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Progress

IMPROVEMENTS IN THE QUALITY OF BASIC EDUCATION Chile's experience

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Case Study Summary

Education

- Chile became one of only three OECD member countries to improve pupil reading assessments by more than 20 points between 2000 and 2009, and improvements in science tests were also above the OECD average between 2006 and 2009.
- Chile succeeded in reducing its primary level pupil-teacher ratio from 32 children per teacher in 1999 to 23.5 in 2010.
- For the last 20 years, Chile maintained almost universal primary enrolment alongside other gains. For example, primary completion rates rose from 83% in 1990 to 95% in 2011.
- In just over a decade Chile's education budget increased threefold from \$907 million in 1990 to \$3.07 billion by 2002.

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Why explore education quality in Chile?

While major problems relating to school access continue to affect low-income countries, improving the quality of education is a global challenge that affects all income groups. The quality of education has a significant impact on broader societal progress, including economic growth; therefore, this learning gap should not be ignored.

Although Chile continues to struggle with inequalities, it is one of the few countries to have significantly improved the quality of basic education in recent decades. A deeper understanding of the drivers of Chile's progress is relevant in today's context when learning outcomes will almost certainly be a major development focus.

What progress has been achieved?

1. Improvements in quality

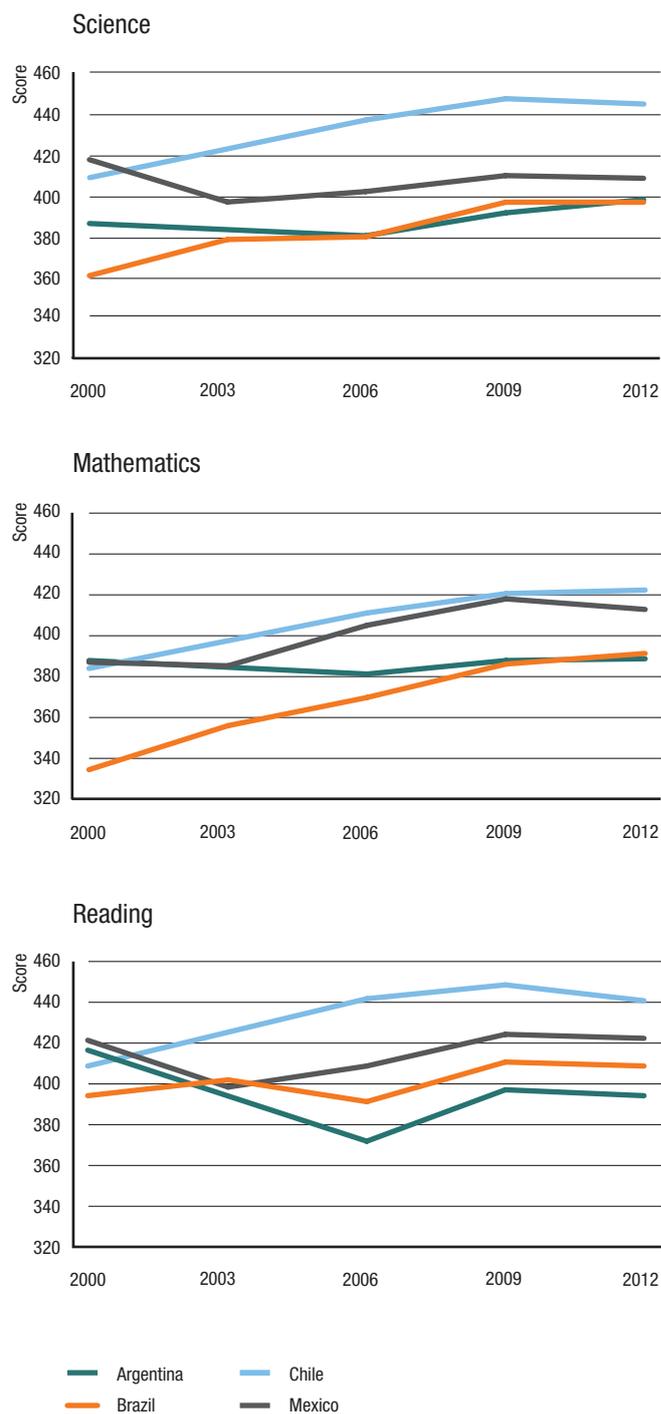
Chile has shown a consistent improvement in the quality of education in recent decades. While Chile's results in international testing regimes in the late 1990s and early 2000s were considered a disappointment, from the mid-2000s major improvements in the achievement levels of Chilean students were recorded. These changes can be seen in Figure 1 with Chile moving from being on a par with its larger Latin American neighbours in 2000 to being the leader in all subject areas since 2003.

