

## Chapter 8. Financing

*This chapter examines the availability of financial resources for tertiary education and the impact of the innovative financing reforms that Chile has implemented in recent years. Financing is discussed from aspects such as resource mobilisation, utilisation and allocation. The equity of the financing system, particularly as regards funding for disadvantaged students, has already been considered in Chapter 3.*

*The chapter closes with a series of findings and recommendations, including recommendations addressing the need to (i) design a long-term vision outlining the role of the government in tertiary education funding, (ii) increase public funding for tertiary education on both equity and quality grounds, and (iii) harmonise existing allocation mechanisms to eliminate the present funding discrimination between CRUCH and non-CRUCH institutions.*

### Introduction

The continuous expansion and modernisation of the Chilean tertiary education system is dependent on the availability of financial resources and the existence of allocation methods that encourage innovative behaviour among tertiary education institutions. In this context, it is worth observing that Chile has implemented several first generation reforms that no other Latin American country – not even many Western European countries – have managed to put in place. Indeed, the introduction of substantial tuition fees in public universities, the rapid growth of private tertiary education, the use of innovative allocation mechanisms such as the voucher-like AFI (*Aporte Finscal Indirecto* – Indirect Public Grant), the competitive fund for quality improvement and the performance contracts, and the establishment of the guaranteed student loan programme in partnership with private banks are path-breaking reforms that put Chile among the small group of nations with a sophisticated financing architecture. To assess the impact and

coherence of these financing reforms, this chapter examines the following dimensions:

- Resource mobilisation: is Chile investing sufficiently at the tertiary education level?
- Resource allocation: are public resources distributed in a manner that encourages innovation and rewards performance?
- Resource utilisation: are available resources used in an effective manner?

Bearing in mind that Chile is about to become a member of the OECD, this chapter relies as much, for benchmarking purposes, on comparisons with industrial countries as with Latin American nations.

## Resource mobilisation

### *Public funding*

Chile opted many years ago for a mixed funding approach to education, whereby budgetary resources would be complemented by significant contributions from students and their families. Thus, even though public spending on education as a proportion of GDP has increased from 2.4% to 3.4% between 1990 and 2006, it is still well below the OECD average of 5.4%. Official statistics indicate that education accounts for less than 20% of total government expenditure. At 14% in 2006, the share of tertiary education within the education budget is also on the low side, compared to the OECD and EU averages of 23% and 24% respectively.

Table 8.1 Government expenditure on education

Year	Public Expenditure on Education as % of GDP	Education as % of Government Budget	Higher Education as % of Education Budget
1990	2.4	11.1	17.5
1995	2.7	13.5	17.3
2000	3.9	16.2	14.2
2001	4.1	16.7	13.9
2002	4.2	17.3	13.7
2003	4.1	17.8	12.9
2004	3.9	17.9	12.9
2005	3.7	17.4	16.0
2006	3.4	16.7	14.2

Source: *Indicadores de la Educación en Chile 2006*, Chilean Ministry of Education Portal

As a result, public spending for tertiary education is markedly low, as can be clearly seen from benchmarking Chile against other OECD countries. As Table 8.2 shows, at about 0.3% of GDP, Chile has the lowest level of all comparator countries, well below the OECD and EU averages of 1.3% and 1.1% respectively.

Table 8.2 Expenditure on tertiary education as proportion of GDP (2004)

Countries	Total Expenditure for all Levels of Education	Public Expenditure on Tertiary Education	Total Expenditure on Tertiary Education
Denmark	7.2	1.8	1.8
Finland	6.1	1.7	1.8
Sweden	6.7	1.6	1.8
<b>OECD average</b>	<b>5.7</b>	<b>1.3</b>	<b>1.4</b>
France	6.1	1.2	1.3
<b>EU19 average</b>	<b>5.4</b>	<b>1.1</b>	<b>1.2</b>
Israel	8.3	1.1	1.9
Austria	5.4	1.1	1.2
Ireland	4.6	1.0	1.2
United States	7.4	1.0	2.9
Germany	5.2	1.0	1.1
Netherlands	5.1	1.0	1.3
New Zealand	6.9	0.9	1.5
Mexico	6.4	0.9	1.3
Portugal	5.4	0.9	1.0
Spain	4.7	0.9	1.2
United Kingdom	5.9	0.8	1.1
Brazil	3.9	0.8	1.0
Australia	5.9	0.8	1.6
Italy	4.9	0.7	0.9
Korea	7.2	0.5	2.3
Japan	4.8	0.5	1.3
<b>Chile<sup>1</sup></b>	<b>6.4</b>	<b>0.3</b>	<b>2.0</b>

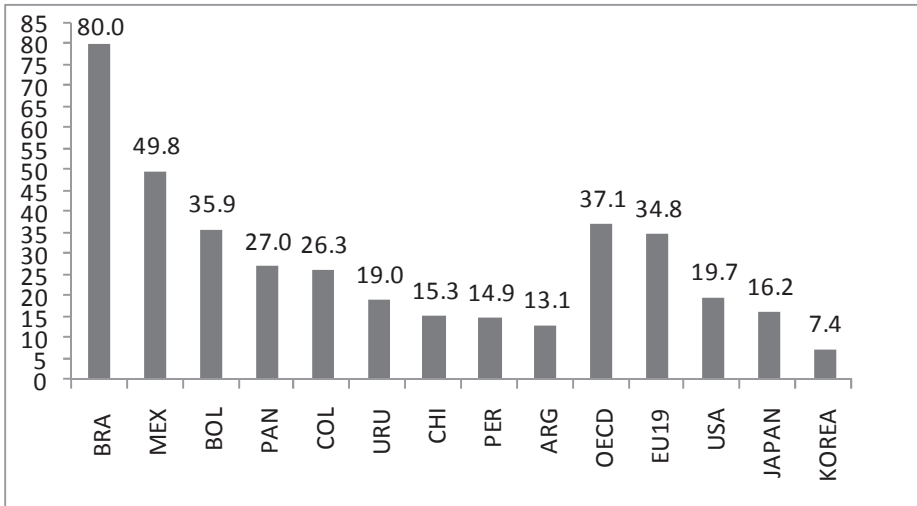
Note: 1. 2005 data

Source: OECD *Education at a Glance*, 2007

Another way of benchmarking Chile's spending performance consists of looking at per student expenditure (Figure 8.1). At 15%, Chile is among the bottom countries in the Latin American region. Even dismissing the extreme case of Brazil which is known for its high unit costs and relative lack of efficiency in resource utilisation (Salmi, 2008), Chile's per student expenditure represents less than a third of Mexico's, and less than half that

of its much poorer neighbour, Bolivia. Similarly, it is less than half the level of per student public expenditure devoted by OECD and EU economies.

Figure 8.1 Public Spending Per Student as Proportion of Per Capita GDP (2005)



Sources: 1) CINDA (2007) *Educación Superior en Iberoamérica*; 2) OECD (2007) *Education at a Glance*

The low level of public funding is not a new phenomenon. In the past ten years, Chile's expenditure has evolved in sync with the rest of the world. Per student expenditure rose by 7% in real terms between 1995 and 2004, compared to 9% for OECD countries on average. This happened despite a significant growth in enrolment, reflecting the fact that, to compensate for the low level of public funding, the government of Chile adopted in the early 1980s a resource mobilisation strategy based on the following two pillars:

- Universal cost sharing in public universities and technical institutions.
- Rapid growth of private tertiary education, including non-university institutions.

### ***Cost-sharing***

Chile was the first country in Latin America to introduce tuition fees in public tertiary education institutions in the early 1980s. It is still today the only country in the region with significant fees at the undergraduate level, as

illustrated by Table 8.3. In the other countries, any attempt to introduce or increase tuition fees has been met with strong political opposition, as vividly illustrated by the ten-month strike at the UNAM, Mexico’s flagship university, in 1999.

