Chapter 4

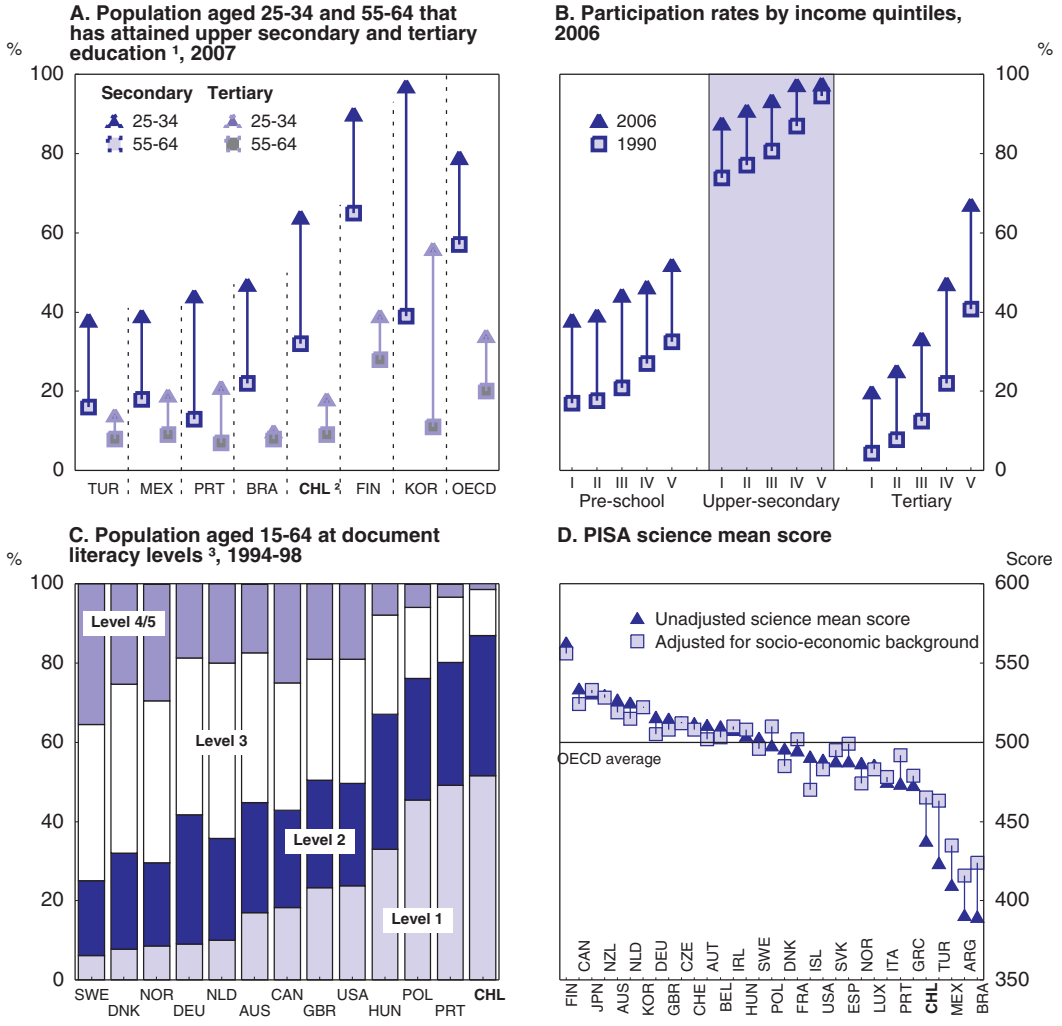
Climbing on giants' shoulders: Better schools for all Chilean children

Chile has made impressive progress in educational attainment. Yet, despite recent improvements, outcomes, as measured by PISA results, still need to catch up with OECD standards and equity problems should be addressed. One decisive ingredient will be better teachers. Chile should aim to attract qualified individuals to the profession and bolster initiatives to improve initial teacher education and training. A second ingredient will be stronger quality assurance mechanisms. For a long time, Chile has relied to a considerable extent on competition to ensure school quality. But there has been limited success, in part due to very unequal conditions for public and private schools to compete in terms of their ability to select children, their flexibility to employ teachers and in terms of financing. Chile has started to address this by prohibiting the selection of students until 6th grade. The ongoing introduction of a nation-wide quality assurance system based on independent evaluation of results is a welcome complement. Finally, Chile will have to improve outcomes for students with poor results even more than for the rest which would lift the average and improve equity at the same time. The government has recently made important changes to invest more in students from weak socio-economic backgrounds. These extra resources can help to make considerable progress.

Educational attainment has increased fast, but quality is still lagging behind

Chile has made impressive progress in terms of educational attainment, that is the highest educational degree that its citizens have obtained. The coverage of primary education is now almost universal and secondary and tertiary attainment rates have increased rapidly (Figure 4.1, Panel A). This is true for children in all income ranges

Figure 4.1. **Educational attainment and outcomes**



1. Excluding ISCED 3C short programmes.
2. Year of reference 2004.
3. Literacy level 1 indicates poor ability to process basic information. Level ? indicates higher-order information processing skills.

Source: OECD, *Literacy in the Information Age 2000; Education at a Glance 2009; PISA Results 2006 Database*; Ministerio de Planificación, Encuesta CASEN 1990 and 2006.

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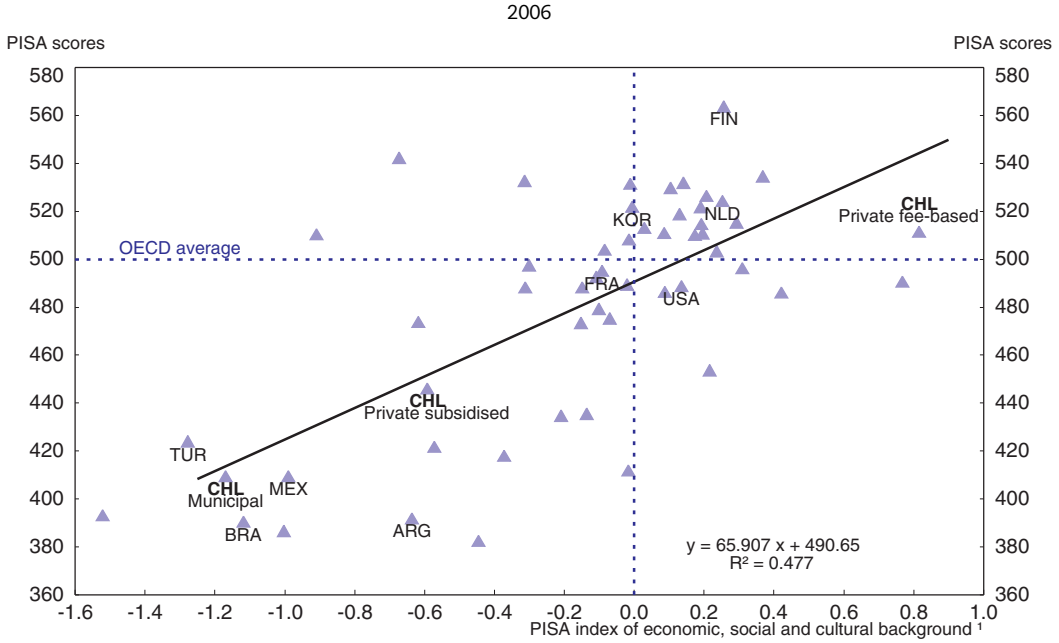
(Figure 4.1, Panel B), but participation rates for lower income children continue to lag behind. This improvement comes against the background of a relatively low level of skills within the entire population. The International Adult Literacy Survey (OECD, 2000), although a bit dated now, had shown that the skills of a large share of the Chilean population were insufficient to master basic tasks (Figure 4.1, Panel C).

PISA results have improved considerably between 2000 and 2006. Nevertheless, the scores of 15 year-olds in science, reading and mathematics are still well below the OECD average, including after adjusting for the lower socio-economic background of Chilean students (Figure 4.1, Panel D). Even high-income children taught at private schools, which devote several times the amount of resources to each pupil compared to publicly funded (municipal and private subsidised) schools, reach results that are only just above the OECD average (Figure 4.2).

Figure 4.2. **Socio-economic background and PISA scores**



1. The PISA index of economic, social and cultural status (ESCS) summarises various aspects of socio-economic background, including father's and mother's education and occupational status and students' access to educational resources. It is normalised to 0 for the OECD average. A higher index value indicates a higher socio-economic background.

Source: OECD, PISA Results 2006.

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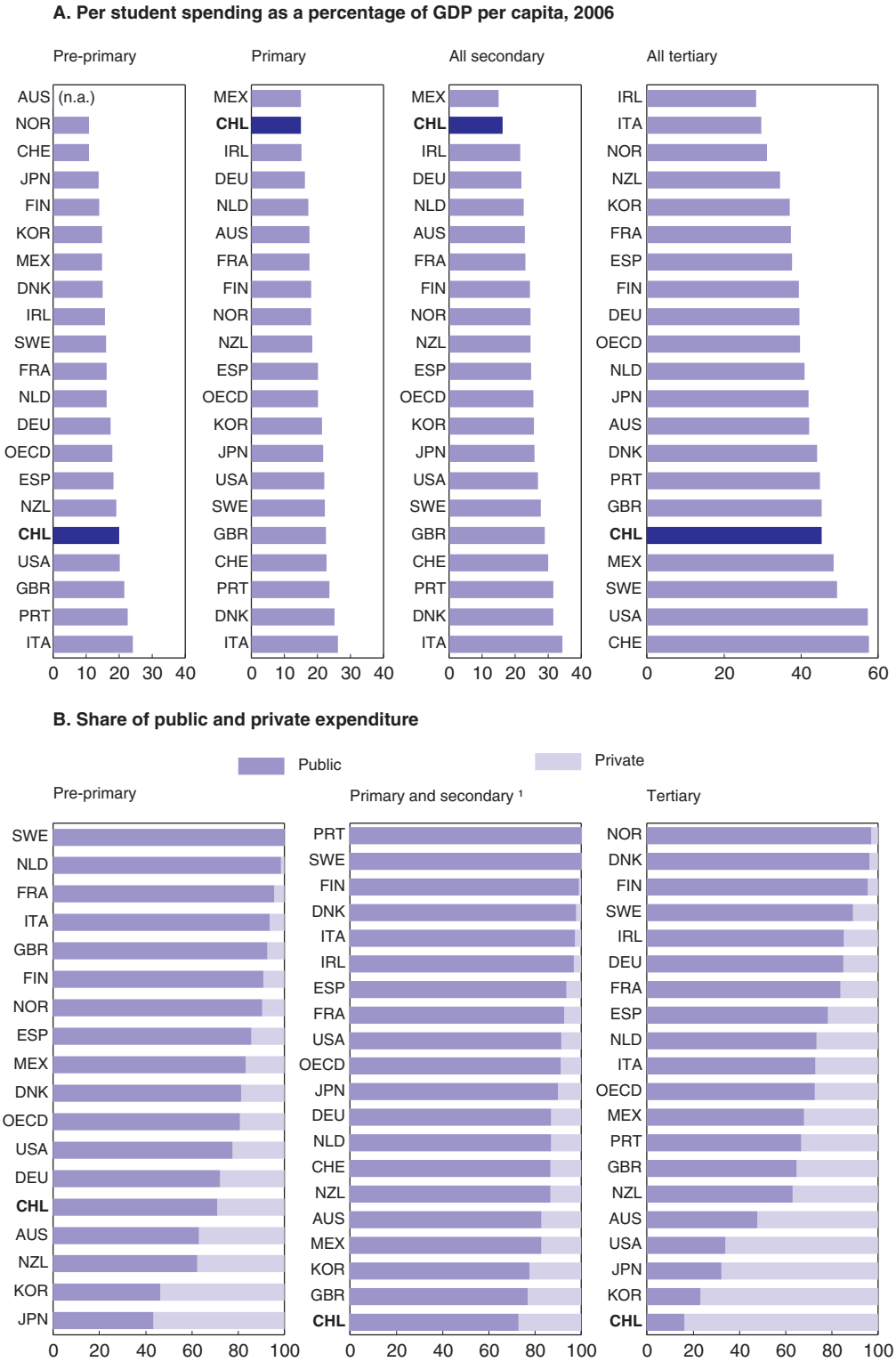
After having achieved so much progress in raising educational attainment it will be crucial for Chile to improve education outcomes, as well. Raising the quality of its human capital will be important for Chile to increase its productivity growth, raise the employment and earnings prospects of its citizens and lower income inequalities over time. There is pervasive evidence that learning outcomes, as measured by cognitive skill tests, are much more important than educational attainment as a determinant of economic growth and employment prospects (Hanushek and Wössmann, 2008). Cognitive skills have also been shown to be closely related to individual earnings (Lazear, 2003) and the distribution of income (Nickell, 2004).

Even if adjusted by Chile's lower per capita income level, education spending per pupil is low at the primary and secondary school level, in spite of comparatively high private spending (Figure 4.3). In fact, the private spending share is high at all levels of education.

Figure 4.3. **Per student expenditures on education**



1. Includes post-secondary non-tertiary education.

Source: OECD, *Education at a Glance*, 2009.