These gains were impressive compared with those of global participants in the Programme for International Student Assessment (PISA). Chile, along with two OECD members, were the only countries to improve by more than 20 points in reading assessments over 2000-2009 (OECD, 2010b: 38). In addition, Chile simultaneously demonstrated science improvements over 2006-2009 that were above the OECD average level (OECD, 2010b: 64).

The country also witnessed a steady improvement in literacy rates over the last three decades. By 2009 literacy was almost universal amongst youth and adult populations and the country's primary level pupil to teacher ratio fell impressively over 1999-2010 from 32 to 23.5.

According to Chile's own highly developed education quality measurement system, SIMCE (Sistema de Medición de la Calidad de la Educación), there were substantial and sustained improvements in the test scores for reading from 2006, while mathematics scores improved from 2008. The trend overall is one of slow but steady improvement, although there are slight declines in reading results after 2010.

Figure 1: PISA reading, science and mathematics, 2000-2009



Sources: World Bank EdStats Database (accessed 5 September 2012); OECD (2013) 'PISA 2012 Results in Focus'.

'Strong advances have been made in recent years – there has been a significant increase in coverage along with efforts made to improve results' - Expert, Education Coalition

2. Steady strengthening of access

Alongside improvements in quality, Chile has continued to improve access to education, itself key to broad-based advances in the quality of education. While the country reached almost universal primary enrolment rates twenty years ago, Chile has not only maintained this progress, but has also made improvements across other areas such as primary completion rates.

World Bank data, covering 2007-2010, show net enrolment at the primary level fluctuating between 93% and 96%. These figures compare well internationally, whether looking at Latin America and the Caribbean (95% in 2010), other upper-middle-income countries (96% in 2010) or high-income countries (97% in 2010) (UNESCO, 2012: 58).

Current global figures on primary completion rates also highlight Chile's impressive long-term achievement in this area. Chile's completion rate in 1999 stood at 97.1%, a figure higher than the 2010 Latin American and Caribbean average (89%) and the 2010 average for upper-middle-income countries (95%).

Over the past 20 years, changes to school life expectancy from both primary to secondary and primary to tertiary indicate that the Chilean education system has become increasingly proficient at ensuring students complete secondary education once enrolled, and in securing transition to tertiary education (Figure 2).

3. Broader socioeconomic change

Over the past three decades, Chile has shown impressive economic performance, outpacing its neighbours in terms of growth rates while maintaining economic stability. In 2013 the World Bank re-classified Chile as a high-income country, a reflection of the advances the country had made in the past 20 years.

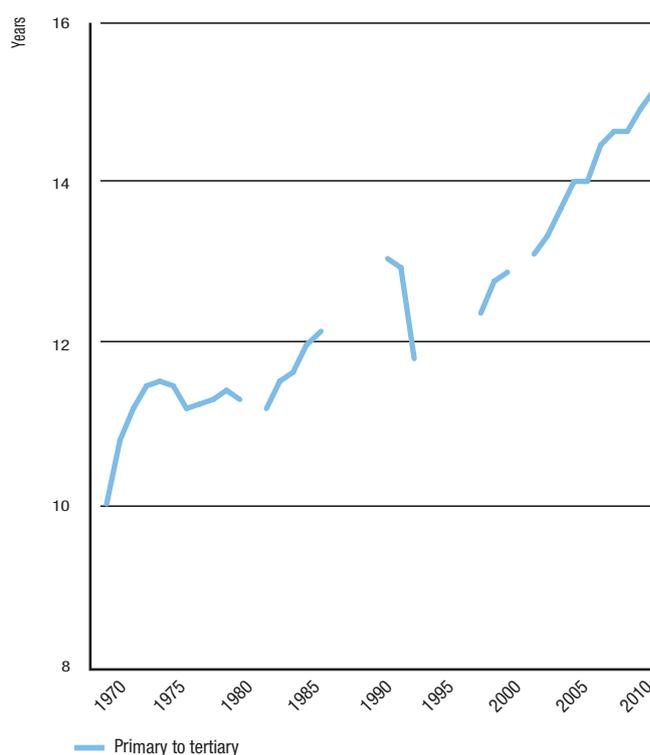
This rising wealth has helped provide the financial resources and political space to increase funding to the education sector, while economic transformation has also contributed to the demand for a skilled and educated labour force. Yet, as will be discussed in Section 4, the high and persistent rates of income inequality in Chile are also reflected in the lack of equity in education outcomes. Four key features of the Chilean educational policy-making environment in the 1990s and early 2000s seem to have played a major role in driving progress in education.