**Table 8.3 Tuition fees in public universities in Latin American countries (2006)**

No Fees	Argentina, Brazil, Cuba, Guatemala, Honduras, Nicaragua, Venezuela
Less than USD 500	Bolivia, El Salvador, Mexico <sup>1</sup> , Peru
Between USD 500 - 1 000	Colombia, Costa Rica
More than USD 3 000	Chile

*Note:* 1. Only in a few universities in the Northern states (Aguascalientes, Baja California, Nuevo Leon, Sonora)

*Source:* OECD *Education at a Glance 2007* for Chile; for the other countries, field visits by Jamil Salmi

As the benefits incidence analysis carried out in Chapter 3 has shown, it appears that, from an equity viewpoint, the imposition of tuition fees in Chile has had a slightly progressive character because of the availability of scholarships and subsidised loans for low income students.<sup>1</sup> By contrast, the Latin American tertiary education systems that continue to offer “free” education, such as in Brazil or Peru, are more likely to be more regressive because of the high proportion of students from the wealthiest families who gain access to the top public universities without contributing to cover the cost of tuition.

Beyond the Latin American region, Chile stands out today among the few nations in the world where students and their families pay more than USD 1 000 a year to study at public universities, as illustrated by Table 8.4.

1. This does not mean, however, that sufficient resources are available for scholarships, grants and student loans. As will be seen later in the chapter, there is a strong need for additional public funding to ensure that no academically qualified student from a low income family finds it difficult to enter or stay in tertiary education for economic reasons.

Table 8.4 **Average fees in public universities in OECD countries and Chile**  
(USD converted using PPPs – academic year 2004-2005)

> USD 5 000	USA (5 027)
USD 3 000-4 000	Australia (3 855), Canada (3 464), <b>Chile (3 140)</b> , Japan (3 920), Korea (3 883)
USD 2 000-3 000	Israel (2 658), United Kingdom (1 859)
USD 1 000-2 000	Italy (1 017), New Zealand (1 764), Netherlands (1 646)
USD 500-1 000	Austria (837), Belgium (574), Spain (795)
< USD 500	France (160), Turkey (276)
No significant fees	Czech Republic, Denmark, Finland, Ireland, Iceland, Norway, Poland, Sweden

Source: OECD *Education at a Glance 2007*; Chilean Ministry of Education; Background Report

Chile's level of tuition is even higher in relative terms, as shown by Table 8.5 which compares the level of fees in Chile with those OECD countries that have significant levels of cost-sharing (annual fees higher than USD 1 000). It clearly shows that Chile's 28% represents the highest level of fees in the world relative to the country's wealth, compared to only 11% in the United States, 12% in Japan and 16% in Korea. Even in private universities, the effort of Chilean families to pay for tuition is the highest of all countries after the United States.

Table 8.5 **Tuition fees as percentage of per capita Gross National Income**

Country	Public Universities	Private Universities
Australia	11.3%	21.9%
Canada	10.0%	n/a
Japan	11.8%	18.5%
Korea	16.3%	31.1%
New Zealand	6.5%	n/a
United Kingdom	5.2%	4.9%
United States	11.4%	42.0%
Italy	3.3%	11.5%
Netherlands	4.4%	4.4%
Israel	12.0%	29.2%
<b>Chile</b>	<b>27.9%</b>	<b>32.0%</b>

Sources: OECD *Education at a Glance 2007*; Background Report; World Bank World Economic Indicators.

### *Resource diversification in public universities*

To compensate for the low level of public resources, the public universities have to rely on other income sources besides tuition fee payments. They have therefore been forced to seek additional resources through donations, contract research, consultancies, continuing education and other miscellaneous activities. Table 8.6, which shows the distribution of income by funding source in all CRUCH universities, documents this exceptionally high level of resource diversification. On average, the universities receive only 17% of their income from government sources. Paradoxically, some private universities receive a much higher share of public funding than many public ones. The University of Concepción, for example, receives more than twice as many public resources as the University of Chile.

**Table 8.6 Distribution of income of CRUCH universities by funding source (2006)**

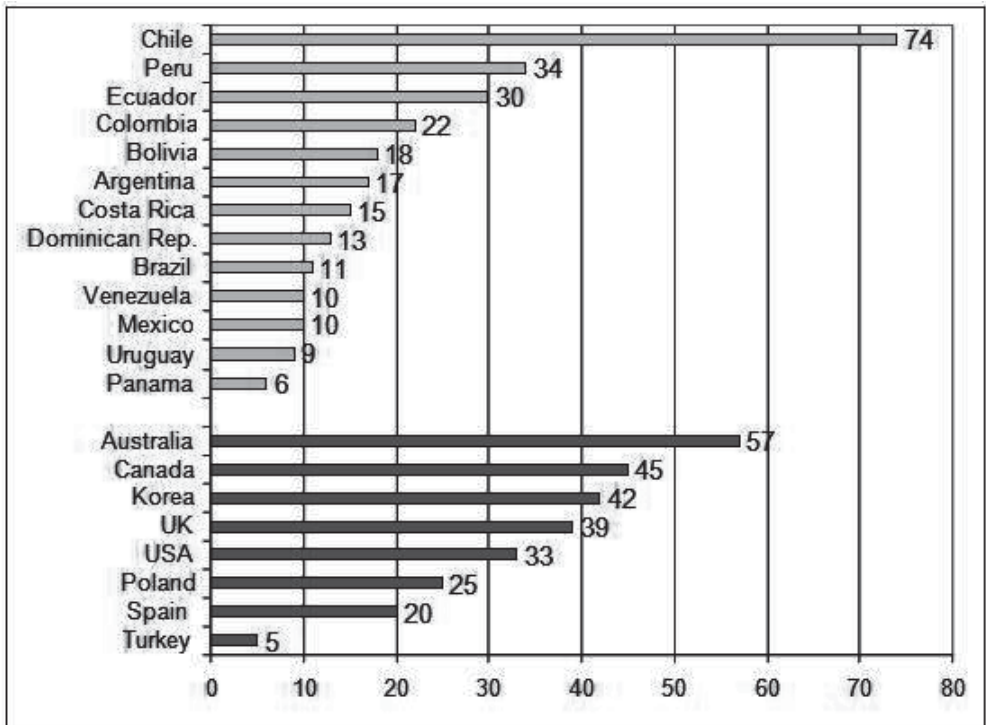
University	Government support <sup>1</sup>	Tuition fees	Self generated resources
U. Austral de Chile	47.1%	23.2%	29.7%
U. Tec. F. Sta. María	33.5%	25.3%	41.2%
P. U. Católica de Valparaiso	33.3%	43.6%	23.2%
U. Metropolitana de Cs. de la Ed.	33.1%	37.8%	29.0%
U. de Tarapaca	30.3%	36.3%	33.5%
U. de Antofagasta	30.1%	40.3%	29.6%
U. de Talca	29.8%	40.5%	29.7%
U. de Concepción	26.9%	23.4%	49.7%
U. Católica del Norte	24.7%	29.4%	45.9%
U. de La Serena	24.3%	27.9%	47.8%
U. Católica de S. Concepción	24.3%	54.3%	21.4%
U. de Atacama	19.7%	17.3%	63.0%
U. de Santiago de Chile	19.0%	44.1%	36.9%
U. de Magallanes	14.3%	31.9%	53.8%
U. del Bio-Bio	13.7%	42.7%	43.6%
U. de Chile	11.7%	21.7%	66.6%
P. U. Católica de Chile	11.6%	29.3%	59.0%
U. Arturo Prat	11.5%	72.5%	16.0%
U. Católica de Maule	10.6%	46.6%	42.8%
U. Playa Ancha de Cs. de la Ed.	8.2%	40.4%	51.4%
U. Católica de Temuco	7.7%	52.6%	39.7%
U. de Valparaiso	7.5%	52.0%	40.6%
U. de La Frontera	7.1%	36.6%	56.3%
U. de Los Lagos	6.1%	52.8%	41.1%
U. Tec. Metropolitana	5.6%	39.0%	55.4%
<b>Total</b>	<b>17.3%</b>	<b>33.7%</b>	<b>49.0%</b>

Note: 1. Direct (AFD) funding + indirect funding (AFI) + FCSU repayments

Source: CRUCH statistics

Chile is again unique in this regard. As Figure 8.2 indicates, the Chilean public universities are the best performing institutions of their kind when it comes to income generation. The proportion of self-generated resources (including tuition fees and research contracts) is by far higher than in any other Latin American country. Peru, which comes in second place with 34%, is way behind Chile's 74%. Chile is also doing much better in this respect than any of the OECD countries for which data are available.

Figure 8.2 Self-generated income in public tertiary education institutions as a proportion of total resources (2005)



Note: Self-generated income represents principally tuition fees and income from consultancies and research contracts.

Sources: CINDA. For Poland and Turkey, database of the International Comparative Higher Education Finance and Accessibility Project, downloaded on 2/21/2008 from <http://www.gse.buffalo.edu/org/IntHigherEdFinance/>. For US, National Center for Education Statistics database, downloaded on 2/20/2008 at [http://nces.ed.gov/programs/digest/d06/tables/dt06\\_338.asp](http://nces.ed.gov/programs/digest/d06/tables/dt06_338.asp).



## Private tertiary education

Up until the early 1980s, Chile had only 6 private universities. But since 1981, the government has actively encouraged the emergence of a large private sector. As Table 8.7 indicates, today, 47 private universities (including the six Catholic universities, which are technically private, and three others which, like the Catholic universities, are in CRUCH) operate alongside the 16 public universities, enrolling 63% of all university students. In addition, it should be noted that the non-university sector (CFTs and IPs), which enrolls 29% of all tertiary education students, is entirely private. Altogether, the private sector represents today 73% of all students compared to 64% in 1994.

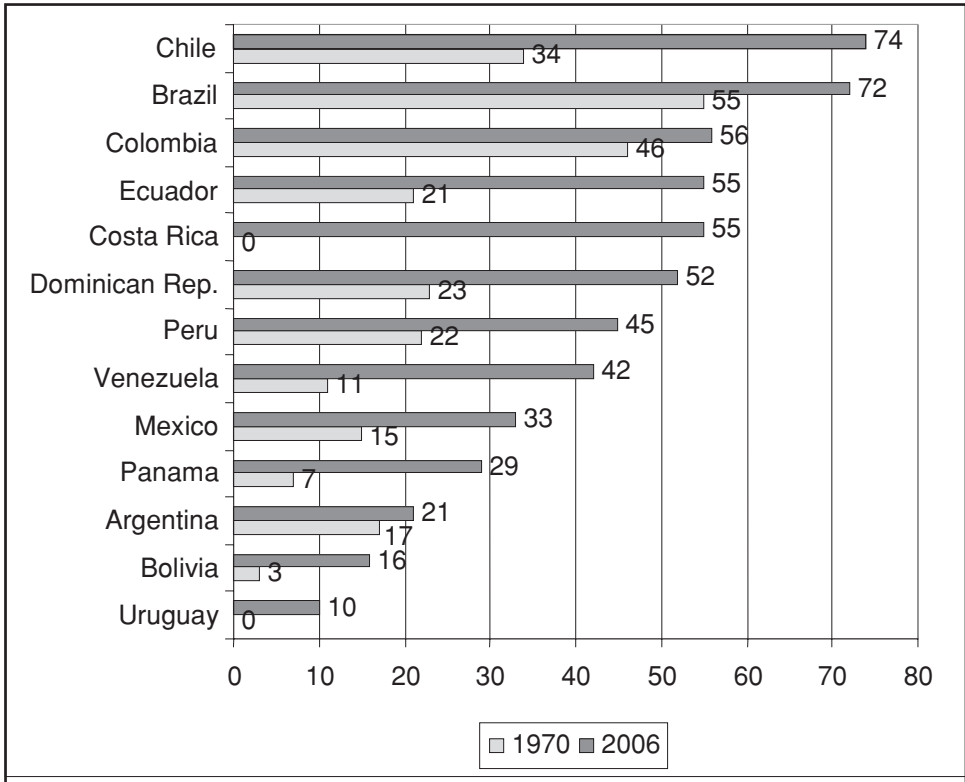
Table 8.7 **Growth of private sector institutions and enrolment**

Academic year	Private universities	
	% institutions	% students
1980		
1994	64.2	28.4
2000	75.0	
2005	73.8	62.6

*Source:* Background Report, IESALC report

Thus, the larger proportion of the increase in tertiary education coverage since 1981 has been made possible by the rapid growth of new private tertiary education institutions funded for the most part by the students and their families. While the growth of the private sector has been a feature of many Latin American countries, the increase enjoyed by Chile has been among the fastest in the region, as illustrated by Figure 8.3.

Figure 8.3 Evolution of share of private tertiary education enrolment (1970-2006)



Source: CINDA 2008 and Guadillo García 1998.

### Research funding

Notwithstanding increasing government interest in science and technology, as exemplified by the 2007 OECD *Review of Innovation Policies in Chile* and the government's own reports prepared by the Innovation Council, public R&D spending is small, both as a percentage of GDP and in absolute terms. Chapter 7 discusses the issue of low research funding, illustrated by Table 8.8, which has already appeared as part of Table 7.4. Chile's R&D investment, at 0.6% of GDP, is one third lower than Brazil's, although Brazil's per capita GDP is one third less than Chile's. Chile's R&D spending represents only 25% of the OECD average. It is also low relative to other countries with much smaller GDP per capita, such as

India which generates 17% more R&D spending with one third of Chile's per capita GDP.

Table 8.8 Gross expenditure on R&D as % of GDP

Countries	R&D as % of GDP, (2005 or latest available year)
Finland	3.5
Japan	3.3
Korea	3.0
US	2.6
OECD Average	2.3
EU27	1.7
China	1.3
Spain	1.1
Russia	1.1
Brazil (2004)	0.9
India (2004)	0.7
<b>Chile (2004)</b>	<b>0.6</b>
Mexico	0.5
Argentina	0.5
Colombia	0.5

Source: OECD Science, Technology and Industry Scoreboard 2007, OECD

Though recent statistics show that enterprises appear to carry out much more research and development than previously thought, the 2007 OECD *Review of Innovation Policy* noted correctly that the universities still play an important role in the Chilean research. A small group of universities receive almost 40% of total R&D expenditure. Within the university sector, the lion's share of research funding (FONDECYT and FONDEF grants) goes to three institutions: the University of Chile, the Catholic University of Chile and the University of Concepción account for 59% of all research funds among CRUCH universities. Almost all the other significant players in terms of university research are traditional CRUCH universities, including the Catholic University of Valparaíso, the Federico Santa María Technical University, the Catholic University of the North and Austral University. The newer private universities capture only 3.6% of the research funding going to universities. Most of it is captured by five institutions (Andrés Bello, U. del Desarrollo, U. de los Andes, Adolfo Ibanez, and Diego Portales), which are striving to develop high quality graduate programmes.

When it comes to research productivity, however, those universities which receive most funding are not necessarily the most efficient, considering their human capital stock. Table 8.9 measures the effectiveness of universities in competing for research funding by calculating the amount of research funds received per full time PhD faculty. Interestingly, the top

two universities (Arturo Prat and Los Lagos) are not among the traditional research leaders. In addition, a number of smaller regional universities are more successful than some of the more prestigious research universities in Santiago and Concepción. The University of Chile seems to be almost three times as effective as the other two heavyweights in the area of research, the Catholic University of Chile and the University of Concepción.

Table 8.9 Effectiveness in competing for research funding (2006 – CLP thousands)

Universities	Total Research Funding	Number of full-time PhD faculty	Research funding per faculty member
U. Arturo Prat	870 780	28	31 099
U. de los Lagos	1 108 950	38	29 183
U. de Chile	8 029 622	433	18 544
U. Católica de Temuco	1 081 700	29	14 818
U. de Magallanes	333 980	23	11 517
U. Austral de Chile	1 125 101	207	11 481
U. Técnica Federico Santa María	2 046 418	98	9 886
U. de la Frontera	199 715	73	8 683
U. de Concepción	1 009 671	426	7 950
U. de Santiago de Chile	1 593 005	206	7 733
U. de Valparaíso	3 107 655	58	7 295
U. de Antofagasta	402 385	80	6 938
U. Católica del Norte	506 413	127	6 330
U. Pontificia Católica de Chile	5 381 658	863	6 236
U. Pontificia Católica de Valparaíso	1 078 440	175	6 163
U. de Talca	502 312	102	4 925
U. del Bío-Bío	338 463	76	4 453
U. Católica de la Santísima Concepción	220 803	38	3 807
U. de la Serena	135 701	58	3 571
U. de Tarapaca	123 548	59	2 094
U. Metropolitana de Ciencias de la Educación	48 782	36	1 220
U. de Atacama	36 088	20	1 002
U. de Playa Ancha de Ciencias de la Educación	27 925	35	798
U. Tecnológica Metropolitana	8 509	40	425
U. Católica del Maule	3 078	40	77

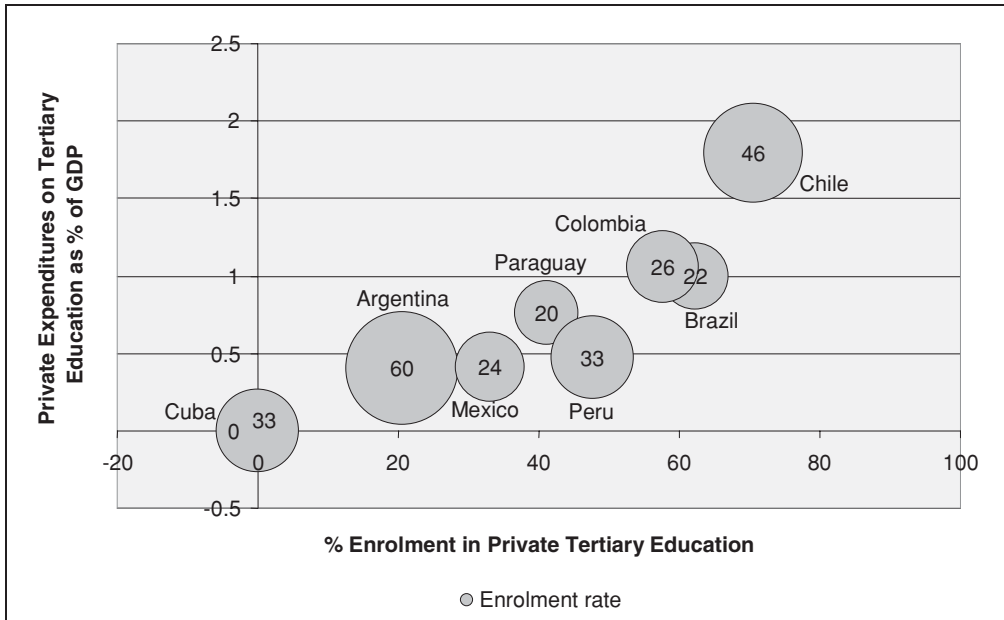
Sources: CRUCH and CONICYT statistics 2008.

### *Leveraging private Funding*

In summary, the rapid growth of tertiary education enrolment in the past two decades has been the result of an expansion strategy principally based on the mobilisation of private resources. Figure 8.4 captures the intensity of privatisation along two dimensions, the proportion of students enrolled in private institutions and the level of private expenditure. It shows unequivocally how Chile, more than any other Latin American country, has

successfully channelled private sector investment to establish tertiary education institutions and relied on a combination of tuition fees from students, research grants and contributions from companies to finance the operation of the tertiary education system. The size of each circle in the graph is proportional to the tertiary enrolment rate of the respective country.

Figure 8.4 Tertiary enrolment rates and degree of privatisation in selected Latin American countries



Source: UNESCO Institute of Statistics 2005.

In recent years, the country has even managed to attract foreign investment in the private tertiary education sector. It is estimated that at least 4 private universities have been purchased in recent years by international groups such as Apollo and Laureate.

From an international perspective, Chile is today the country that has achieved the highest leverage ratio in terms of complementing its public investment for tertiary education with private resources. Figure 8.5 shows that no other economy, including OECD countries such as Korea and Japan that have also used private investment as their main source of funding for tertiary education development, has a private / public funding ratio as high as Chile.

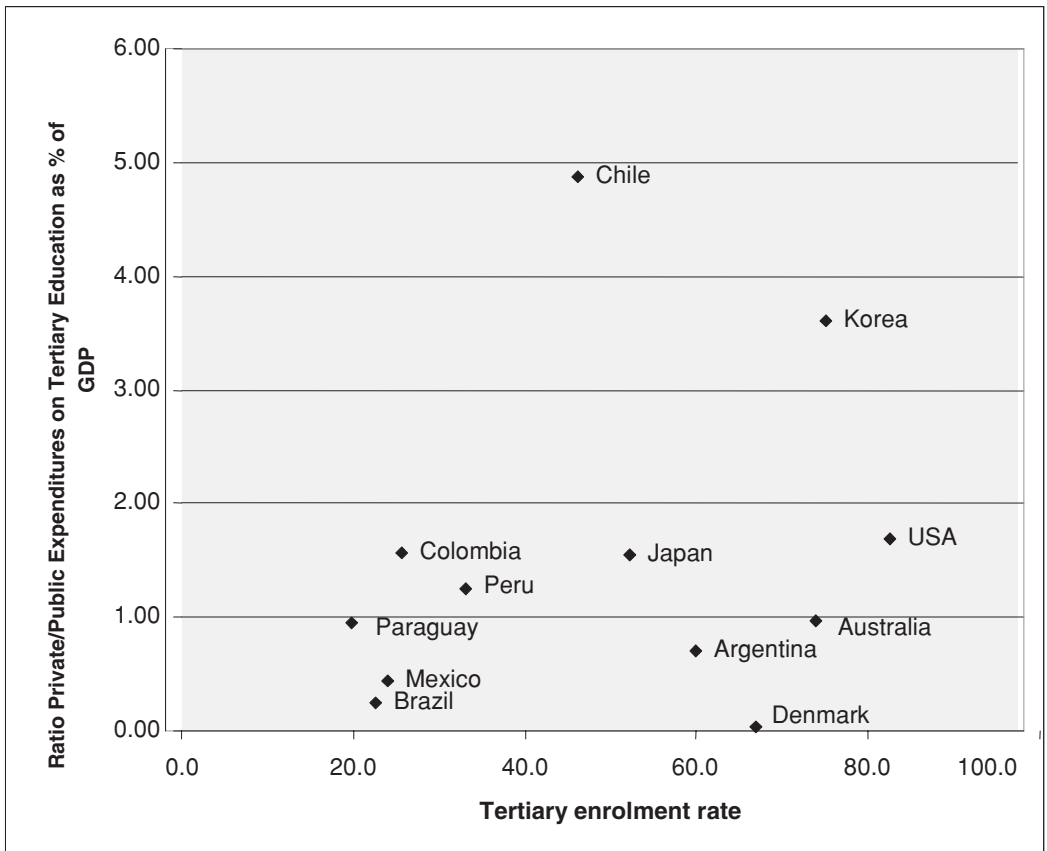
However, Chile's success in mobilising private resources does not eliminate the need to consider the implications of the relatively low level of public funding. In itself, it would not be a serious issue if the Chile tertiary education system could be considered to perform well on important dimensions such as equity and quality. But the acute social inequities analysed in Chapters 1 and 3, and the cost of tertiary studies to students in both the university and non-university sectors, are ample justification for substantial additional public funding for tertiary education. Furthermore, the government's plans to improve the competitiveness of the Chilean economy as it transitions into a knowledge-based economy call for expanding research activities in the Chilean universities, as emphasised in the report of the Innovation Task Force. This implies the development of first rate graduate programmes which, in turn, cannot be built up unless undergraduate education has the capacity to produce high quality graduates. There is therefore a strong rationale for raising the level of public funding on both equity and quality grounds.

The next steps are then to estimate the desirable level of public funding, decide what categories of institutions and students should be the beneficiaries of the increased funding, and assess what would be the most appropriate allocation mechanism(s) to achieve this purpose.

Whereas there is no iron rule to decide what would be the right level of public funding, one way to go about it could be for Chile to benchmark itself against the few countries, such as Korea and Japan, which have followed the same path of high private funding and high private enrolment to expand tertiary education in a sustainable way. This means that over the next few years Chile should plan to double its public investment in tertiary education in order to reach a level of public effort comparable to that of Japan.

There are two main options for choosing the beneficiaries of increased public funding. The government may want either to favour the public universities or to assign these resources against objective criteria linked to the equity and quality objectives pursued. Since this issue is directly linked to the types of allocation mechanisms that the government of Chile is relying on to distribute public resources for tertiary education, the pros and cons of each approach are examined in the next section.

Figure 8.5 Mobilisation of private resources as expansion strategy



Source: OECD and UNESCO statistics 2008.

## Resource allocation

*“Everybody is equal. But some are more equal than others.”*

George Orwell

### *Variety of public funding mechanisms*

While many if not most governments still rely on historical/negotiated budgets to transfer resources to their public tertiary education institutions, a small number of nations have introduced innovative approaches linking

resource allocation to some objective criteria that are increasingly performance-based. Some countries apply a funding formula, others allocate investment funds on a competitive basis, others employ performance contracts, and very few have pioneered a voucher-based allocation system (Salmi and Hauptman, 2006). But Chile is unique in that the whole range of possible allocation mechanisms, from the most traditional to the most innovative, can be found among the instruments used by the government to finance the tertiary education system.

Chile's allocation system is complex not only because of the number of instruments used but also because of the variety of eligibility criteria regarding the institutions and students who benefit from public resources in one way or another. To present the full range and diversity of existing public funding mechanisms, Table 8.10 outlines the main characteristics of each modality, including the eligibility criteria and amounts involved. In 2006, 56% of all public funding was transferred directly to both public and private tertiary education institutions, and 44% through the students in one form or another. Direct budget support represented only 37% of total public funding.

#### *Strengths and weaknesses of existing allocation mechanisms*

To analyse their strengths and limitations, Figure 8.6 organises these various mechanisms along the key dimensions of performance and competitiveness. Performance refers to whether or not the allocation mechanism is directly linked to some measure of results. The second dimension reflects the degree to which resources are allocated on a competitive basis. Following that logic, Quadrant 1 represents the most traditional allocation approach which is the budget entitlement (*Aporte Fiscal Directo* – AFD) going to the 25 CRUCH universities on a historical basis. The small portion of the AFD allocated on some objective criteria (5%) appears in Quadrant 2. Quadrant 3 regroups the direct and indirect allocation mechanisms that embody a combination of performance and competitiveness, such as the various competitive funds to which tertiary education institutions can apply and the range of grants, scholarships and loans that the better academically qualified students can receive. Finally, Quadrant 4 shows the other grants / scholarships that are linked essentially to particular social characteristics of the students. It also includes the donations that private contributors can make to tertiary education institutions with the incentives of a 50% tax break.



Table 8.10 Public funding mechanisms (2007)

Funding Mechanism	Beneficiary Institutions and Students	Amount (CLP million)	Proportion of Total Funding
<b>Direct Public Funding of Institutions</b>			
Entitlement ( <i>Aporte Fiscal Directo - AFD</i> )	CRUCH universities	122 714	34.0%
Competitive Funds I ( <i>MECESUP</i> )	CRUCH universities, technical institutions and accredited private universities in specific areas	26 352	7.3%
Competitive Funds II ( <i>Fondo de Desarrollo Institucional</i> )	CRUCH universities	1 631	0.5%
Performance Contracts <sup>1</sup> ( <i>Convenios de Desempeño</i> )	4 public universities	0	0.0%
Research Funds I ( <i>FONDECYT</i> )	All universities	23 236	6.4%
Research Funds II ( <i>FONDEF</i> )	All universities	11 371	3.2%
<b>Indirect Funding of Institutions</b>			
Vouchers ( <i>Aporte Fiscal Indirecto - AFI</i> )	Institutions attended by 27,500 top students according to PSU results (15% of new entrants) All institutions eligible	18 864	5.2%
<b>Student Support</b>			
Scholarships	62 800 students enrolled in CRUCH universities (12% of students)	40 000	11.1%
Subsidised Student Loan ( <i>Fondo Solidario</i> )	38 579 students enrolled in CRUCH universities	74 700	20.7%
Guaranteed Student Loan ( <i>Crédito con Aval del Estado - CAE</i> )	21 327 students enrolled in accredited institutions (20 CRUCH universities, 15 new private universities and 14 technical institutions)	41 720	11.6%
<b>Total</b>		<b>360 589</b>	<b>100%</b>

Note: 1. Actual disbursements on the performance contracts started only in 2008

Source: Country Background Report 2008, CINDA Chile report 2008, INGRESA 2008.

By using a great variety of allocation mechanisms, the government of Chile is able to pursue several important policy objectives at the same time: expansion of access through private sector growth (AFI, CAE), quality improvement (AFI, MECESUP, PC), and increased equity (Scholarships, FSCU, CAE). These funding mechanisms make some positive contributions:

- AFI provides, in theory, a strong incentive for tertiary education institutions to raise their quality, as they can receive additional resources and claim additional prestige by attracting the higher performing secondary school graduates. Chile is, with Kazakhstan, Georgia and Hungary, one of the very few countries in the world relying on this form of demand-side mechanism linked to the academic performance of incoming tertiary education students. A 2002 study of the impact of AFI (Bernasconi and Rojas) found a positive correlation between the reputation of universities as measured by the *Qué Pasa* ranking and the proportion of AFI students opting to study at these universities. The existence of the AFI mechanism has also pushed more non-CRUCH universities to adopt the PSU results as their principal selection criterion.
- Over the past ten years, MECESUP has evolved into a highly effective competitive fund to promote quality improvement and pedagogical innovations. By using objective criteria and procedures, overseen by an independent monitoring committee with international representation, the programme has successfully developed a culture of efficiency and transparency in investment allocation. It stands out as one of the most successful competitive funds the World Bank has been associated with.
- To complement the MECESUP projects which finance targeted innovations within university faculties and departments, the newly-introduced performance contracts aim to achieve the transformation of universities as whole institutions. While it is too early to assess whether the performance contracts will attain their goals, it is worth underlining that Chile has approached their use in an original way compared to the experience of other countries (France, Denmark, Austria, Spain, etc.) by starting with four pilots selected on a competitive basis. The lessons of the pilot phase will be evaluated before the performance contracts can be extended to the entire tertiary education system, not as a competitive mechanism like MECESUP, but as an instrument of the Ministry of Education to promote improvements in institutional performance measured against negotiated objectives and benchmarks.

Figure 8.6 **Matrix of funding mechanisms: dimensions of performance and competitiveness**

Negotiated allocations	
Entitlements (95% of AFD)	Funding formula (5% of AFD) Performance Contracts (Convenios de Desempeño)
Q1	Q2
No performance criteria	Performance based criteria
Q4	Q3
Need-based Scholarships (CoT, BNM, BZE, BI, BPR, BAES)  Donations (tax exemption article 69, law 18.681)	Merit-based Grants and Scholarships (BB, BJGM, BdP, BEA, BP, BM)  Merit-based Student Loans (FSCU, CAE)  Merit-based Vouchers (AFI)  Competitive Funds (MECESUP, FDI, FONDECYT, FONDEF)
Competitive mechanisms	

Source: Adapted from José Joaquín Brunner (2007) *Mercados Universitarios: Los Nuevos Escenarios de la Educación Superior*. Informe Final de Proyecto FONDECYT N° 1050138. Santiago de Chile.

- Competitive grants are the main source of university research funding and are largely channelled through four programmes: FONDECYT, which provides project-based support, FONDAP, which supports group of researchers, FONDEF, which supports research collaboration with industry and CORFOINNOVA, which provides support to research centres. This competitive approach to research funding encourages a culture of excellence through objectivity and transparency in resource allocation.
- Finally, as described in Chapter 3, Chile has a whole range of student aid programmes to increase equity (two grants programmes, ten scholarship programmes and two separate student loan schemes). The new student loan programme (CAE) presents three positive features. First, it allows the government to leverage private capital in a significant way. Over the first two years of operation (2006 and 2007), almost USD 200 million worth of loans were given to students for a government contribution of only 28 million dollars, representing a leverage ratio of 1

to 7.1. Secondly, by shifting the responsibility for financial guarantee against default to the universities themselves, it helps low-income students to access credit without the guarantee barrier that student loan schemes in many countries entail. Thirdly, by linking institutional accreditation to participation in the government accreditation process, it indirectly supports quality assurance in the tertiary education system.

At a systemic level, the financing architecture of the Chilean tertiary education system can be described as a three-pillar montage. The CRUCH universities' entitlements represent about a third of all public funding (32.3%); a fifth (19.0%) is allocated through performance-based mechanisms such as the funding formula (5% of AFD), the competitive investment funds (principally MECESUP) and the competitive research funds (CONICYT); finally, almost half of the resources (48.7%) are allocated through or in relation to the students themselves (AFI, scholarships and loans) who, in turn, pay tuition fees to the institutions where they elect to study.

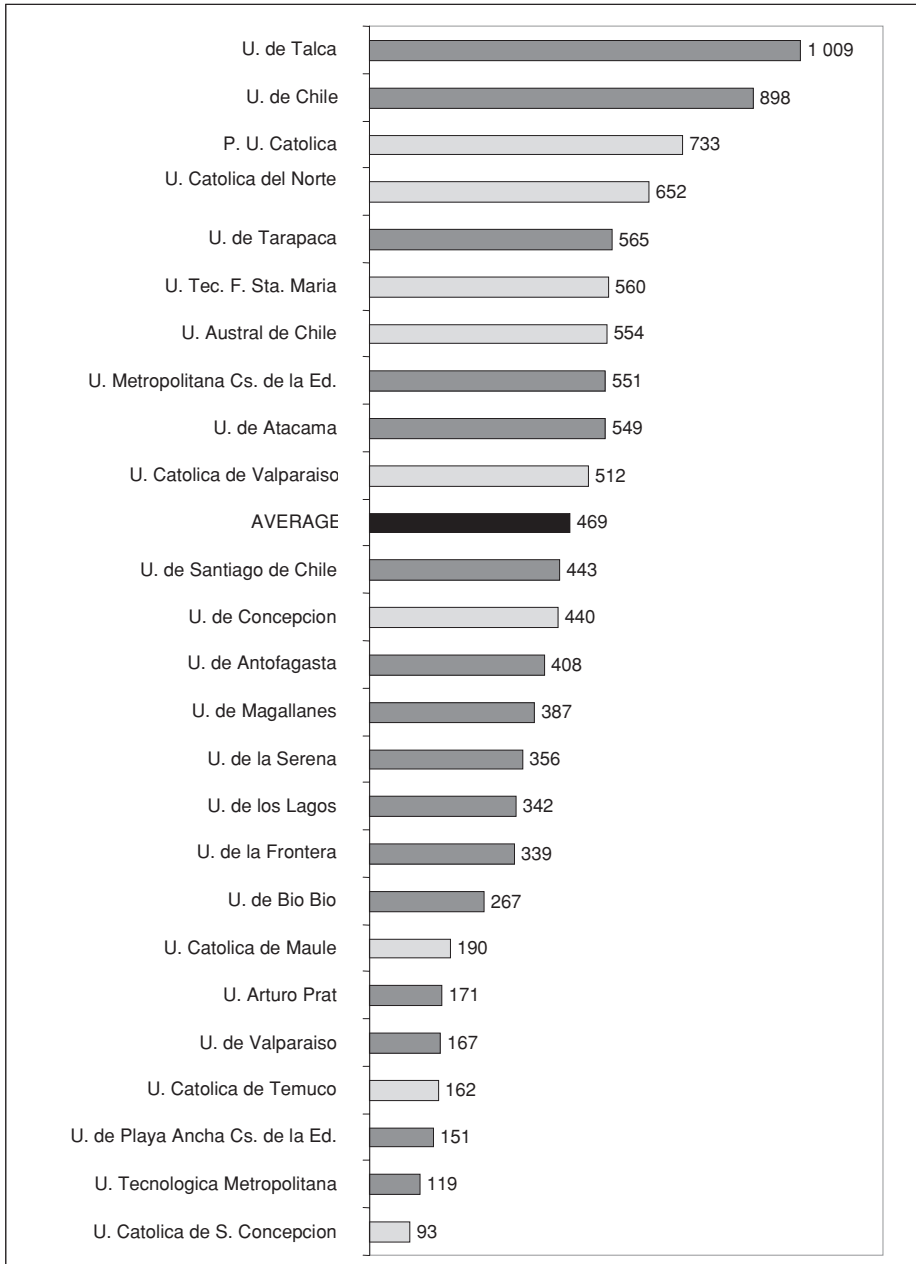
There are, however, several negative features attached to the various funding mechanisms. The first major issue is linked to AFD, the direct budget contribution to the 25 CRUCH universities. The lion's share of AFD (95%) is distributed without any objective criteria; only a small share (5%) is allocated following a formula that principally recognises the research performance of universities, focusing on the number of faculty with advanced degrees and scientific production measured by the number of publications by researcher. Figure 8.7, which shows the per-student allocation for each university, clearly illustrates the striking disparities among beneficiary institutions. The annual per student allocation ranges from USD 233 to 2 500. The University of Talca, the top recipient, receives more than twice the national average, and ten times more than the poorest university in the system. Eight universities get less than half the national average. Chile is unique in the world in having such variations among its public universities, and in having some private universities receiving significantly more public resources than many public universities, in both relative and absolute terms. These are serious distortions.

To illustrate the dysfunctional dimension of this dual distribution approach, Figure 8.8 presents a comparison of the distribution of resources between the first category (95%), which essentially reflects historical tradition, and the second portion (5%), which uses objective criteria through the funding formula described in the previous paragraph. The significant difference between the respective shares received by several universities under the two distinct mechanisms confirms that the overall distribution follows a flawed logic. For example, in the case of the University of Chile, the -4.91 figure indicates that if the university were to receive its entire

budget based on the funding formula criteria, its proportion of the total national budget would be lower by almost 5 percentage points. In other words, instead of receiving almost 21% of the entire government direct allocation, it would be entitled to only 16%. Because the share of the funding formula is so small, it does not serve its purpose of redressing the historical inequities of the system. The AFD therefore undermines the efficiency goals pursued with the other financing instruments (AFI, performance contracts, MECESUP).

In addition to the flaws that are inherent to the AFD mechanisms, the dichotomy between CRUCH and non CRUCH institutions results in a situation of *de facto* discrimination at two levels: first between private universities that receive public subsidies (AFD, MECESUP) because they are part of CRUCH and those that are not eligible, and secondly between the CRUCH students who benefit from more scholarship opportunities and have access to a highly subsidised loan scheme and the other students who can borrow money only through the guaranteed loan programme. A stark illustration of this unequal division of resources is the fact that close to three-quarters of the public subsidies going to private universities are captured by the private CRUCH universities (73.8%) even though these universities enrol only 19% of all students attending a private tertiary education institution.

Figure 8.7 AFD resources distribution among CRUCH universities  
(CLP 1 000)



Source: MINEDUC -- Public universities are shown in dark grey and private universities in light grey.

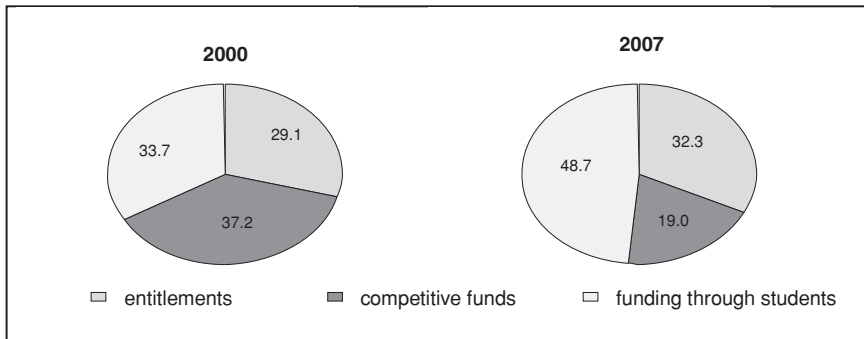
Figure 8.8 Comparison of 95% and 5% allocation for CRUCH universities  
(difference in percentage within overall distribution)



Source: Rector of University of Bío Bío presentation, 2008.

Viewed in the context of the overall tertiary education system, the CRUCH monopoly is inconsistent with the diverse and competitive nature of the system. It serves neither efficiency nor equity purposes. In that respect, it is worrying to observe that the relative share of the AFD entitlement has increased between 2000 and 2007 from 29% to 32% of total public funding (Figure 8.9).

Figure 8.9 Evolution of the distribution of public funding (2000-2007)



Source: Ministry of Education Statistics 2008.

The AFI has been criticised on several fronts. Even though there are indications that it may have helped indirectly to improve the quality of tertiary education by introducing some degree of competition among institutions in its earlier days of operation (Bernasconi and Rojas, 2002), there is a sense that today the universities and institutes that manage to attract AFI students are motivated more by publicity considerations than a genuine concern for higher quality. From an efficiency viewpoint, the fact that the AFI allocation has been frozen for the past twelve years, whereas the AFD increased by about 30% in real terms between 1995 and 2007, runs against the principle of allocating public resources on the basis of some measure of performance. In the early 1990s, about 30% of incoming students qualified for the AFI, but today that proportion has been halved.

From an equity viewpoint, PSU scores are highly correlated with socio-economic origin (Chapter 3). AFI operates therefore as a disincentive to take on students from underprivileged backgrounds, especially penalising tertiary education institutions in the regions. The fact that choosing to study at a CRUCH university gives students access to better student aid opportunities (scholarships and subsidised FSCU loans) also makes it more difficult for non-CRUCH private universities to attract top students.



### *Towards a more consistent allocation system*

The Chilean government's approach to funding tertiary education has evolved over the past two decades into a sophisticated system with a variety of mechanisms, including innovative ones. Viewed in the international context, the level of public funding is however quite low and there are inconsistencies among the various allocation mechanisms. As the government considers options to reform the financing system, using inputs from its own Presidential Advisory Council on Higher Education and the present OECD review, this may be an appropriate moment for Chile to define a long-term vision outlining the role of the government in tertiary education funding. This would guide decisions about the desirable level of public funding and the most efficient and equitable manner to distribute these resources among institutions and students.

With regard to the level of funding, the government of Chile could base the allocation of additional resources on the principles of strengthening the 'public good' mission of tertiary education and compensating for market failures. In the first instance, additional funding would focus on improving postgraduate education and research, in recognition of the long term external benefits accruing from a stronger science and technology base and a more cohesive society with a deep sense of shared values, which transcend the private benefits captured by individuals. In the second instance, sufficient resources would be mobilised to expand the student aid package needed to facilitate the participation of all academically qualified students from low income families. This would help overcome the capital market imperfections and information asymmetries that constrain the ability of individuals to borrow adequately to finance their studies.

The following specific measures could be envisaged in order to rationalise the overall funding system for tertiary education in line with the principles outlined above, and the directions established by the government of Chile in recent years with respect to linking funding with performance and stimulating healthy competition among all tertiary education institutions.

#### *AFD*

Given that AFD is not linked to performance criteria and indirectly discriminates against the majority of students enrolled at the tertiary level, the government of Chile should consider transforming AFD so as to address both these issues.

The least disruptive way to address the fact that AFD is not linked to performance would be to expand the formula-based part of AFD gradually

while at the same time reducing the research bias of the formula. A possible approach would be to follow the Dutch model which links resources to the number of graduates as a way of encouraging tertiary education institutions to be more efficient. This first scenario would address the fact that AFD is not linked to performance at present.

It would also be desirable to move towards eliminating the discrimination arising from AFD's payment only to CRUCH members and establishing a level-playing field. The new system would reflect the following two principles: (i) all Chilean students whose tertiary institutions meet essential quality and accountability requirements would be entitled to public subsidies through student aid, if personally eligible; and (ii) the arrangements for direct public funding to institutions would be consistent with the institutional diversity and competitive nature of the Chilean tertiary education system.

Once these principles are accepted, the government should weigh the pros and cons of various possible funding models to implement them, in the light of Chile's specific historical, political, economic and social circumstances. Three alternatives could be envisaged in the medium term.

- A differently configured dual system where only public tertiary institutions, *i.e.* the 16 existing public universities, would receive direct funding in return for fulfilling public good functions such as doctoral education and basic research in disciplines requiring expensive infrastructure investment. No private institution, including the nine other members of CRUCH, would receive direct funding. There would however be an expanded scholarship/student loan scheme for students enrolled in eligible private institutions. The eligibility criteria would be defined in terms of meeting quality assurance (positive evaluation by improved accreditation system) and financing accountability (independently-audited financial statements) requirements. The government would have the option of setting tuition fee ceilings in the public universities.
- A more extensive direct funding system where all accredited public and non-profit private institutions would receive core resources linked to their student numbers and some simple performance criteria such as the number of degrees conferred. Institutions willing to participate in the scheme could be required to implement a uniform fee structure or accept limitations on the fees they could charge, as well as meeting quality assurance and financial accountability requirements as above, and perhaps other conditions.

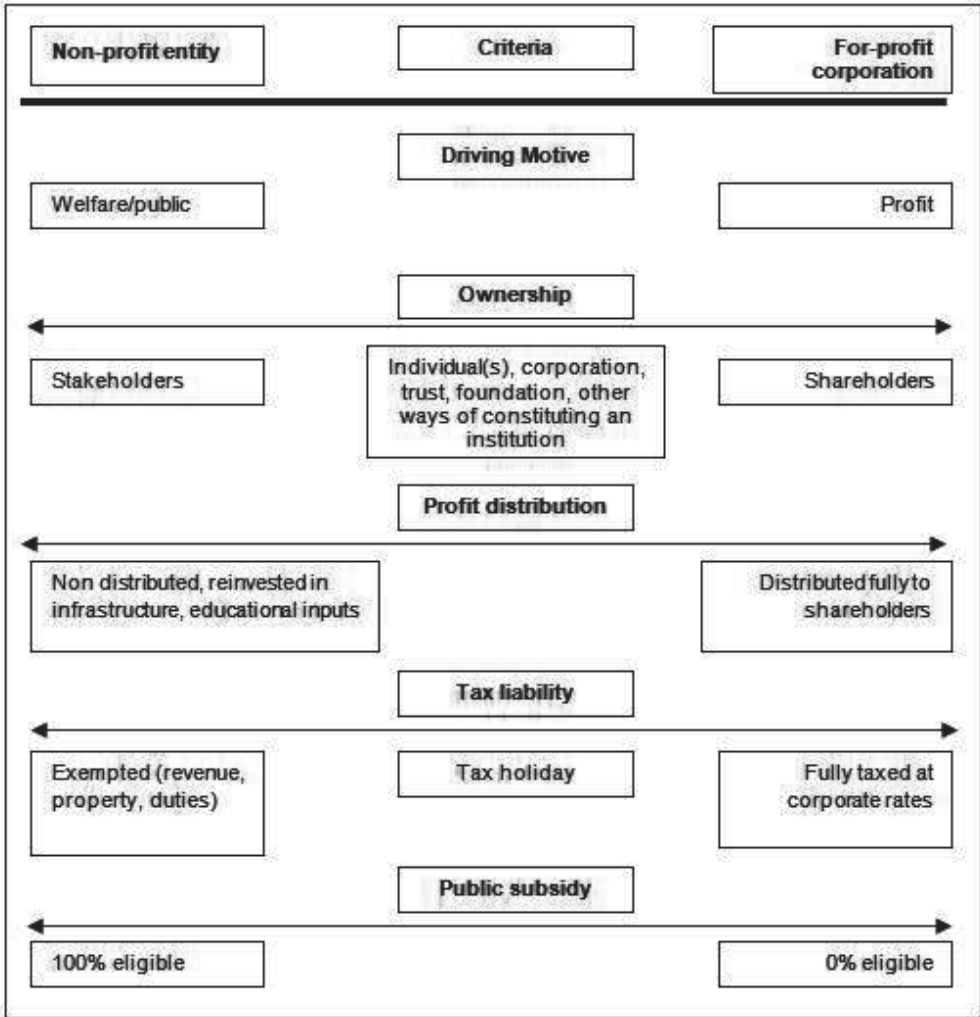
- A voucher-like per-student payment system whereby an amount equivalent to the reference cost of studies would be transferred to all eligible tertiary education institutions on the basis of the number of students choosing to study in and graduating from each institution.

The choice between these options depends on the view taken by the Chilean government, stakeholders and the public on two issues. First, would it be right to withdraw direct public funding from private, non-profit institutions which as CRUCH members have always enjoyed it, and to confine this funding to a small group of publicly-funded institutions, presently consisting solely of universities? If not, option one falls. Secondly, if it is appropriate to extend public subsidies in the form of direct funding to private tertiary institutions, should this direct funding be in principle available not only to non-profit private but also to for-profit private institutions? It will be recalled that in Chapter 5 the review team recommended a change in the law to allow some private universities, as well as IPs and CFTs, to have for-profit status.

To inform debate on this second issue, Figure 8.10 sets out the key areas of difference between non-profit and for-profit private tertiary education institutions. It shows the main dimensions that need to be taken into account when considering the legal status of private universities. It makes the point that the distinction between non-profit and for-profit universities is not always binary, but that there is a continuum depending on the legislative framework and the characteristics of the tertiary education institutions concerned. The most important factors, in terms of eligibility for AFD funding, would be the tax status of the institution and the extent to which it reinvests its profit for educational purposes or distributes them to shareholders. In the review team's opinion, the principle of achieving a level playing-field does not require the Chilean government to give the same financial treatment to institutions which distribute profit to shareholders as to those which re-invest their profits in education. The former can always set up non-profit arms or subsidiaries if they wish to benefit from direct (non-competitive) funding for teaching or research. There may however be a case for making vouchers available to for-profit institutions who take low-income students on reduced fees, thus also reducing public student aid liability.

Whichever option is favoured, the government would need to design and implement a carefully formulated transition plan that would include injecting additional resources for the combined core funding and student aid package. This would address the particular situation of the CRUCH universities whose core public funding would be affected by the change in allocation mechanisms.

Figure 8.10 Key areas of differentiation between non-profit and for-profit private tertiary education institutions



Source: Elaborated by Jamil Salmi, Richard Hopper and Svava Bjarnson

*AFI*

Considering the socially discriminating nature of the PSU selection to which the AFI is closely linked, and the fact that AFI applies only to a small proportion of students entering tertiary education for the first time, it is recommended to eliminate this mechanism in the form it is operating in at

present. To be used in a meaningful way as a performance incentive, the AFI would have to rely on criteria that are socially more inclusive and would need to be significantly larger in terms of number of students and resources affected.

### *Competitive funds*

After almost ten years of operation, MECESUP has proved its strengths. It would be desirable to confirm this form of competitive, objective and transparent mechanism as the main approach for allocating public investment funds to tertiary education institutions. FDI funding should be fully and finally subsumed within such a mechanism to avoid duplication. Finally, if the government decides to break the CRUCH monopoly as recommended in this report, the competition for public investment funds should be open to all accredited tertiary education institutions.

### *Performance contracts*

After the ongoing pilots are implemented, an independent evaluation should be undertaken to assess the degree of success of the performance contracts and identify areas for improvement. The government could then consider using the performance contracts as a general instrument to promote institution-wide reforms and innovations in tertiary education, with all accredited public and non-profit private institutions being eligible to participate.

### *Grants and scholarships*

Rather than continuing to operate at least 12 different grants and scholarships schemes, the Ministry of Education may want to review the various programmes with a view to integrating them into a single scheme with a small number of separate windows. All discrimination between the students who are enrolled in CRUCH universities and the other students should also be eliminated.

### *Student loans*

MINEDUC should seriously consider merging the two existing student loans schemes into a unified system, for both efficiency and equity reasons. FSCU is heavily subsidised and suffers from low levels of repayment, whereas the guaranteed loan programme represents a much smaller cost to the State and has the potential for better repayment from graduates. Having

a single loan programme would suppress the segregationist features of the present dual system between CRUCH and non-CRUCH students.

### *Increases in public funding*

These would be allocated as follows. For resources meant to cover recurrent costs, the government would rely on the reformed AFD as discussed above; the scholarships and student loan programmes; and the performance contracts. Public resources to expand research activities would be distributed through a simplified scheme of research funds, putting more emphasis on research groups and centres and on infrastructure for those universities qualifying as research universities, as elaborated in Chapter 7. In addition, to increase but streamline opportunities for doctoral students, it would be important to create, for example within FONDICYT, post-doctoral scholarships to help promising young scientists to establish themselves. Many such schemes exist, for example as part of the Research Excellence Initiatives in Ireland – see Box 8.1. Finally, additional funding for investment purposes would continue to be channelled through an efficient and transparent competitive mechanism such as MECESUP.

As the government of Chile proceeds to formulate a consolidated financing policy for tertiary education, it will be important to pay close attention to the political economy of the reforms under consideration. Any measure which challenges the CRUCH monopoly is likely to encounter resistance from CRUCH institutions, and from any stakeholder groups whose entitlements and privileges would be negatively affected. To build the consensus and awareness needed to move ahead successfully, the government will need to communicate extensively and in the most transparent manner the reasons for the proposed changes. These include the present disparities and inconsistencies; the government's aim that 50% of young people should participate in tertiary education, which calls for a scale of expansion in the system that can only come from the newer non-CRUCH institutions; and the country's economic need to boost numbers undertaking high-quality technical training. The additional public funding could be used to offer financial incentives that would make the new funding architecture more attractive to all parties. Finally, transitional measures should apply to the changes in terms of scholarships and student loans, with grand-fathering clauses to protect students who are already in the system.

### Box 8.1 Research Excellence Initiative in Ireland

The Irish Research Council for Science, