision-making when developing education policy, with the goal of providing a quality education for all. With this objective, CIMA publishes a series of briefs that analyze indicators that contribute to the improvement of education quality in the region.

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References: 1. Ayala, M.C. (2017). *Efecto de los docentes provisionales sobre desempeño académico: Evidencia para la educación secundaria oficial en Colombia*. Universidad de los Andes.; 2. Marotta, L. (2017). *Teachers' Contractual Ties and Student Achievement: The Effect of Temporary and Multiple-School Teachers in Brazil*. (Doctoral dissertation). Stanford University, CA.; 3. (*Cerrando Brechas*): Carneiro, Cruz Aguayo & Schady, (2017). Dynamics of Learning in Schools. Presentation at the Centre for European Economic Research (ZEW), Mannheim.