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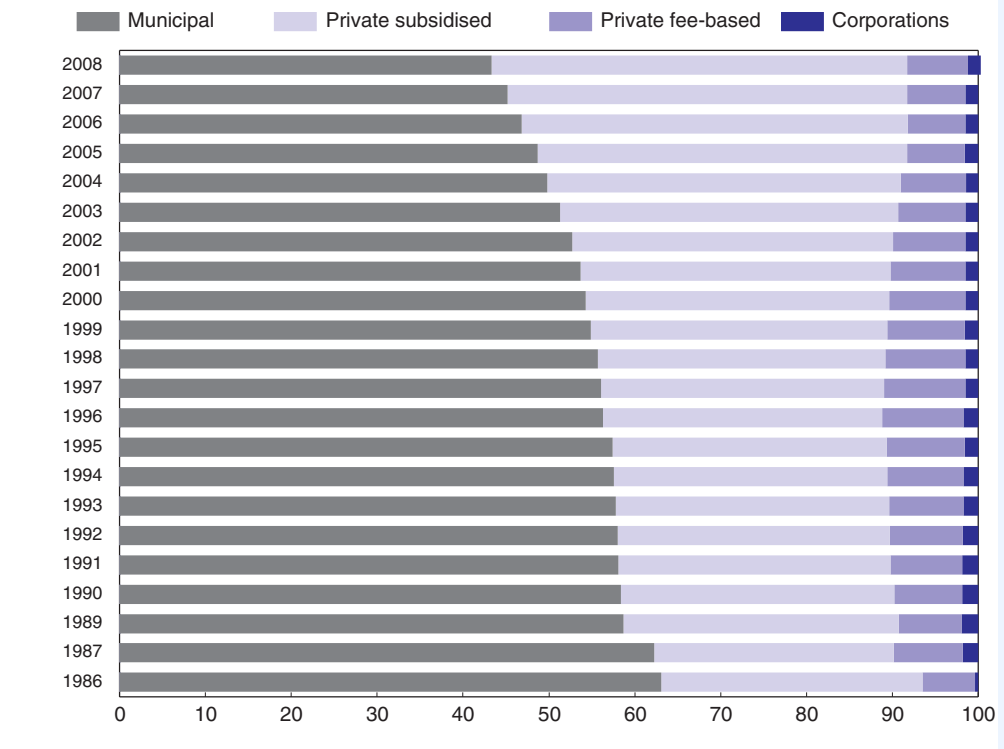
The important role played by private spending in the financing of schools mainly reflects the system of shared financing together with the existence of private fee-based schools (Box 4.1). While high private spending has the benefit of attracting more resources to education it poses equity issues in the context of a highly unequal income distribution in Chile.

Box 4.1. **The Chilean school system**

In the early 1980s, the Pinochet government introduced sweeping market-oriented reforms of education, with decentralisation of school management responsibilities to municipalities and a nation-wide voucher programme. The reform, which has been largely maintained until today, introduced an essentially flat per student subsidy as public financing for municipal and subsidised private schools. In addition, parents were allowed to freely choose their children's school and the school market was opened to new entrants. The reform has led to massive entry of private schools into the market and, as a result, enrolment in municipal schools has declined substantially (Figure 4.4). A number of private schools opted against the voucher subsidy to be able to continue charging fees. These schools are referred to as private fee-based schools in contrast to private subsidised schools which receive the voucher subsidy. The voucher subsidy has recently been raised significantly for the poorest children.

Figure 4.4. **Enrolment rates by school type**



Source: Ministerio de Educación, Departamento de Estudios y Desarrollo 2007/Estadísticas Educacionales (various years).

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Box 4.1. **The Chilean school system** *(cont.)*

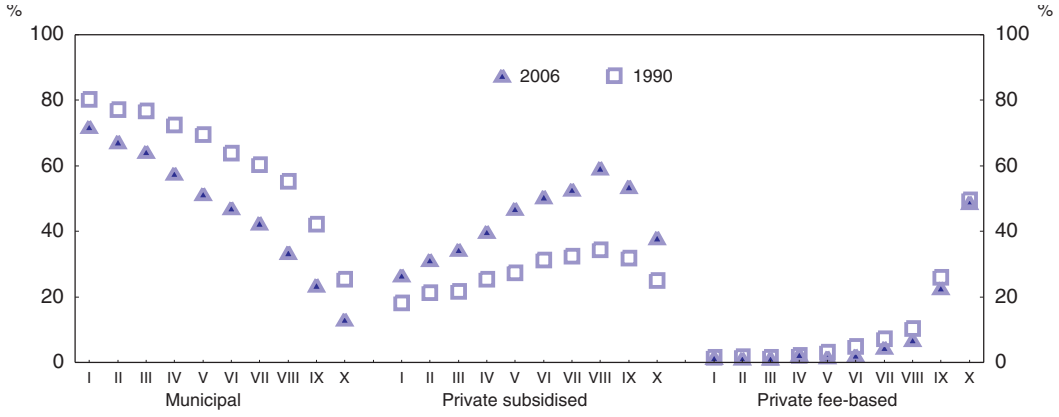
Municipal and private schools operate under rather different conditions. While all private schools had the freedom to select their students until recently, undersubscribed municipal schools are required to admit all children. Chile has recently prohibited the selection of children by ability or socio-economic background up to 6th grade. Moreover, teachers' job contracts differ, as municipal school teachers' wages are negotiated through centralised collective bargaining and there are restrictions on dismissal. In contrast, private school teachers come under the Labour Code like other private sector workers. As a result, private schools have much more flexibility regarding teachers' employment and pay.

Since 1993 private subsidised, but not municipal schools, have been allowed to charge tuition up to a ceiling. The subsidy is gradually withdrawn at increasing rates as school fees rise and once they go beyond a ceiling of roughly USD 125 pupils lose their entitlement to voucher subsidies.

A small share of pupils (around 7%), mostly from high-income families, go to private fee-based schools, while the poorest students go to municipal schools (see Box 4.1). Private subsidised schools receive students from a wide range of backgrounds in between (Figure 4.5). Outcomes measured by results in student achievement tests tend to decrease in that same order (see Figure 4.2). In 2006 the variance of PISA test scores that was explained by socio-economic background in Chile was stronger than anywhere in the OECD (Figure 4.6) indicating that the school system needed to do more to help disadvantaged children catch up. To an extent this is probably explained by the combined effects of segregation, with disadvantaged children often concentrated at the same schools, and fewer resources invested in children whose parents cannot afford to top up or replace the school voucher (see Box 4.1) with their own money. Chile has started to make important improvements to its school financing system just recently and like all investments in education, this will take time to produce higher and more equal outcomes.

Figure 4.5. **Attendance of different school types**[1] **by income decile**

As a percentage of each income decile



1. Includes primary and secondary schools.

Source: Ministerio de Planificación (Mideplan) – Encuesta CASEN 1990 and 2006

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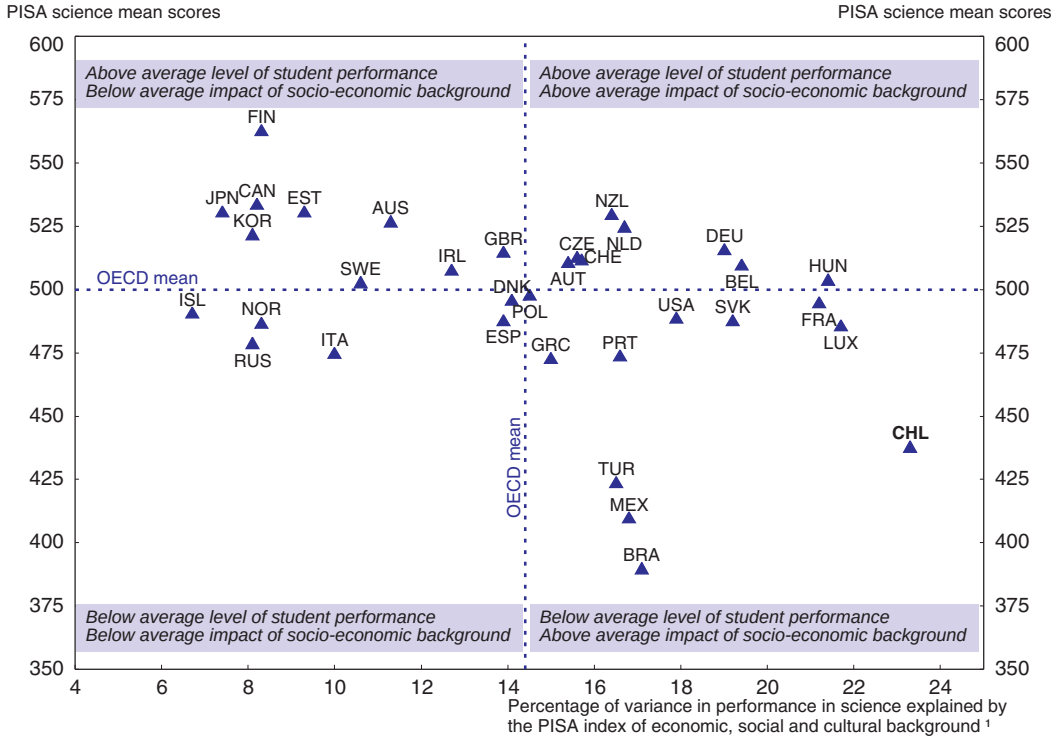
Figure 4.6. **Quality and equity of education**



Source: OECD, *PISA Results 2006*.

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Improving teaching quality would raise education outcomes for all students

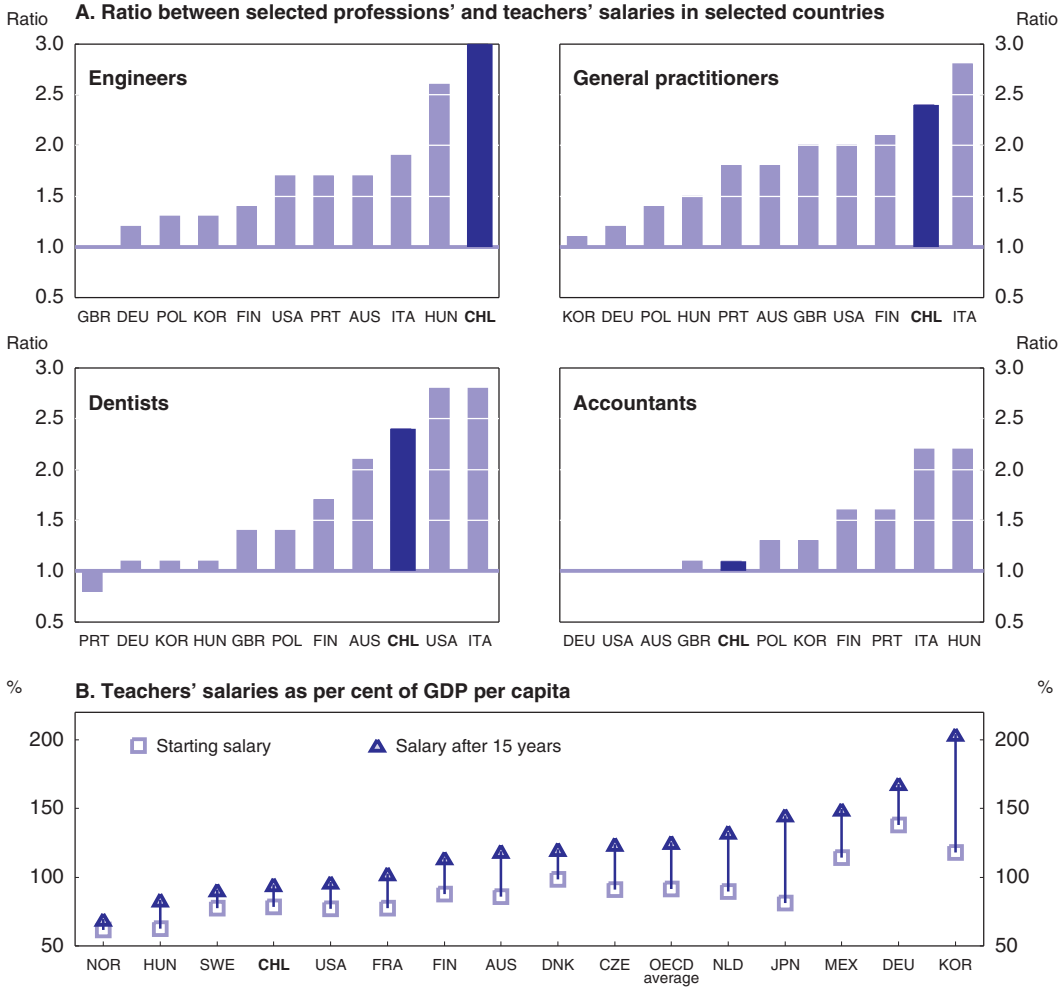
The government could aim to attract more qualified individuals to the teaching profession…

One decisive ingredient to improve schooling outcomes for all Chilean children will be to upgrade teaching quality. Teachers are the single most important input into education. There is pervasive evidence that students will achieve more with teachers who perform well in literacy and numeracy tests (Gustaffson, 2003, Rice, 2003). Moreover, teachers' level of education is positively related to students' performance (Wößmann, 2003). Top performing school systems, such as Finland, Korea, Singapore and Hong Kong, consistently recruit teacher students from the top third of each cohort graduate of their school system (Barber and Mourshed, 2007). In these countries, the teaching profession also enjoys high social status.

Chile has been successful in attracting progressively better prepared students to the profession, but still not many are from the very top. Substantial pay increases since 1990 have been supplemented with a publicity campaign to encourage college students to become teachers and a scholarship programme for outstanding students to enter teaching studies. These measures helped to substantially increase the number of teacher education applicants. Subsequent cohorts of students entering teacher education have been characterised by higher exam results in the university entrance test at least until 2003 (OECD, 2004), although education is still far from attracting many students from the top third of secondary school graduates. Teachers tend to come from households with a lower

educational background than other professionals with university degrees (Bravo *et al.*, 2006). A majority did not consider teaching a first option in their last year of secondary school, but close to 70% did apply to university choosing teaching as a first option. This indicates that many might have chosen teaching only once it turned out that their university entry exam results did not meet prior expectations. This is in stark contrast to countries like Finland and Korea where top students apply to teaching programmes and only few are accepted. Although salaries were raised, the average per capita household income of teachers in Chile is still 40% lower than that of professionals with a tertiary degree (Bravo *et al.*, 2006) and there is some evidence that the pay gap between teachers and some prestigious professions is larger in Chile than in a number of OECD countries (Figure 4.7, Panel A). This suggests that there is still some scope to raise teacher salaries to make them more competitive. OECD countries with successful school systems offer good, but not outstanding salaries to beginning teachers (Figure 4.7, Panel B).

Figure 4.7. **Teachers' salaries**



Source: ILO – LABORSTA *Labour Statistics Database*; OECD, *Education at a Glance 2009*; IMF, *World Economic Outlook Database 2009*.

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Teacher skills need to be further increased. A recent pilot exam, carried out by the government-run programme INICIA, testing the basic language, writing and numeracy skills and subject content knowledge of students who are soon to become primary school teachers revealed deficiencies among many applicants.

Performance-based pay plays an important role already. Salary elements related to special efforts and performance can make up close to 40% of teachers' pay (Vegas, 2007). Taking over administrative tasks or working in difficult schools is also rewarded with extra pay. A well thought-out teacher evaluation programme (*Evaluación del Desempeño Docente*) with rich qualitative information, including a portfolio, references from the principal and a structured interview, was introduced at public schools and teachers with good results can obtain salary bonuses, after taking tests on subject content knowledge and pedagogical skills. Teachers with low scores are offered professional training to overcome their weaknesses and may be removed from the profession in extreme cases when their performance does not improve. Another thorough evaluation of teachers' abilities (*Asignación de Excelencia Pedagógica*) can lead to salary allowances, and teachers who have passed this test can gain extra salary for training other colleagues (*Maestro de Maestros* programme).

There is also a collective performance bonus for teachers in publicly subsidised schools, but using this as a tool to encourage teachers to become more productive is not without difficulties. The scheme entitled *Sistema Nacional de Evaluación del Desempeño de los Establecimientos Subvencionados* (SNED) rewards the collective performance of teachers as measured mainly by the average score in the national student achievement test, *Sistema de Medición de Calidad de la Educación* (SIMCE), achieved by the school and the improvement since the last time the test was taken. The results are adjusted for the school's socio-economic background, for whether or not it expels weak students and some other features of the school. There is some evidence that in schools that have some likelihood of receiving the prize when they apply, average test scores increase slightly (Mizala and Romaguera, 2005a). However, producing meaningful rankings of schools with SIMCE results is difficult. Once results are adjusted for differences in socio-economic background, rankings resemble a lottery with strong variations from year to year (Mizala *et al.*, 2007). Until recently the SIMCE test had not allowed calculating intra-cohort gains, which would be a measure of value added, because the same class was never tested twice. Nevertheless, Carnoy *et al.* (2007b) were able to show that schools that received the SNED on average were not likely to be the ones that achieved the highest intra-cohort gains between 1996 and 2000. This suggests that it might be preferable to base performance-pay on richer information than school rankings of SIMCE scores adjusted for socio-economic background. One way would be move towards generating information on value added. The SIMCE tests have now been rescheduled, so that children tested in fourth grade will be tested again in eighth grade four years later, which is an important improvement. Chile could also consider producing individual value-added data by following SIMCE results for each child over time, although this would be a very expensive investment. However, there is widespread consensus in the literature that measuring teacher performance with quantitative measures of student outcomes alone, even when value-added measures are available, risks punishing or rewarding teachers for results beyond their control (Kane and Staiger, 2002). Career progression and pay should therefore be based on qualitative measures of teaching, as well.

To reward excellence in teaching Chile could define career paths for teachers in publicly funded schools closely linked to performance with opportunities for high ability individuals to progress. Salary increases and interesting position could be awarded based on the kind of thorough teacher evaluations that have been implemented at public schools (Castro, 2007). For this purpose, the evaluations would have to be extended to all publicly funded schools, which would be a desirable step even without new teacher career paths, given that there is scope to improve teacher performance throughout the system. There might be merit in putting more emphasis on the principal's evaluation for this purpose. A good principal who regularly observes teachers in the classroom and follows pupils' progress should be well placed to evaluate teachers' performance. Within the career paths extra pay should also be awarded to teachers working in difficult schools, which is already done in municipal schools, and those who have excelled at difficult schools should be promoted, so as to attract outstanding teachers. Steps in the career ladders for individuals capable of becoming instructional leaders could include becoming an instructor training other practicing teachers and a mentor for novice teachers. These positions should be rewarded with salary or time awards and could become important career steps on the way to becoming a principal or a school supervisor for the school administration. This would also ensure that these positions will be more likely to be awarded to experienced individuals with proven teaching skills and a capacity to help others develop their own, thus putting more emphasis than in the past on the instructional leadership role of these functions than on their administrative side. Other incentives awarded based on excellence in teaching could include winning grants or leave for research studies or teaching experiences abroad. In principal, a more even-handed treatment of public and private subsidised school would be desirable and designing a common career path for both types of school would help promote this. Chile could start out to define different career paths for the municipal and the private subsidised sector initially, however. This could be useful to avoid that the definition of a common career path would introduce rigidities prevailing in the public sector, regarding teacher employment and pay, into the private sector.

Chile plans to allow lateral entry for experienced professionals from different fields into teaching to attract more individuals with an aptitude to teach subject content. This is an important opportunity, because limited subject content knowledge is the Achilles heel of the teaching profession in Chile (OECD, 2004; Cox, 2007). However, experience in other countries has shown that good selection and screening of candidates will be required. Candidates need to go through solid training programmes in teaching methods and classroom basics and they will require close supervision and mentoring in their teaching during the initial phase (Education Commission of the States, 2003).

… improve teacher education further…

While Chile has made some progress in improving initial teacher education, more needs to be done. To be able to teach in publicly funded schools, graduates must now have been through accredited teacher training programmes. Teacher practice has been introduced more widely and tutors and mentors for new teachers are being discussed and in some cases introduced. At the same time, accreditation has only recently been made mandatory and has not yet been entirely effective in controlling teacher education programme quality. As an example, there are special programmes for initial teacher education (*Programas Especiales de Titulación*) which have been shown to suffer from serious deficiencies regarding entry requirements, the quality of their educators and their teaching

programmes (Ruffinelli and Sepúlveda, 2005). More candidates are enrolled in these programmes than at the more traditional universities and this is a cause for concern. The government should apply strict accreditation procedures based on well-defined standards for expected outcomes from initial teacher education that ensure that students learn key skills such as classroom management, teaching methodologies and evaluation of students' performance. Through the accreditation it should ensure that deficient programmes are closed.

Many students still enter teaching programmes with insufficient literacy and numeracy skills and teacher education will have to make up for this. One way to address this would be to make these programmes more selective by applying entry tests, designed either centrally by the Ministry or individually by the universities that try to assess aspiring teachers' literacy and numeracy skills, their motivation and their personal qualities. This practice is common in some countries with the highest performing schools systems, including Finland and Singapore. In Chile, this could have a twofold purpose. Especially able students could be enrolled in accelerated programmes to become educational leaders. This has been practiced in Israel and some cities in the United States that have been able to achieve rapid progress in their students' learning outcomes (OECD, 2005; Barber and Mourshed, 2007). On the other hand, aspirants with deficiencies in literacy and numeracy skills, but sufficient motivation, could be enrolled in remedial classes. For Chile this would be preferable to turning them away altogether as it may not be possible in the short to medium term to attract sufficient numbers of well prepared students to education programmes. Designing and administering entry tests would be a considerable investment and such a reform cannot be implemented in the short run. It may nevertheless be worth considering in the longer term, as it would serve both to identify highly qualified individuals for fast-track careers and to direct aspiring teachers in need of extra support to remedial classes.

Concerns remain regarding the preparation in subject content knowledge, especially for primary school teachers in higher grades. Research has shown a positive impact of teachers' preparation in their subject matter on students' performance (Wilson *et al.*, 2001; Monk, 1994). In Chile primary school teachers are trained as generalists and their teacher education currently does not provide sufficient content courses for mathematics, language and other subjects even in lower grades (OECD, 2004). However, this problem becomes especially acute in the upper grades of primary school. This probably also contributes to the gap between Chilean pupils and their OECD peers in performance tests, such as PISA. The problem is especially pronounced in the public sector where the proportion of teachers in seventh grade with only primary school teacher training reached 80% in 2006 compared with 55% in the private subsidised sector. In contrast, more than 68% of seventh grade teachers in private fee-based schools are trained as secondary school teachers (Cox, 2007). This is a source of concern because pupils in municipal school tend to be those that are most in need of teachers with expert training. Chile has recently legislated a shortening of the primary school cycle from eight to six years. This is welcome, as secondary school teachers with their more specialised training should be better able to teach the required subject content knowledge to students in seventh and eighth grade. However, this change will require a large scale programme for retraining teachers who teach in theses grades. Over time, more specialised training in subject content will also be needed for teachers in grades five and six. There is a small-scale programme that offers a post-graduate degree in specific school subjects for practicing teachers (*Postítulos de Mención*), but this will have to

be expanded so that the subject content knowledge of the existing workforce is upgraded soon.

At the same time, the curricula in teacher training programmes should evolve to ensure that students acquire sufficient knowledge in subject content. Teacher education programmes also need to better prepare primary school teachers in how to teach numeracy and writing skills and the curriculum of their education programmes needs to reflect this. Curricular changes have been financed at 15 institutions that train teachers for grades five to eight. However, it is not clear that the result of this programme has gone far beyond definitions of competences that student teachers should achieve. It is important that the participating universities now improve their curriculum accordingly. Moreover, other institutions that train teachers will have to be induced to make similar progress.

Aspirant teachers also need to be better prepared to develop practical pedagogical skills that they can successfully apply in real classroom situations. Training in pedagogy often remains very theoretical and there is little or no communication between faculties teaching subject content and universities' education departments (OECD, 2004). It would be good if this could improve, as research has shown that pedagogical coursework has positive effects on teacher effectiveness only if it is linked to content knowledge (Rice, 2003). There are now more practice periods for teacher students in schools, but this is not the rule. Experience from other countries shows that teachers perceive their practical experience in schools to be an important component of their initial education (Wilson *et al*., 2001) and students who get field experience also tend to remain in the profession at significantly higher rates than those prepared largely in campus-based programmes (Fleener, 1998). In Chile, as in many other countries, teaching practice is often not well connected to the theoretical content in teacher training courses with opportunities for students to integrate what they learn in the classroom with the rest of the curriculum. The government should work towards making classroom practice an integral part of initial teacher education in all programmes. Over time, partnerships between institutes offering teacher education programmes and schools should become the rule. It would be good if mentors for teaching students with proven skills to plan and teach didactic units and evaluate students' learning outcomes could be selected and trained to transfer their knowledge to student teachers. They should work closely with educators at the universities. Students' experiences in class should be discussed and evaluated in specialised training courses in teacher education programmes to help students develop the skills that they will need to help their pupils succeed in class. Over time, becoming a mentor for student teachers could become an interesting career step for motivated teachers.

Teachers require more focused training in how to deal with students from very different backgrounds and in how to close learning gaps. Given the strong stratification of the Chilean school system, many teachers will confront schools with a large number of poor students in a difficult learning environment. Students are currently not well prepared during initial teacher education for this (Avalos and Aylwin, 2007). They need to learn how to identify students at risk of falling behind and how to give them extra support. The curriculum of initial teacher education programmes should include specialised courses linked to practical experience in schools to better prepare teacher students for this task. There should also be more professional development courses to help practicing teachers develop these skills.

One way for the Ministry to better ensure the quality of initial teacher training programmes would be to introduce external exit exams to certify teachers. This could be a useful quality assurance mechanism in a system like Chile's where teacher education programmes are perceived to be of very variable quality (OECD, 2005). Chile has started to develop qualification tests to be taken by students before graduation. The programme INICIA aims to define standards for teacher candidates. After the 2008 pilot exam mentioned above there will be another examination in 2010, including pedagogical content knowledge. This should be developed further to become an external exit exam for all teaching graduates. It should involve testing of literacy and numeracy skills, subject content knowledge and ideally teaching practice, although the latter could also be included in an examination that certifies teachers for tenure after an induction period and some probationary time at school. It will help to establish a professional standard independent of teaching education programmes. Pass rates and exam results at large would also allow prospective teacher students to assess the quality of the programme where they intend to enroll. Institutions, that turn out not to prepare students effectively for the exam on a prolonged basis, should face sanctions that could ultimately result in a withdrawal of their accreditation.

... and develop professional development and guidance for teachers

Over time Chile should work towards developing an induction programme for teacher novices. Evidence shows that young teachers find their first experiences in school often overwhelming (Veenman, 1984; Britton *et al.*, 1999, Avalos and Aylwin, 2007), as they struggle with motivating students, dealing with individual differences between them, evaluating them and handling the communication with parents. Well designed induction programmes have been shown to reduce attrition rates (National Commission on Teaching and America's Future, 1996) and they help teachers apply their knowledge acquired in the teaching programmes to the complexity of the classroom (*e.g.* Odell and Huling, 2000). Evidence also shows that novice teachers' mentors also benefit from their mentoring experience (Resta *et al.*, 1997; David, 2000; Holloway, 2001, Yosha, 1991), as they reassess their own classroom management (Clinard and Ariav, 1998). Thus, Chile's school system could derive significant benefit from developing an induction programme over time, which could be built on existing programmes, such as *Maestro de Maestros*. It could also be used to certify students teaching skills at the end of the programme as a pre-requisite to obtain a teaching license. If it is impractical to introduce an induction programme, the teaching load for teacher novices could be reduced and they could be given time for supervised individual or group study that helps them plan didactic units, develop classroom management skills, evaluate pupils' learning outcomes and work towards closing learning gaps between different students.

More generally, there is room to improve supervision of teaching in Chilean classrooms and support for teachers to improve their practical skills. Despite recent progress, most school principals are still occupied more with administrative tasks rather than supporting their staffs' work and assuming an instructional leadership role. The classroom is often considered the sanctuary of teachers and supervising their work is not deemed appropriate. In contrast, supervising and guiding the practical pedagogical work of their staff is considered the key task for school principals in many of the more successful systems, like Finland (OECD, 2008) and Cuba (Carnoy *et al.*, 2007a), which according to student achievement tests has by far the best schooling outcomes in Latin America

(UNESCO, 2008). Against this background, the government's recent initiative to train 2000 principals to become instructional leaders is welcome. Pedagogical and management skills and the capacity to lead staff in classroom management should be the main criterion for the selection of principals and focused training should be available to them.

Chile has an extensive system of professional development for its teachers and much progress has been made over recent years, but there is scope for more. The programmes could focus more on closing teachers' knowledge gaps in subject content and could be adapted more to the often especially difficult circumstances. The systematic teacher evaluation that has been implemented in public schools is an excellent starting point to identify teachers' individual strengths and weaknesses and guide them towards tailor-made professional programmes. The example of schools belonging to the *Sociedad de Instrucción Primaria* suggests that extensive in-class support for teachers can be very effective in helping them develop their pedagogical skills and maybe even overcome deficiencies in subject content knowledge (Box 4.2). In Chile a number of teachers are likely to require courses to improve their literacy and numeracy skills and help them teach this especially in the lower grades of primary schools. Extending training to develop more specialised subject content knowledge will also be necessary as outlined above.

Box 4.2. **The Sociedad de Instrucción Primaria**

One example of successful instruction of disadvantaged students is the school network *Sociedad de Instrucción Primaria* (SIP). It runs 17 schools in low- to middle-income neighbourhoods in Santiago. Endowed with a similar level of resources as other private subsidised schools, SIP schools achieve systematically higher SIMCE test scores, with much lower variance, and this is robust to controlling for socio-economic background. In fact, SIP schools' performance is close to that of private fee-based schools, which serve high-income students with much larger resources as a result of their high fees. SIP schools are mainly financed from the national voucher and other subsidies, with a smaller share (20%) coming from parent fees through the shared financing mechanism and private donations. There is a selection process for entry based on parent interviews, although not ability tests. SIP schools do not systematically exclude or expel low-performing students. In part the success seems to be due to efficient management within a network:

Focus on academic performance and systematic testing of learning outcomes: The SIP school network is strongly focused on academic performance and this drives the setting of learning targets, the development of teaching methodologies and the allocation of resources. A centralised pedagogical department develops tests for all SIP schools to systematically evaluate pupils' progress. It also processes the results and generates reports for teachers and parents. This "data-driven decision making" allows for fast and targeted interventions for students that are lagging behind, which can include remedial classes provided by a partner organisation. It also allows the principal to intervene when too many students in one class are falling behind, *e.g.* by directing the teacher to training. In other schools teachers set educational objectives for their students and evaluate their performance largely by themselves. In the SIP network partner organisations provide for professional development as well as remedial classes and psycho-social support for children.

Box 4.2. **The Sociedad de Instrucción Primaria** *(cont.)*

Pedagogical support: Members of the pedagogical department regularly assist classes to observe teaching and assist teachers in improving their skills. SIP school managers stated in an interview that while they had not the resources to hire teachers from the best universities and many entered the school with fundamental deficiencies in maths and writing, this type of in-class support has proved effective in overcoming these deficiencies. Teaching is structured by the objectives formulated by the pedagogical department and financial incentives for teachers are sometimes tied to their achievement. Teachers receive tailor-made training with contents and timing adapted so that they best overcome their weaknesses in effectively helping their students reach their educational objectives. In comparable publicly funded schools, teachers seem to have much more freedom to "teach the way they feel most comfortable" (Henríquez *et al*., 2009), and individual financial incentives tied to the achievement of pre-defined educational objectives is uncommon. The *SNED* is awarded to schools based on their ranking in the national student achievement test, but not based on whether or not teachers have helped students attain their learning goals. Teachers in comparable publicly funded schools have access to training provided by universities and the Ministry, but it is less clearly tied to the specific weaknesses they have shown in helping their students reach their learning goals.

Principals as educational leaders: SIP school principals spend a considerable time in the field, doing in-class observation of their teachers to identify their strengths and weaknesses and direct them to professional development. They highlight the advantage of delegating a number of administrative tasks to a deputy director. Other private subsidised schools, in contrast, often do not have such a deputy director. Similar as in municipal schools principals are selected through a competition. While municipal school principals have a five-year term, SIP school principals have indefinite contracts, but can be dismissed. Unlike principals in other publicly funded schools, they retain a certain autonomy to hire and fire teachers,

Students and family commitment: SIP schools ask for significant parent involvement, especially when the pedagogical department recommends additional support for a student on grounds of test results. Also workshops for parents on issues like family violence are compulsory.

Experience in OECD countries suggests that professional development that is closely linked to the challenges that teachers have to confront in their own classroom and encourages teachers' learning communities is particularly promising. Teachers have to gain an understanding of their weaknesses and ways to overcome these in their specific classroom situation (OECD, 2005). Group study as well as peer review and support among teachers have also been found to be useful. In Japan groups of teachers work together to plan, execute and evaluate individual lessons and instructional strategies to achieve specific learning objectives. They visit each other's classrooms to understand their colleagues' teaching practice. In Finland, teachers are given one afternoon each week for joint planning and curriculum development (Barber and Mourshed, 2007). Chile has some experience with professional development among peers, including communal workshops for teachers. The scheme of rural micro-centres, involving the periodic coming together of teachers in small rural schools, seems to have operated particularly effectively (OECD, 2004). These programmes could be extended to help teachers develop more subject-specific teaching techniques and help groups of teachers to teach these contents to their

particular students. Allowing more time for joint non-classroom activities, such as planning lessons together, visiting each other's lessons and discussing strengths and weaknesses, preferably with structured support from teachers who are trained for this or the principal would seem to be a promising initiative.

School competition has been insufficient to reach the desired quality improvements

Competitive pressures are limited for a number of reasons

Chile's school system is unique in that a version of school competition has been in place since the early 1980s (Box 4.1). Proponents of school choice maintain that this could improve the productivity of the school system, because private schools are more efficient than public schools (Chubb and Moe, 1990; Hoxby 2000). In addition, competition would push all schools to become more productive (Friedman, 1955, Hoxby, 2000), because inefficient schools would be deserted and in the extreme case face closure.

However, there are reasons to think that in some cases competitive pressures in Chile may not be strong enough to lead to the desired productivity-enhancing effect. For example, rural schools will not feel the same competitive pressures as urban schools with a lot of nearby competitors (Carnoy and McEwan, 2000). The same may apply to municipal schools with soft budget constraints, as municipalities often do not rearrange their schools' budgets when their enrollment changes (Beyer, 2001).

In addition, there is evidence that the quality of parents' information about schools is not as good as desirable for competition to lead to higher productivity, and access to this information as well as incentives to use it vary by socio-economic background, raising equity issues. Based on survey data Elacqua and Fabrega (2004) show that parents use few sources of information to choose a school for their children, know little about schools' quality, such as test scores, and consider few different choices. Moreover, the quality of the sources of information that parents use is a function of socio-economic background. Carnoy and McEwan (2003) find that all parents value quality attributes, such as higher test scores and children's socio-economic background in the school, but low-income parents react less strongly to this. In a similar vein, Chumacero, Gomez and Paredes (2008) and Gallego and Hernando (2009) present evidence suggesting that both distance and quality determine school choice, but parents with higher income and socio-economic background value quality relatively more. There may be many reasons for this: Information may be partly governed by internalised viewpoints determined by social-economic status and the cost of access to it could be a function of socio-economic status, as well (Wells and Crain, 1992; Levin, 1991; Carnoy and McEwan, 2003). Moreover, some parents may be discouraged to apply to good schools because of their inability to pay top-up fees and because they are likely to be eliminated through the selection processes.

There is also some evidence that available quality indicators are of dubious usefulness and that both parents and teachers have difficulties interpreting them. One obvious quality indicator that parents could and do consult are the results of the national student achievement test (SIMCE). Average school scores are published in the newspaper. However, as explained before the scores are either heavily dependent on socio-economic background or, once they are corrected for this, they resemble a lottery with strong variations from year to year. There is also evidence that many parents and teachers do not know their school's SIMCE scores or have difficulty interpreting them (Taut *et al.*, 2009). As long as this is the

case, hopes that parents' school choice alone will push schools to improve their quality sufficiently should not be exaggerated.

To some extent competition has led to sorting, reducing positive effects on productivity

Competition between schools may not necessarily be of the productivity increasing kind, because it is easier for schools to compete by selecting students who are good to begin with. Private schools in Chile were allowed to select their students until recently, while municipal schools were not (Box 4.1). As a consequence, rather than striving to increase their students' learning outcomes, private schools might simply compete by trying to attract children who are easier to teach. Indeed, survey evidence from the 1990s suggests that private schools used parents' interviews, entry tests and other tools that help to select students with characteristics that positively influence achievement, such as socio-economic background (Parry, 1996; Gauri, 1998). SIMCE data from 2002 suggests that private schools were also more likely than municipal schools to expel students who repeat a grade (Bellei, 2005). In addition, there is evidence that parents choose schools attended by children with backgrounds similar to theirs, thus reinforcing the effects of selection (Elacqua *et al.,* 2006, Gallego and Hernando, 2009).

There is evidence that competition in Chile has been associated with sorting, weakening potentially beneficial effects on school quality. Overall it is fair to say that the entry of private sector schools into the market has been accompanied by a flight of the middle classes from the public sector (Hsieh and Urquiola, 2006), as the share of children from wealthier and middle-income backgrounds going to municipal schools has declined sharply (Figure 4.4). Moreover, in municipalities with high private entry into the market, a measure of competitive pressures, relative test scores of municipal school children as well as the relative educational background and income of their parents is lower than elsewhere (Hsieh and Urquiola, 2006; Aguste and Valenzuela, 2006, McEwan *et al.,* 2008). This is evidence that higher ability children with a more favourable family background are sorted into private schools. Controlling estimates of educational production functions for selection bias, also provides evidence suggesting that students attending private schools have characteristics that increase their performance (*e.g.* Henríquez *et al.,* 2009 and to some extent McEwan, 2001). Bellei (2005) presents evidence that Chilean schools that expel repeaters obtain higher test scores, suggesting that this type of selective practice is one way to improve results. When schools are able to obtain better results simply by attracting and retaining higher-ability students, this will weaken pressures to add value, no matter whether sorting occurs through active cream-skimming by schools or through self-selection from the demand side.

It is unclear whether competition had positive effects on the quality of education

Even so, competition may still have had a positive impact on school quality in Chile, but separating productivity effects from the impact of socio-economic background and sorting is fraught with daunting econometric and measurement problems (Box 4.3). Among researchers who have used a measure of competition to separate sorting from productivity effects, most have found evidence of sorting. Yet, while Gallego (2006) and Auguste and Valenzuela (2006) also find that competition had a significantly positive effect on average test results, Hsieh and Urquiola (2006) and McEwan *et al.* (2008) find no such effect.

Box 4.3. **Identifying productivity of Chilean schools**

Bellei (2005) shows to what extent results on the productivity differential between public and private schools can depend on the data used to approximate socio-economic background, the aggregation level of control variables and the strategy to correct for selection bias.

While it is in principle possible to control for the effect of socio-economic background on schooling outcomes with good data, results can depend a lot on how this is measured. Based on SIMCE data from 2003, Bellei (2005) finds that using a categorical index variable based on parents' education, family income and the proportion of at-risk students in the school, which is widely used in the empirical literature on Chilean school outcomes (Mizala and Romaguera, 2000 and 2002; Bravo *et al*., 1999; Gallego, 2002) to control for the impact of socio-economic background, the apparent private-public productivity gap is reduced to a large extent, but remains significant. It remains so if the logarithm of mean family income at the school level is used instead, but the size of the gap is further reduced. Once control variables approximating cultural capital, such as the school mean of parents' education (used in Carnoy and McEwan, 2000; Sapelli, 2003 and McEwan, 2001) or books at students' home (McEwan, 2001), are entered at the school level instead or in addition to this, the result is turned around and public schools appear more effective than private subsidised or fee-based schools.

Bellei also shows that it can significantly affect results whether only student-level control variables are included (as in Sappelli and Vial, 2002), only school-level variables or both (McEwan, 2001). With his particular dataset, Bellei finds that the private-public gap remains positive and significant as long as only student-level variables are introduced, such as parents' education, gender and a fixed effect for repeating students. Yet, it disappears once school-level controls for cultural capital are included into the regressions. This holds for Ordinary Least Squares regressions as well as multi-level regressions as employed in Mizala and Romaguera (2002) to account for the effect that students' results in the same school cannot be expected to be independent.

Some, but not all researchers have tried to control for selection bias, with a Heckman-like two-stage procedure, where school sector selection is estimated at the first stage (Auguste and Valenzuela, 2006; Gallego, 2006; Henríquez *et al.,* 2009, McEwan, 2001) However, this approach rests on strong assumptions regarding normality and homoscedasticity. What is more, the validity of the instrumental variables used in the first stage is often dubious. They should explain school selection, but be independent from test results and unobservables affecting these.

Likewise, results on whether or not private schools perform better than public schools after accounting for differences in socio-economic background and – in some cases – selection bias, that is whether apparent superior performance is based on schools' ability to choose higher ability students to begin with, remain inconclusive. Mizala and Romaguera (2000) and Bravo *et al*. (1999) find no consistent differences in achievement between public and private schools. By contrast, Mizala and Romaguera (2002), Henríquez *et al*. (2009), Anand *et al*. (2009) and Sapelli and Vial (2002) and (2005) find that private subsidised schools have better outcomes than public schools, although the advantage is often very small. Studies differentiating between different types of students add a nuance to these findings. Mizala *et al*. (2005) find that public schools have an advantage at

educating children with weak socio-economic background. Tokman (2002) presents a similar finding.

Some evidence suggests that it is important to differentiate between different types of private schools, but even so, results remain conflicting. Chumacero and Paredes (2008) find that private for-profit schools perform better than public schools, with some indication that private non-profit schools perform even better. In contrast McEwan (2001) finds that private fee-based schools and catholic private subsidised schools have higher achievement than public schools, while private non-religious schools do not. It should be noted that catholic schools and private fee-based schools spend more money per student than municipal and most non-religious private subsidised schools, so this is not necessarily a sign of higher efficiency. McEwan and Carnoy (2000) present a similar result based on school-level data. In contrast, Elacqua (2009) finds that private for profit franchise schools, belonging to a group, and catholic schools have a substantial advantage over public schools, while private independent for profit schools have none. These schools often tend to be small scale, sometimes run by teachers and are often located in poor areas. Therefore, they have few opportunities to exploit economies of scale in terms of management and they often struggle with the same problems of high concentration of vulnerable students as municipal schools.

In aggregate terms, competition alone does not seem to be sufficient to bring about the desired improvements in schooling outcomes. Between 1970 and 1999, after almost 20 years of school competition, Chile's relative position in TIMSS, an international math and science test at the primary school level, had not improved (Hsieh and Urquiola, 2006). This was a period of fast economic growth, but without strong increases in primary school attendance which could blur the results. In addition, the performance gap in terms of SIMCE test results between private and public voucher schools, where competition is believed to take place, and private fee-based schools has not narrowed between 1982 and 2006. Nevertheless, improvements have been visible in the most recent period, for example when comparing PISA results from 2000 with 2006. Chile has made substantial efforts since the 1990s to improve initial teacher education and the results of poor students with policies that go beyond competition. This has included P-900, a programme directed at schools with weak learning outcomes, and the rural school programme, both entailing teacher workshops, enhanced learning material and management support. The *Montegrande* project aimed at fostering innovation in secondary schools to solve some of the achievement problems of students in marginalised contexts. Chile has also launched the third consecutive programme to improve initial teacher education in some universities. It is unclear whether recent improvements in learning outcomes are related to these efforts, to beneficial effects of competition or both. In any case, experience so far seems to suggest that while there would be ways to improve the functioning of competition, complementary measures to improve quality are desirable, as well.

The functioning of competition could be improved, but more state intervention is needed, as well

Some measures could be taken to improve the functioning of competition…

To increase chances that competition leads to higher quality rather than to cream-skimming, it is important to ensure equal conditions to compete for schools, including regarding selective procedures. It is difficult for municipal schools to compete on an equal

footing if other schools can select and expel students with much more ease, diverting the most disadvantaged students to municipal schools. Against this background, the prohibition for schools receiving public funds to select students based on their socio-economic background or prior education outcomes until the end of primary school (sixth grade) as legislated in the *Ley General de Educación* is an important principle. So is the requirement for schools to allow students to repeat a class at least once before expelling them. The new law may not prevent schools from applying some more subtle methods to select students as discussed further below, but without creating equal conditions for all schools, at least *de jure,* to select and expel students the government cannot hope that schools will compete mainly by trying to improve their productivity.

The government should also work towards creating more equal conditions in terms of employment of teachers and pay. Private schools enjoy much more flexibility in terms of teachers' pay and dismissal (Box 4.1). In fact, they have a tendency to hire very young teachers, dismissing them once they get older and more expensive. Municipal schools cannot do the same, as teachers' salaries are negotiated centrally, teachers are assigned to individual schools by the municipality and they enjoy more extensive job protection. As a result, their workforce is much older and more expensive than in private schools (OECD, 2004). This distorts competition. The government should work towards creating more equal conditions for teacher employment and pay decisions in the publicly funded sector (private subsidised and municipal schools). While some of the relative security of the teaching profession could be maintained to make up for some of the higher pay in other professions, all schools should have some flexibility over teacher employment and pay. Wage negotiations for public schools could be decentralised to the municipal or school level. If this is not feasible, the government and private providers could team up to negotiate wages centrally.

A number of education policy initiatives aimed at alleviating disadvantages of poor children are targeted at schools classified as vulnerable rather than at the children, possibly creating lock-in effects. Unlike voucher subsidies, which follow students, income-related benefits, including free school meals, are allocated directly to schools. Their coverage is concentrated at some municipal schools and private subsidised schools in poorer areas, as they are targeted to the socio-economic composition of the school. This may discourage poor parents from sending their children to schools which are not classified as vulnerable (Sapelli and Torche, 2002). The government may want to consider whether some of these benefits can be made portable in order to prevent lock-in effects.

There is a need for more information on schools' quality that is readily accessible and easier to interpret. As it is, school managers, but also teachers and parents need more information on how to read SIMCE results, as they are often not able to interpret them (Taut *et al.*, 2009). The new timing of the test, which now ensures that the same classes are tested twice, once in fourth grade and once in eighth, should help to get a better grasp of value added. Chile might also want to explore whether gathering panel data that would allow for calculation of individual level gains would be a fruitful investment. Chile plans to introduce a Quality Assurance Agency (*Agencia de Calidad de la Educación*) which will be responsible for evaluating students' learning outcomes, as well as the quality of schools and their operators, and for informing the public. This will be an excellent opportunity to base performance assessment on a larger set of instruments, including qualitative and possibly value-added indicators, to make it more reliable, and to make performance

reporting more systematic with sufficient explanation for all stakeholders to interpret results.

... but the government is also well advised to strengthen complementary quality assurance mechanisms

Chile has made important steps to strengthen its state-run quality assurance system. Among the more successful school systems, even the most decentralised ones have stronger quality assurance and performance reporting systems than Chile (World Bank, 2007). At a minimum, they evaluate whether schools and teachers meet minimum quality standards, as in New Zealand, and they can revoke licenses to operate or to teach if these standards are not met. The same standards apply to private and public schools. In other systems, such as England, Finland and some districts in the United States the state intervenes actively if schools perform poorly rather than simply revoking the license. These models also promote information sharing so that successful programmes and teaching methodologies are disseminated through the system. Chile has now moved to strengthen its quality assurance system. Until recently performance reporting was limited to publishing aggregate SIMCE results. Comprehensive evaluation of teacher performance was introduced a few years ago, though it only applies to municipal schools. As discussed above a number of programmes were introduced in recent years to improve the quality of schools, many targeted at those with weak outcomes or operating under difficult conditions. This has included a quality assurance system directed at schools that accept the increased voucher subsidy for poor children, which was introduced recently. The new comprehensive quality assurance system for all publicly funded schools will build on this. Eventually the two systems will be merged.

It is commendable that a comprehensive quality assurance system will now be directed at all schools, as quality improvements are desirable across the whole system. Within the new system the Education Ministry would continue to be responsible for policy design and standard and curriculum setting. The *Consejo Nacional de Educación* comprised of independent education experts will approve the curriculum and the standards proposed by the Ministry. A new *Superintendencia de Educación* will be responsible for ensuring the compliance of schools with laws and regulations. It will have the power to ask the Ministry to nominate a provisional administrator for schools that are deficient several years in a row. It can also apply other sanctions that can ultimately result in the revocation of the official recognition of the school. It will respond to inquiries and investigate complaints from members of the school community and can function as a mediator. A newly created *Agencia de Calidad de la Educación* will be responsible for independent evaluation of students' learning outcomes and the performance of schools and their operators. The agency will also validate teachers' evaluation instruments. Negative evaluations and interventions by the Ministry can also lead to sanctions for schools which may ultimately lead to a revocation of their license. Both the *Agencia de Calidad de la Educación* and the *Superintendencia* are required to report the results to the public. The Quality Agency will also inform parents about students' learning outcomes.

The reforms have the potential to bring Chile closer to international best practice and this may help to raise the quality of its education system. But the government should be careful to ensure that the new agencies co-operate efficiently. The new institutional setup assigns clearly defined quality assurance responsibilities for each participant in the educational process to different agencies. Reporting requirements for all performance

evaluations are now spelled out, as are the consequences for schools falling short of expected standards, including support mechanisms and sanctions. Much will depend on how this system is implemented. The number of agencies that will now have to co-operate and interact efficiently is rather large. While it can be an advantage to have a system of checks and balances, there is also a risk that the process could become bureaucratic and cumbersome with a costly duplication of tasks. The government should closely monitor the interaction of the newly created agencies and merge some of them if this helps avoid a duplication of tasks.

A law proposal also foresees a strengthening of technical-pedagogical assistance again by creating a number of new services. A new *Servicio Nacional de Educación* would help private subsidised and municipal school providers implement policies and assure quality improvements. In addition, the government plans to transfer the management authority for public schools from municipalities to local educational authorities. These can comprise one or more municipalities and will have access to qualified staff for technical-pedagogical and for administrative and financial tasks. Staffing the authorities responsible for municipal schools appropriately is commendable, as differences in municipal resources had formerly created serious inequalities in the capacity of municipalities to effectively run their schools. Some wealthier municipalities have been able to sustain large and well qualified staff focusing on administrating education and sometimes taking over technical-pedagogical supervision and support, otherwise located at the Ministry, based on well developed municipal education plans. In contrast, rural and geographically remote municipalities can barely maintain a small group of staff and these are often not dedicated exclusively to education (OECD, 2004). Allowing municipalities to team up can be efficient when they are located close together so that they can reap economies of scale. The benefits are less clear for remote, rural communities that are located far from each other and the implementation of the law should be adjusted accordingly.

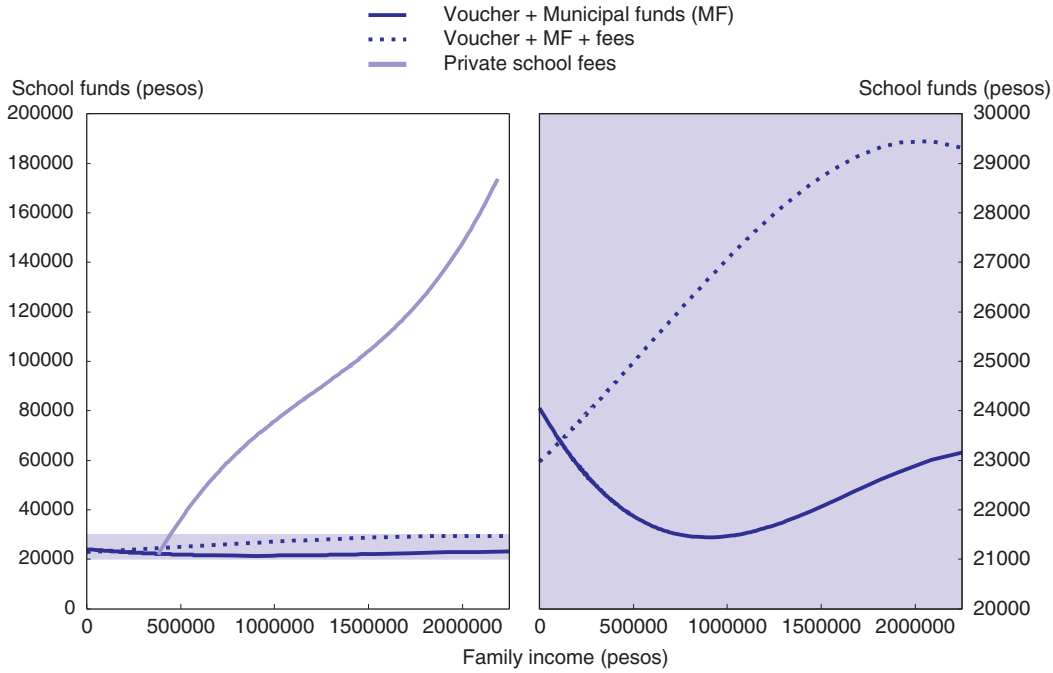
School supervision and support for improvement should be available to all publicly funded schools. It is not clear how the quality assurance system is going to work exactly as a number of laws have not yet been passed, but given that quality is wanting across the whole system, it will be important to apply quality assurance mechanisms even-handedly. The new agencies should evaluate all publicly funded schools in the same way along with their teachers and their management. There should be no differentiation between school types for offering support or applying sanctions. For private fee-based schools there should be a certification process to ensure that they comply with minimum standards.

Equity issues need to be addressed

Increasing public resources directed at poorer children is important to raise their results…

While helping raise resources for investment in education, the high share of private spending raises equity issues in the context of a highly unequal income distribution. While education spending is reasonably efficient in Chile (Schwellnus, 2009) it is low by international standards, especially public spending (see Figure 4.3). The shared financing mechanism described in Box 4.1 attenuates the difference in resources per pupil invested between the publicly subsidised and the private fee-based sector slightly, but resources invested in municipal school children are lower still (Figure 4.8), although they were recently raised substantially for the poorest children. Moreover, the base voucher was increased by 15% in 2008. These recent changes are not accounted for in Figure 4.8, which

Figure 4.8. **School funds per student depending on family income (CLP 2001)**



Source: "Vouchers, Inequalities and the Chilean Experience", González P., Mizala A., Romaguera P., Occasional Paper Series N.94, National Center for Study of Privatisation in Education, Teachers College, Columbia University, 2004.

StatLink http://dx.doi.org/10.1787/776803220432

depicts the situation in the Metropolitan region of Santiago in 2001. Because of the top-up fee system free school choice depends in fact a lot on ability to pay. While there is a grant system for private subsidised schools to ensure that some poor children can have access to schools with top-up fees that are out of reach for them, there is no such system for private fee-based schools.

It is appropriate for Chile to invest more public resources in education. Because of the strong inequalities persisting in the society and the stratification of the school system, Chile has to make greater efforts than richer and more egalitarian societies to achieve comparable results. The impact of individual socio-economic background on education outcomes is particularly strong in Chile, thus more efforts and resources are required for poor children to reach adequate educational outcomes. Moreover, the impact of the socio-economic background of classmates on individual schooling outcome is also strong (Ammermueller and Pischke, 2009; Hanushek *et al.*, 2003; Vigdor and Nechyba, 2006; Schneeweis and Winter-Ebmer, 2007). In fact, results with PISA data suggest that this effect is even stronger than the effect of students' individual socio-economic background (OECD, 2007a and Box 4.5) implying that the cost of educating poor children is even higher when they are concentrated as in municipal schools in Chile and in some of the private subsidised schools that are located in poorer areas. After having attracted a lot of private resources to the school system, increasing public money that is efficiently spent is likely to have higher returns than increasing private expenditure even further. Chile can best raise the skill level of its population as a whole by raising schooling outcomes for the poor.

Against this background the government's initiative to raise the base value of the voucher, while increasing it substantially for the poorest children, is welcome. The base value of the voucher was increased by 15% in 2008. This is the first time that it has been increased beyond the inflation rate. At the same time, the voucher is now differentiated by the socio-economic background of children with a substantial increase of resources directed at the poorest children and some extra payments for schools where these children are concentrated (Box 4.4). There is a quality assurance system, including improvement plans for schools that want to accept this voucher. If the extra money is well spent, it could increase the chances of poor children receiving high-quality education. It will also make education financing a little less regressive at the lower end of the income distribution, although top-up payments by parents at private subsidised schools will remain in place and it would be very difficult for the government in the short run to close the financing gap between publicly funded and private fee-based schools.

Box 4.4. **Extra money for poor children: The *Subvención Escolar Preferencial* (SEP)**

The *Subvención Escolar Preferencial* (SEP) subsidy introduced in 2008 involves financial support and follow-up for schools that enroll disadvantaged students. Acceptance of the extra voucher is voluntary and it works as follows:

- The subsidy for vulnerable students is increased substantially over and above the otherwise essentially flat per capita rate of the voucher, and there is additional financial support for schools with a high proportion of these disadvantaged students. Disadvantaged students are identified through socio-economic criteria already implemented in the country to target social policies.
- Schools receiving the SEP have to design a Plan for Educational Improvement (PME), with targets for progress in educational outcomes in a period of 4 years and measures to help students lagging behind. SEP schools cannot select students by ability or socio-economic background, nor can they impose tuition fees on SEP students.
- Schools applying to the preferential voucher are classified as "autonomous", "emerging" and "recovering" schools, based on SIMCE results and, to a lesser extent, other performance criteria. Schools classified as autonomous are largely free to design their own educational improvement plan, although they remain accountable for results, especially for disadvantaged students. By contrast, schools in the last two categories are subject to supervision by the Education Ministry with a relatively prescriptive PME as a framework. Extra money for "recovering" is conditional on PME implementation and improvement in educational outcomes. Failing to reach the emerging category after 4 years may trigger revocation of the eligibility for subsidies of all kinds.
- There is technical assistance for school improvement including through certified private providers and an education quality assessment system for which there is public access. Parents are informed about the progress of their children and their school.

An autonomous school where less than 15% of the students are disadvantaged students receives approximately a 50% increase in the school subsidy for each vulnerable child. If the concentration of disadvantaged students is at least 60% schools can receive approximately an extra 10% of the base voucher for every student, including those who are not classified as vulnerable.

... and can be developed further to invest more in children who need it most

The government should also evaluate whether there is scope to develop the *Subvención Escolar Preferencial* (SEP) further to direct more public resources at more children with limited means. The extra subsidy for poor children invests more in the poorest children, but this could be developed further. One way would be to make the voucher more generally dependent on income (Beyer, 2009) or on socio-economic background (Sapelli, 2006). Rather than withdrawing the voucher subsidy depending on the top-up money that parents pay, it would be withdrawn depending on parents' income or socio-economic background, for example by creating several income brackets that would receive an increasingly lower subsidy. Over time, Chile could then increase the voucher for all children, while keeping it progressive, if it wishes to increase public spending on education. In the longer term, this would be a way to gradually move away from the shared financing mechanism, which may be worth considering, although this is not feasible in the short term given the large amount of private resources flowing into the system. Yet, cross-country empirical evidence suggests that a large share of privately operated schools has a positive impact on PISA results, but only if the share of public financing remains high (Wößmann, 2005). In contrast, school systems with a high share of private financing achieve weaker results than others.

Free school choice should depend less on the ability to pay and a more progressive voucher would be an opportunity to achieve this. There is a grant system for public subsidised schools, but more money could be devoted to it to help a larger number of children to attend schools that are currently beyond their reach. Another, probably more effective option would be to make the voucher more dependent on income as outlined above and require schools to accept all children with a maximum top-up payment that would be zero for the poorest children, in line with current laws, and increase gradually across the different income brackets. This would replace the system whereby schools can set top-up payments freely as long as they remain below a certain threshold. This system should be calibrated so as to limit a negative impact on work incentives that could arise from such a progressive school subsidy system.

The government should ensure that the extra money for poor children is well spent

The government should evaluate results and offer support to schools to ensure that the extra money is well spent; this may require extra efforts to reach remote schools. It will be important to identify which tools work for schools with vulnerable students to improve their results and which ones do not. The government should therefore provide for independent evaluation of methods employed to enhance the learning of vulnerable students. It could think about experimental application of some new methods limited to a group of schools or a region to allow for a robust evaluation of the efficiency and effectiveness of these tools. This would help identify good practices and disseminate them through the system. Schools with SEP students are also likely to need managerial and technical-pedagogical assistance. The government already provides technical assistance to design school improvement plans, which is welcome (Box 4.4). However, first evaluations of the scheme suggest that schools with limited administrative capacity and those in remote rural areas, where technical assistance is scarce, shied away from applying for the SEP voucher (Elacqua *et al.*, 2009). Reaching these schools is likely to require extra efforts, *e.g.* strengthening the capacity of the Ministry of Education's staff located at the provincial level and making sure that they can travel even to remote schools or making extra funds

available so that private technical assistance agencies can send staff to assist these schools.

Good teachers and good school leadership skills will be the key to improve learning outcomes of students falling behind. Research suggests that while effective teaching is particularly helpful for low performers, they are often less likely to receive it (OECD, 2005; Darling-Hammond, 2000). One good use for the extra resources would be to increase wage incentives for teachers of proven excellence to teach at these schools. Another important element for good results is capable educational leadership. Chile has already launched a promising programme to train principals, and it should develop this further. Principals in many schools are overburdened by administrative tasks and have not enough time to supervise their teachers and elaborate methodological directions. Another good use for the extra funds could be to provide principals with sufficient staff to delegate administrative tasks and train them continuously to develop their educational leadership skills.

It will also be important to enhance methods that identify students at risk of falling behind and help them catch up. For this, Chile can look at other countries' experiences and its own. In Finland, a system with consistently high outcomes and equity, well-trained teachers identify these students and give them extra support either one-on-one or in small groups. If that is not sufficient, teachers' assistants and especially trained special education teachers will provide extra support under the supervision of the teacher. Close to 30% of the student population receive support in this way each year (OECD, 2007b). If all of these measures fail, a multi-disciplinary team comprised of the teachers and social workers, psychologists and representatives of health and public housing authorities, if necessary, work out a plan of support. Hiring more special education teachers at schools that receive the extra voucher may be another good use of this money to help students at risk of falling behind to catch up. A family of methods called formative assessment, whereby teachers concentrate on students' progress towards learning goals rather than their absolute level of attainment, while employing varied instruction methods to meet diverse student needs, has also proved very successful in improving the results of students at risk of failure (Black and William, 1998; OECD, 2007). Reading recovery, a short-term one-on-one intervention to help low achieving third graders catch up to their peers (Burroughs-Lange, 2000; Brooks, 2002), is a further method that has proved very successful. Finally in Chile, school reinforcement programmes for vulnerable children provided by charity organisations have been effective in improving these children's grades (Contreras and Herrera, 2007). Grade repetition, in contrast, is costly and not very effective and it should be limited (OECD, 2007b).

Further measures could attenuate stratification and improve equality of opportunity

Vulnerable students in particular stand to gain a lot in Chile if they were given more chances to learn in schools with a higher socio-economic background. While the effect of a student's socio-economic on her learning outcomes is strong in Chile, the impact of other children's socio-economic background on it is even stronger (Box 4.5). This in itself would suggest that all children, including those with weak socio-economic background, should be given a chance to study with higher-ability peers. A number of studies find that the peer effect, as measured by the average ability of students in a class or the average socio-economic background, is stronger for weaker students (Schindler-Rangvid, 2003; Levin, 2001; Sacerdote, 2000; Zimmer and Toma, 2000), although others find no such asymmetric effects (*e.g.* Ammermueller and Pischke, 2009).

Box 4.5. **Effects of individual and school socio-economic background on schooling outcomes in Chile**

Parental socio-economic background is an important determinant of students' learning outcomes probably because parents from more advantaged backgrounds tend to impart a richer vocabulary on their children (Willms, 2002), which is an important basis for acquiring further knowledge, and they are also more likely to have high expectations for their children and promote their learning success. The socio-economic background of other children in the same school is also often found to have an important effect on learning outcomes (OECD 2007a). This may be due to peer effects, *e.g.* because pupils are more likely to dedicate themselves to learning if their peers do. In addition, it could be due to contextual effects, because schools with students of higher socio-economic background are likely to have fewer disciplinary problems, better teacher-student relations higher teacher morale and a climate that is more oriented towards higher performance (*e.g.* Baker *et al.*, 2002).

Table 4.1 shows the coefficients of a regression of PISA science scores of Chilean students on their individual socio-economic background, as measured by the PISA Index of Economic Social and Cultural Status (ESCS) and the average socio-economic background of children in the same school. Both are highly significant. As in many OECD countries the effect of schoolmates' socio-economic background on pupils' learning outcomes is even stronger than their own. Column 3 includes the standard deviation of the ESCS-index as a measure of school diversity. The coefficient is not significant, suggesting that school diversity has no impact on learning outcomes in Chile.

Table 4.1. **Effect of socio-economic background on PISA outcomes**

ESCS index	(1)	(2)	(3)
Individual socio-economic effect	37.237***	11.826***	11.364***
	[1.699]	[1.265]	[1.583]
School socio-economic effect		46.996***	23.997***
		[3.002]	[8.935]
School diversity			–25.895
			[24.001]
N	4 989	4 979	2 906
R-squared	0.25	0.34	0.32

***robust at the 1% significance-level.
Note: The dependent variable is the PISA science score. Regressions are least-squares using weights for students' sampling probability. Boostrapped robust standard errors , shown in brackets, are clustered by school. All regressions include a constant. Control variables (results not shown) as in Causa and Chapuis (2009).

Results of a regression that divides the Chilean student population into students with high, medium and low socio-economic background suggest that the impact of school socio-economic background is particularly strong for pupils with low socio-economic background. However, dividing the sample by ability, as measured by PISA scores, instead results in a higher impact of the school socio-economic effect for the highest-ability children.

Box 4.5. **Effects of individual and school socio-economic background on schooling outcomes in Chile** *(cont.)*

Table 4.2. **Impact of school socio-economic background by tertiles of the ESCS-Index**

	ESCS tertiles			PISA scores tertiles		
	Low	Medium	High	Low	Medium	High
	(1)	(2)	(3)	(4)	(5)	(6)
School socio-economic effect	0.800***	0.607***	0.744***	0.182***	0.084***	0.294***
Standard error	[0.110]	[0.102]	[0.084]	[0.055]	[0.030]	[0.044]
Controls	Individual, school and ESCS index					
N	969	956	981	921	1 008	977
R-squared	0.19	0.22	0.35	0.083	0.052	0.194

Note: Dependent variable is the PISA science score. Regressions are least-squares using weights for students' sampling probability. All regressions include a constant. *** $p < 0.01$. Boostrapped robust standard errors, shown in brackets, are clustered by school. The 4 individual and 12 school control variables are the same as in Causa and Chapius (2009). The sample is divided in three quantiles based on the ESCS index (Columns 1 to 3) or PISA scores (Columns 4 to 6).

In particular, there is evidence that a less stratified system would be one element in reducing the especially strong impact of socio-economic background on schooling outcomes in Chile. A number of studies have shown that the impact of parental background on schooling outcomes is stronger in school systems that track students by ability early in their school career (Wößmann, 2007; Hanushek and Wößmann, 2006; Schütz *et al.*, 2005), which certainly happens *de facto* in Chile. While Brunello and Checchi (2007) find no such effect of early tracking on literacy, they do find that it increases the impact of parental background on educational attainment and labour market outcomes. Meghir and Palme (2005) found a significantly positive effect of the abolishment of tracking in Sweden in the 1950s on the educational attainment and earnings of individuals with low-skilled fathers, while earnings of individuals with high-skilled fathers were negatively affected. The effect of early tracking on average outcomes is less clear, with some studies finding positive and others negative effects, while most find no significant effect at all (Meier and Schütz, 2007). PISA results for Chile presented in Box 4.5 suggest a strong school socio-economic effect, while a greater diversity of backgrounds in a school has no effect on learning outcomes, a somewhat controversial result that is however confirmed by a number of studies (Causa and Chapuis, 2009; Hanushek *et al.*, 2003; Schindler Rangvid, 2003, Vigdor and Nechyba, 2006, Schneeweis and Winter-Ebmer, 2007). Together these results suggest that a more integrated school system could be beneficial, especially for students from vulnerable socio-economic backgrounds without necessarily hurting those with a stronger background. For equality of opportunity it will be important to create a school system with high academic expectations, encouragement and support for all students and equal chances to attend schools with high-ability peers.

The prohibition of selection as foreseen by the *Ley General de Educación* is welcome. Given the undesirable consequences of stratification for equality of opportunity, selecting students based on their socio-economic background or prior academic outcomes should not be encouraged. Poor parents may feel more confident trying to enroll their children in

the schools that they deem best for their children if they know that they cannot be turned away based on their socio-economic background. Through its new *Superintendencia de Educación* the government should ensure that discriminatory selection practices by schools are identified and that the law to prohibit selection is enforced. Requiring oversubscribed schools to apply lotteries may be the safest way to avoid cream-skimming and attenuate segregation.

The government could consider prohibiting selection by ability or proxies thereof, including socio-economic background, for secondary school admission, as well. The argument used against this is in Chile is that some highly selective municipal schools have improved social mobility for children who are admitted to them (González and Mizala, 2006). This argument essentially refers to a few selective public schools in Santiago, including the *Instituto Nacional*, which have consistently helped students from lower socio-economic backgrounds to access good universities and jobs. However, this argument has to be treated with caution. Research about selective *versus* comprehensive school systems in the UK has shown that the effect on the schooling outcomes of "borderline" children who just make it into selective schools can indeed be very positive, although high-ability students seem to perform just as well in comprehensive schools. Yet, this has to be weighed against negative effects on students who narrowly fail to gain access to these schools (Schagen and Schagen, 2001; Boaler *et al.*, 2001). Rather than keeping the practice of selecting children it would be preferable to create a climate of high achievement and aspirations for all children in less segregated schools.

The increased subsidy for vulnerable children could help attenuate the stratification of the school system, and this would be welcome. However, it remains to be seen whether the monetary incentive that comes with the extra voucher is sufficient for schools that attract parents based on the high socio-economic background of their children to water down this advantage. Schools who receive SEP children will not be allowed to collect fees from them. The mean school fee in private subsidised schools is relatively low, a little more than 10 USD (Gallego and Hernando, 2008), or about one eighth of the base voucher of a full day primary school, but it can be much higher than that. The extra subsidy for poor children increases the base voucher by 50% (Box 4.4) and a bit more for schools with a high concentration of poor children, but at the upper end, parents' co-payments can increase it by more than that. So in pure monetary terms, the incentive should be sufficient for some schools, but not for others, especially considering that vulnerable children are more difficult to teach, so schools may require more money to be willing to accept them. Moreover, schools that now attract parents because of the favourable socio-economic background of their students may fear that accepting poor children could reduce this advantage. The government should monitor whether the SEP voucher is sufficient for good schools to accept vulnerable students and to educate them effectively. If needed, the extra voucher subsidy should be increased for all schools.

However, the scrutiny that the government has foreseen for schools that enter the SEP system and accept the extra subsidy, but not for others, may be a disincentive to accept it. In fact, as long as the government leaves it to schools whether they want to accept the extra voucher, while attaching strong strings to this, incentives for reputed schools to accept poorer children risk being weakened. Therefore, the government should integrate the quality assurance system for SEP schools quickly into the new national quality assurance system for all schools. First, evaluations of the scheme show that mainly schools who already educate many poor students have applied to the scheme, while more selective

schools did not (Elacqua *et al*., 2009). The government should require all schools to accept the SEP subsidy without extra fees levied on the parents. Otherwise, there is a risk that the voucher will mainly provide more resources to schools who teach vulnerable students already today. While this is welcome, an important opportunity to provide free school choice for the poor and attenuate the strong stratification of the Chilean school system would be weakened.

The government could work towards opening private fee-based schools at least to some children whose parents cannot afford the high fees. Today, schools that receive children from the wealthiest families are practically removed from the rest of the education system because their high fees are out of reach for most others. Learning conditions are exceptionally favourable in these schools due to the strong socio-economic background of their children and their considerable resources which are far above those at publicly funded schools. Evidence from the UK suggest that the most deprived children, but also others, gain significantly in terms of schooling outcomes when they attend the most advantaged schools (Noden and West, 2009; Zimmer and Toma, 2000). At a minimum, private fee-based schools should be allowed to accept some voucher children with no top-up fees or reduced fees depending on their parents' ability to pay, provided that they accept laws and regulations applying to private subsidised schools. Currently, only schools whose fees do not surpass a threshold of around USD 125 are allowed to accept voucher children, and this particular rule could be softened. Since many private fee-based schools may not want to accept voucher children to avoid watering down the advantage of the high socio-economic background of their students, the government could also go a step further and impose quotas regarding a minimum number of voucher children on private fee-based schools. The government could also establish a grant-system to be co-financed by private fee-based schools similar to the one that exists for public subsidised schools. Transport subsidies, although expensive, could also help children from poorer backgrounds to become more mobile and help them attend high-quality schools that are not close to their homes.

Investing more in preschool education to enhance equality of opportunity

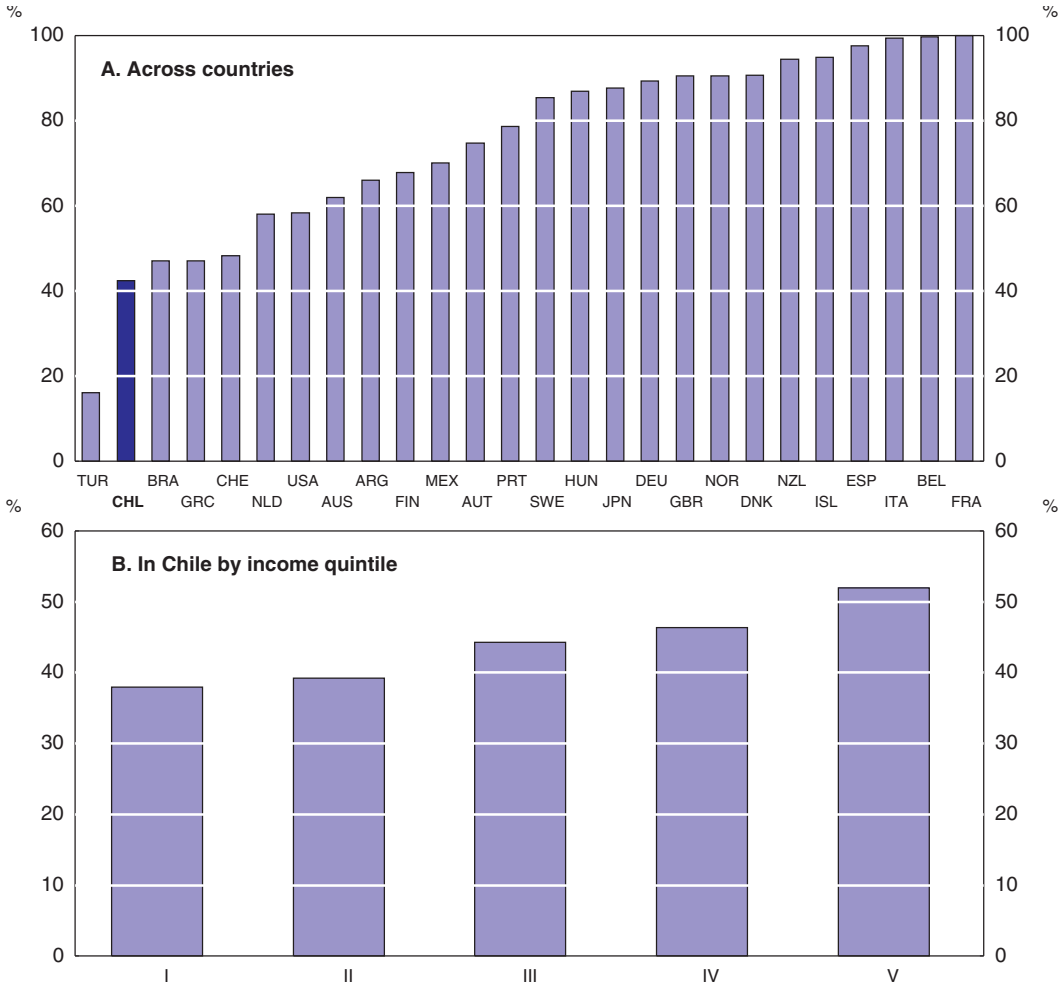
One efficient way to improve on inequalities in education and reduce the impact of socio-economic background on results is to invest more in preschool education. Fundamental cognitive and non-cognitive abilities are built in the early years of childhood. Yet, children from disadvantaged backgrounds receive much less cognitive and emotional stimulation to develop these, producing a gap in abilities already in early years (Heckman and Masterov, 2007). This has been shown to be decisive for learning abilities later on (Carneiro and Heckman, 2003) as well as for labour market opportunities and earnings (Currie and Thomas, 2001). Yet, there are ways to attenuate these inequalities. Early intervention, *e.g.* high-quality preschool centres and home visits to help parents mentor their children, has been shown to be highly effective in strengthening the abilities of disadvantaged children permanently (Heckman and Masterov, 2007; Campbell *et al*., 2002; Albornos Cabezas *et al*., 2005). The positive impact of a high-quality preschool education has also been shown to be stronger for children who start with weaker abilities (Connor *et al*. 2006), indicating that it can be a good way to close learning gaps.

The government has made the expansion of access to preschool education a policy priority and this is welcome. It has doubled spending on preschool education between 2005 and 2010 to increase the number of subsidised kindergarten places by 55% and to create

70 600 new places in nurseries. The voucher subsidy has been extended to children of age four. In addition, the *Chile Crece Contigo Programme* includes assistance for vulnerable families to enhance the psycho-social development of their children from birth to age four and free access to childcare and preschool education for children from the 40% poorest families. This is important progress because participation in preschool in Chile is low by international standards (Figure 4.9, Panel A), especially so for children from weak socio-economic backgrounds (Figure 4.9, Panel B). In part, this may be linked to the fact that the private share in education financing is relatively high, making it more difficult for children from poor backgrounds to attend preschool. Facilitating access to preschool education for poor families can be a cost–effective measure to improve learning outcomes for those who need it most.

Figure 4.9. **Preschool participation rates**

2006



Source: MIDELPLAN, Encuesta CASEN 2006 and OECD, *Family Database*.

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It is important to stress, however, that the positive impact of preschool education depends much on its quality. There are some indications that this could be improved in

Chile and this will be particularly important when rapidly expanding coverage, as this will make it more difficult to assure high levels of quality. The number of hours spent in preschool education, the quantity and quality of language directed at children, the number of children per adult and the training of educators have all been shown to be important factors in the linguistic, cognitive and emotional development of children (National Institute of Child Health and Human Development (NICHD), 2000; Connor *et al.,* 2006). There are some indications that there is scope to improve the quality of preschool education in Chile. Some studies suggest that the quality of preschool education is not always sufficient to help children from poor socio-economic backgrounds progress and some of them even fall behind (Eyzaguirre and Le Foulon, 2001). More concretely, other studies have found that the time dedicated to exposing children to language in Chilean kindergartens, *e.g.* teaching them new words, letters or phonetics, and contact with reading is scarce. This is independent of the kindergartens' results in the SIMCE, the socio-economic background of its children or the type of the provider (Eyzaguirre and Fontaine, 2008; Strasser *et al.,* 2009). This is important, because the focus on stimulation of language has been shown to be one of the most important determinants for a positive impact of early childhood education on the cognitive skill development of children (NICHD, 2000; Ramey and Ramey, 2006; Rolla and Rivadeneira; 2006).

Information and research about initial education for preschool personnel is scarce, but there are some suggestive indications that there remains room for improvement. On the positive side, preschool teachers are generally educated at universities combined with practice in preschool institutions and many practitioners have followed training programmes. However, initial education programmes differ a lot in content, suggesting that there is no shared notion what a preschool teacher should know. There seems to be insufficient emphasis on general education, which is a problem, given that preschool educators are among the first people to expose children to learning. There is also insufficient emphasis on the special requirements needed for educating children from vulnerable backgrounds, interaction with their parents and the specific needs at nursery schools (García-Huidobro, 2006). Developing standards for initial education of preschool teachers that emphasise these aspects and making it a pre-requisite for accreditation would be an important step ahead. Certifying the skills of preschool teachers through external exit exams could help to ensure the quality of their initial education. There is also a need to improve the preparation of auxiliaries practicing at preschools because they are often the ones who interact most with the children. Due to the weaknesses in Chile's secondary school system, the basic language, reading and numeracy skills of both aspirant preschool teachers and auxiliaries are likely to be insufficient in many cases. Including remedial classes in the early years of their initial education to help them close these gaps could help.

While raising the quantity of preschool education is welcome, it will also be important to make sure that the quality of preschool education is adequate. The new quality assurance system is a good opportunity to raise standards in preschool education and ensure that they are met through systematic evaluation and support for preschool institutions that need to improve. In particular, it would be important to set quality standards that include devoting sufficient time to linguistic interaction between educators and children. The government could consider evaluating some new methods in preschool education by limiting application initially to a region or a group of preschools and compare

outcomes between children who had access to the new methods and a comparator group that had not.

Inequalities in the access to high-quality tertiary education and financing need to be addressed

While Chile has achieved much in terms of better access for lower-income students to tertiary education, there is still a big gap to be closed between different income groups. Tertiary education coverage has expanded rapidly in recent years and this has also benefitted students from lower-income families. However, the gap in tertiary education coverage between the highest and the lowest income quintile has increased, not narrowed (Figure 4.1, Panel B). A breakdown by institutions shows that lower-income students are underrepresented in all types of tertiary education institutions, except maybe technical training centers (OECD, 2009).

Not surprisingly, the strong inequalities remaining in the school system translate to inequalities in the access to high-quality tertiary education. Chances to enter high-quality universities and access to financial aid for them are very much dependent on results at a university entry exam, called *Prueba de Selección Universitaria* (PSU). There are some recent improvements, however, as the government has expanded access to financial aid for technical education without a minimum PSU score requirement. The PSU is organised by the Council of Rectors (*Consejo de Rectores*) of a group universities which, like many other tertiary education institutions, make entry dependent on exam results. When the *PSU* was introduced, replacing an aptitude test, the idea was that testing the national curriculum instead would help hold schools accountable for teaching the curriculum successfully. In principle, this is a good idea. Not surprisingly given PISA and SIMCE results, PSU exam results are strongly dependent on family income and the school type that pupils attended, with the highest failure rates among low-income pupils and those who attended municipal schools. Yet, while the exam has laid bare the deficiencies of the Chilean school system, more needs to be done to hold schools accountable for this. In fact, most Chileans do not seem to expect schools to prepare pupils adequately for the university entry exam, as those who can afford it take private tutoring to prepare for it.

Children from high-income families do not only go to schools that prepare them better for the PSU test, but they are also more likely to receive private tutoring that is out of reach for lower-income families. Tutoring is available at institutions called *pre-universitarios* that cost USD 40-50 per months and teach students typically during the last one or two years of secondary school during evenings or week-ends or by arrangement with (private) schools during school hours (OECD, 2009). There are hardly any scholarships or subsidies available for these institutions. That means that those students who have been least well prepared by their schools for the PSU test are also least likely to have access to extra resources to close this gap.

The government needs to take steps to hold schools accountable for the results of their pupils in the university entry exam and to improve the preparation of low-income students. The most important step will be to improve the quality and equity of the schooling system, but this will take time. As the new quality assurance system is implemented, PSU exam results of their pupils should serve as one quality indicator for the evaluation of schools. The government will need to intervene in those schools where it identifies shortcomings. More immediately, the government will have to find means to better help young people with university aspirations at disadvantaged schools to prepare

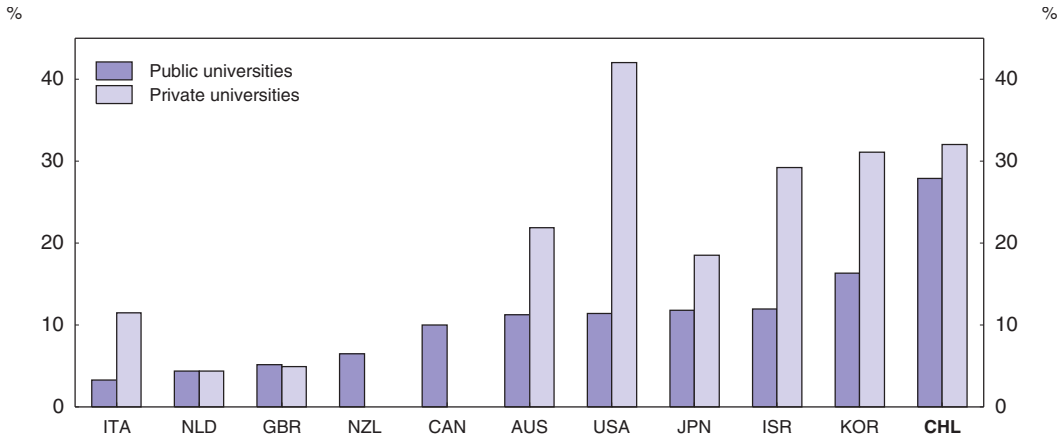
for the university entry test. The government and universities have made free online courses available to prepare for the exam, which is a first step. However, students with knowledge and cognitive skills gaps due to insufficient preparation at their schools are likely to be in need of special tutoring to reap their full potential at the exam. Options would include developing *pre-universitario* type programmes at disadvantaged secondary schools with teachers who have proven skills of identifying and filling pupils' knowledge gaps. Alternatively, the government could fund institutions outside the school system or special access courses at the university to perform the same task.

The university entry exam should be evaluated to see whether it is really a good predictor for success at the university or whether reforms are needed. One problem with the PSU is that its adequacy and that of its critical scores to properly evaluate the aptitude of students to successfully follow tertiary education courses have not been systematically evaluated (OECD, 2009). This should be done and if needed the test should be developed further to be sure that it identifies the skills that are needed to be successful at university. The Catholic University of Chile and some partners have recently designed a complementary university entry exam and first evaluations revealed that this has the potential to reduce the socio-economic gap in university admission, while being a good predictor for later success at the university (Santelices, 2009). This suggests that it could be possible to develop adequate exams that make access to university easier for more disadvantaged children.

Over time the government should consider replacing the university entry exam with a national school leaving exam as the prime criterion for entry into tertiary education institutions. This could establish a closer link between test results and the school that is responsible for them, making it easier to reach the goal that has been pursued with the introduction of the PSU. There is evidence that central curriculum-based exit exams are strongly and positively related to student academic performance (Wößmann, 2005; Bishop, 2006). To allow students to show in more detail their knowledge and their ability to apply it, the school exit exam could be a bit more in-depth than the multiple-choice PSU, including verbal and non-verbal reasoning.

Tuition fees are very high in Chile in international comparison (Figure 4.10); at the same time access to scholarships and financing is more difficult than elsewhere. Chile has put in place an extensive programme of financial aid for low-income students, including scholarships, maintenance grants and student loans. Government funding for scholarships has increased a lot over the past few years, by close to 70% over 2007-2009. However, until recently only 13.8% of students enrolled in tertiary education received a scholarship compared with more than 50% in the United States. Less than half of the students from the lowest two income quintiles received scholarships and these were not sufficient to pay university fees (OECD, 2009). There is a wide array of scholarships available with different admission criteria. There are also two student loan schemes, which can make up for the relatively low coverage of scholarships. However, until recently most of the financial aid was directed at students who were set to study of one of the *Consejo de Rectores* universities, while financial aid for studying at technical training centers was much scarcer. This was a problem because low-income students are more likely to study at technical training centers. It is therefore welcome that the recent increase in scholarships was to a large extent directed at students engaging in technical studies. In addition, one of the loan schemes has shifted its focus beyond *Consejo de Rectores* universities. Nevertheless, the government should streamline financial aid, ideally into a single scholarship and a

Figure 4.10. **Tuition fees**
As a percentage of per capita GNI



Source: OECD, *Reviews of National Policies for Education: Tertiary Education in Chile*; IBRD/World Bank.
StatLink http://dx.doi.org/10.1787/777142616386

single student loan scheme, which should be available for students to study at any tertiary education institution that is accredited. Income-contingent repayment schemes would also lower barriers to finance tertiary education for lower-income students who are more likely to engage in technical studies often leading into lower paying jobs.

Conclusion

Chile still has some way to go to improve the quality of its education system and converge with OECD standards. At the same time, the government has introduced many promising policy initiatives. A number of them are quite innovative. If Chile pursues this path further it should be possible to achieve improvements over time.

Box 4.6. **Recommendations to improve education outcomes**

Improving teaching

- Evaluate whether teacher salaries should increase further to make the profession more competitive and define teacher career paths for publicly funded schools with promotions closely linked to performance.
- Implement teacher evaluation in all publicly funded schools.
- Make sure that deficient initial teacher education programmes are closed.
- Upgrade the subject content knowledge of teachers, especially in the upper grades of primary schools, through richer curricula in initial teacher education programmes and post-graduate programmes for practicing teachers.
- Develop an induction programme over time.
- Introduce external exit exams for initial teacher education.
- Strengthen educational leadership by continuing efforts to train principals and by making sure they have sufficient time for teacher supervision and support.
- Better prepare teachers for instructing pupils from different backgrounds and helping those at risk of falling behind.

Box 4.6. **Recommendations to improve education outcomes** *(cont.)*

Enhancing the functioning of competition and complementary quality assurance mechanisms

- Make sure that the prohibition of selection is implemented by schools, consider extending it to secondary schools and strengthening it by requiring lotteries at oversubscribed schools.
- Create more equal and sufficiently flexible conditions for teacher employment and pay at all publicly funded schools.
- Make sure that teachers, school managers and parents have sufficient information how to read results of the national student achievement test, SIMCE, and complement it with richer quality indicators, including qualitative information and possibly value-added indicators.
- Implement the legislated quality assurance system, while making sure that the newly created agencies interact efficiently.
- Make sure that all municipalities have qualified administrative and technical-pedagogical support staff.

Improving equity

- Consider introducing higher subsidies at decreasing rates for several income brackets and limit top-up payments dependent on parents' income.
- Evaluate results of the increased subsidy for poor children systematically and inform and support schools to make sure that successful methods are disseminated quickly.
- Require all publicly funded schools to enter the *Subvención Escolar Preferencial* system with extra subsidies for poor children and use the new quality assurance system to exercise scrutiny for all schools on an equal footing.
- Consider allowing private fee-based schools to accept some voucher children, with no or limited top-up fees or imposing quotas.
- After significantly expanding access, systematically evaluate quality at preschools and make sure that initial education prepares preschool teachers and aides to enhance children's abilities and learning skills.
- Hold schools accountable for their students' university access exam results and improve children's preparation for the exam at schools. Evaluate the university entry exam, consider enriching it beyond multiple-choice and moving to a centralised school exit exam over time.
- Streamline scholarships and student loan schemes and make them available for all accredited tertiary education institutions.

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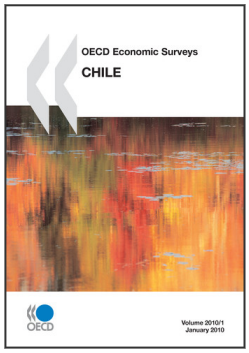

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