What are the factors driving change?

1. Emphasis on consensus in politics and policy

Firstly, education became a major policy focus of the Concertación alliance, elected in 1989. This renewed priority was crucial: allowing an increasing flow of resources into the education sector after the contractions of the Pinochet era; justifying a shift away from the hands-off approach the Ministry of Education (MINEDUC) pursued in the 1980s, towards a much more active and interventionist role; and creating the political focus needed for sustained reforms.

Figure 2: School life expectancy in Chile (1970-2011)



Source: UNESCO Institute for Statistics (UIS) (accessed 5 December 2013).

Box 1: The structure of Chile's education system

The structure of Chile's education system was established in 1980 with decentralisation of the education system and the creation of a quasi-voucher financing mechanism, known as the capitation grant, whereby both private and public schools could receive a fixed sum from the state for every student enrolled and attending.

The system has since gone through various changes but its basic logic and division of schools into three broad types has remained consistent:

- municipal schools, administered by local governments and financed wholly by the state through the voucher system
- private-subsidised schools, privately owned and financed by either the voucher system alone, or a combination of the voucher system and tuition fees
- private non-subsidised schools, privately owned and financed by tuition fees or endowments, with no funding from the voucher mechanism.

Box 2: The voucher system

In 1980, in an attempt to improve the quality of education in state-financed primary schools, the Pinochet regime introduced a voucher mechanism that has had a lasting impact on Chile's education system. The financing mechanism was demand-driven, with schools receiving a fixed per capita amount from the Ministry of Education per student attending class. This meant the level of payment fluctuated depending on enrolment and attendance of students, type of school and other factors.

There is general agreement that vouchers increased parental choice. The rapid increase in enrolments into private-subsidised schools was mainly driven by students from higher socioeconomic groups who were more able to move to these schools (McEwan and Carnoy, 2000; Torche, 2005). However, the voucher system is still seen as controversial and socially divisive. There is evidence that it has resulted in 'cream skimming', with private-subsidised schools selecting academically gifted students and those with middle and high economic status, while excluding pupils with learning difficulties or from low socioeconomic backgrounds (Bellei, 2009a).

Secondly, the political and constitutional context inherited from the Pinochet era focused attention on gradual changes in areas in which a range of actors could reach agreement, rather than on more radical change. As a result, the structure of the Chilean education system remained largely unaltered while reform efforts focused on areas where securing mutual agreement and compromise was possible.

Thirdly, the process of building political consensus and establishing policy continuity had a defining impact on the Chilean education policy-making environment (the Concertación coalition was in power from 1990 to 2010). The bargaining process that enabled a political consensus to emerge was facilitated by large-scale consultation exercises and national education plans that brought together all the major actors and academic authorities from the sector to produce long-term proposals for reform.

Finally, the effectiveness of Chile's education policy benefitted from the feedback provided by a culture of monitoring and evaluation within MINEDUC and the availability of external research and expertise to inform policy design and implementation. Policymakers therefore had access to significant amounts of information on policies at almost every stage of the process – enabling them to phase out or cancel ineffective policies, or, more commonly, modify them to ensure successful widespread implementation.

2. Multiple, mutually reinforcing interventions to improve education quality

Interventions in the Chilean education system over the past 20 years have focused primarily on improving the quality of education and the learning experience of students. This has included a wide range of measures that have contributed to raising standards. While individual reforms

differ in their impact on education quality, respondents explained that the transformation of Chilean education outcomes should be seen as less the result of individual reforms than of their cumulative effect. This has created an ecosystem of mutually enabling and reinforcing reforms.

Between 1992 and 1997, Chile launched a series of programmes to improve access to basic education materials in schools (MECE Básica). It specifically targeted basic components such as textbooks, classroom libraries and education materials. This was complemented by more sophisticated and child-centred elements, such as programmes for preschool provision and school health care, and an ambitious programme for IT training, computer provision and internet access through the Enlaces Programme. The number of textbooks distributed rose dramatically from 2 million in 1989 to 7.3 million in 1997 (Delannoy, 2000: 16).

The 1996 Full School Day Programme introduced the compulsory lengthening of the school day in all publically funded primary education facilities. In terms of additional hours, this, when combined with extensions to the school year, led to an additional 232 hours of schooling every year for students in Grades 3-6 and an extra 145 hours in Grade 7-8, which was then part of primary schooling (OECD, 2004: 30-31).

Empirical impact analyses of these and other programmes have shown positive and significant findings in terms of both test scores and broader social impacts. Research has also indicated that the impacts were remarkably pro-poor, with the largest improvements in results found in rural and municipal schools, as well as among disadvantaged groups that would not have attended for the full school day without the programme.

'Progress in educational quality has not been driven by a single factor but is a combination of a number of things under a systems approach' - Chile education specialist

Table 1: Government expenditure on education, 1980-2011 (percentage of total government expenditure)

Year	1980	1990	1994	1998	2002	2004	2006	2008	2010	2011
Percentage of GDP	4.4	2.4	2.6	3.4	4.0	3.5	3.0	3.8	4.2	4.1
Percentage of total government expenditure	16.1	17.4	16.9	19.6	17.5	17.8	...

Source: UNESCO datasets, accessed 29 July 2013.

3. Teacher professionalisation and employment conditions

To combat the low morale of Chile's teachers at the end of the Pinochet regime, the 1991 Teachers' Statute restored municipal teachers' status as public servants and reintroduced central bargaining for wages. Rising teacher morale and pay were successful in improving the quantity and quality of applicants to the profession (OECD, 2004). Increases in the number and quality of teachers were key enabling factors for a range of other reforms.

The Ministry of Education introduced two waves of teacher performance incentives. In 1995, a new teacher bonus was introduced and allocated according to school SIMCE scores. It was followed, in 2003, by the National Teacher Evaluation Programme, which concentrated specifically on increasing teachers' skills. The general consensus from impact evaluations indicates that these measures have had a positive effect on education quality.

The gradual transition, in terms of improving teacher quality through certification, from rewards and voluntarism to compulsion over a number of years, gave actors in the system time to adjust to higher standards. This enabled the introduction of a significant amount of quality control with relatively little disruption in terms of a sudden reduction in teacher graduation rates.

4. Investment and targeting of financial resources

Public investments in basic education have been an important driver of improvements in education quality for several reasons:

- The investments were essential for reversing the impact of two decades of budget cuts and underfunding in the sector.
- These resources were targeted at reforms with a significant bearing on learning outcomes, including increasing instruction time through the Full School Day reforms and other quality improvement efforts.
- The funds enabled the institutionalisation of policy reforms by addressing the legitimate concerns of important stakeholders, like teachers.

The education budget increased from \$1.3 billion in 1990 to \$4.3 billion by 2002 (constant 2005 US\$) and per student public spending on education increased by

151% between 1990 and 2001. Although spending on education then stabilised in the mid-2000s, dipping slightly to \$3.9 billion in 2006, it actually grew as a proportion of public spending during this period (Table 1), and then subsequently rose again to reach \$7.5 billion in 2012. These figures, combined with a resource shift away from tertiary to primary and secondary education, demonstrate the extent to which basic education was prioritised by the government over these two decades.

The Full Day School Programme of 1996 was the most cost-intensive reform programme and the most significant since the municipalisation of the education system by the Pinochet regime in 1981. Extending the school day required a major programme of infrastructure development costing \$883 million between 1997 and 2003, and hiring large numbers of new teachers (Cox, 2004). This reform alone raised the operational cost of public education by almost 25% (Bellei, 2009b). To finance the incremental expenditure increase, planned value-added tax reductions were abandoned and the rate was maintained at 18% (Delannoy, 2000).

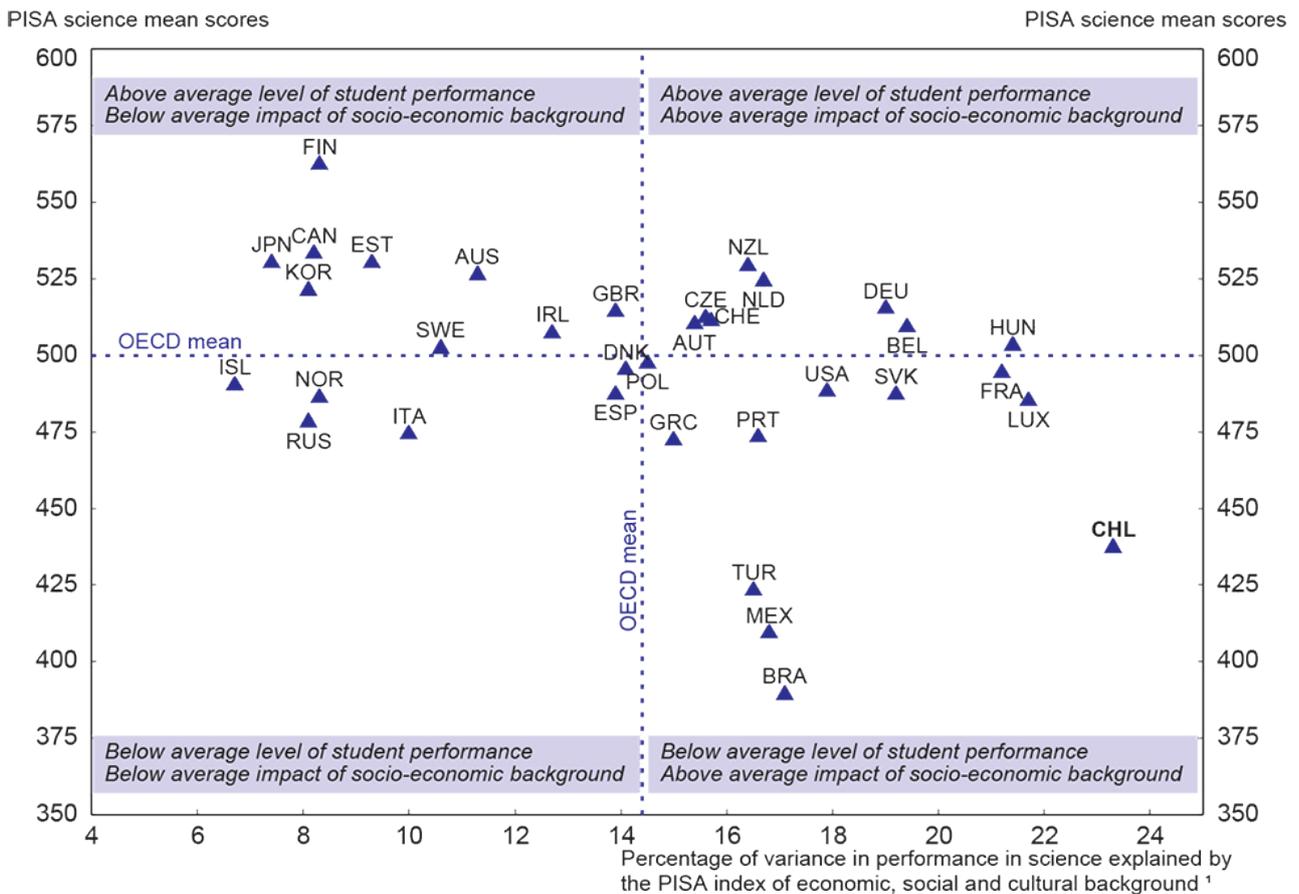
What are the challenges?

1. Concerns over absolute learning levels and the 'equity brake' on their progress

Chile still has considerable progress to make in improving educational outcomes and equity despite its progress in other aspects of education. While the country's performance in international test scores has been impressive in recent years and remains at the top of the region, it continues to lag behind the OECD average in terms of student performances in maths, reading and science.

Despite improvements on a range of education access indicators, there has been a lack of similar progress in terms of equity of education outcomes. An OECD report in 2011 noted of the country, 'Equity issues need to be addressed. PISA results decrease sharply by school type in line with the average socioeconomic background of the children [...]. In fact, the socioeconomic background explains a large share of the variance of PISA test scores in Chile compared to other OECD countries' (OECD, 2011: 64). The impact can be seen in Figure 3, with Chile actually having the strongest

Figure 3: The impact of socioeconomic status on achievement



Source: Brandt (2010).

relationship between socioeconomic background and school performance of any OECD country.

‘We have a very segregated school system by socioeconomic status which we have to overcome’ - Education researcher

2. Different types of schools and their role in reinforcing inequity

The main consequence of the school choice system, particularly with the added element of top-up fees, has been the segmentation of students by income. Household data from 2007 show that the fourth and fifth quintiles of the population spend significantly more on education both in absolute terms and as a percentage of their incomes.

This leaves low-income students, unable to pay private-subsidised school fees, primarily in municipal schooling where they achieve lower than average test scores.

Elacqua (2009) analyses a wide range of MINEDUC administrative data across 2000-2006 and finds consistent differences in concentrations of students classed as socio-economically vulnerable across different school types. Across this period around 39-42% of students in municipal schools were classed as vulnerable, compared to 19%-22% in private-subsidised schools and 0.3-1% of private non-subsidised schools.

There is also an urban bias, which has resulted in 81% of schools in rural areas being run by municipalities. In districts where there are fewer than 100-150 students, there is no enrolment into private-subsidised schools. This concentrates the benefits of the voucher system in urban areas, with a negative impact on urban-rural as well as income group equity (3ie, 2010).

3. Teacher skills and knowledge

Poor teacher skills continue to be a major challenge to improving the quality of learning and student outcomes in Chile. The country’s teachers performed poorly in

cross-national evaluations of teacher knowledge conducted in 2011, with Chile ranked 16th of 17 countries. Its teachers scored well below international benchmark levels in both pedagogical knowledge (425 compared to 516) and subject content knowledge (413 compared to 544) (IEA, 2012).

Despite improvements in both initial and in-service training in the past decade, further reforms are needed to improve pre-service training, particularly for teachers who teach the upper years of primary education. Greater efforts are required to link teacher education more closely to the curriculum and to improve evaluations of teachers' grasp of theory and practical skills. The significant variation in the quality of teacher training institutes is an important factor that limits further improvements in quality.

4. Maintenance of political consensus

A major issue Chile currently faces is how to maintain the political consensus while adapting it to meet new challenges in both education and the social sphere. Challenge to the consensus-building process has arisen from the Chilean student movement, which rose to

prominence in 2006 with a period of demonstrations, strikes and general unrest, led by secondary school students and dubbed the 'March of the Penguins'. The demands of the students concentrated on inequity in the Chilean education system and focused on ending the current market-based model of education. Their opposition exposes the tensions in the existing policy consensus, which has also come under increasing strain in the formal political system where the 2013 elections saw education reform emerging as a major issue.

The newly re-elected President Bachelet of the Concertación coalition has made reform of the system a key element of her platform after aligning herself closely with elements of the student movement, but lacks the legislative majority needed to pursue radical education reforms despite strong public support. Given opposition to reforms from both the right-wing coalition and parties of the far left, President Bachelet and her party will need to engage in a complex process of dialogue if changes to the education system are to not only be passed, but also successfully sustained.

Lessons learned

Chile's transition from authoritarian rule in the early 1990s has bequeathed it with a uniquely structured education system and a remarkable degree of macroeconomic stability. Yet the country's deeply entrenched inequalities in income and life chances continue to challenge the stability of the system. Chilean experience of improving the quality of basic education offers the following key learnings:

- **Strategic use of national and international assessment tests can drive political and policy attention towards quality.** This is particularly the case if strong feedback loops are in place. In Chile's case, national assessment testing provided monitoring of learning outcomes. Moreover, international tests that compared Chile to top OECD performers raised expectations of education providers and set goals for politicians, policy-makers and citizens.
- **Improvements are likely to require incremental, iterative and mutually reinforcing reforms.** While education was the subject of political contention in Chile, policy continuity and forward planning have allowed education policies in Chile to be implemented in a coherent and incremental manner. Policies have rarely operated in opposition and positive effects have been created through the

parallel implementation of mutually reinforcing policies and the concentration of scarce financial and institutional resources.

- **Extensive publicly subsidised private-sector provision increases school choice but in a way that seems to entrench inequality.** Over the past two decades, the role of the private sector in Chile's education system has grown, offering improved quality to some while leaving others behind. While the provision of greater choice and a competitive spur does seem to have occurred, there is strong evidence that such an approach also encourages a multi-tier system, which is overly advantageous to students from high- and middle-income backgrounds.
- **Targeted investments seem to support improvements in quality.** Research casts doubt on the relationship between overall educational spending and student performance. However, in Chile's experience, funds enabled the institutionalisation of policy reforms by addressing the legitimate concerns of important stakeholders, like teachers. Targeting of resources to disadvantaged students is important for improving quality and equity in a context where there are significant socioeconomic disparities in learning outcomes.

This summary is an abridged version of a research report and one of a series of Development Progress case studies being released at developmentprogress.org

Development Progress is a four-year research project which aims to better understand, measure and communicate progress in development. Building on an initial phase of research across 24 case studies, this second phase continues to examine progress across countries and within sectors, to provide evidence for what's worked and why over the past two decades.

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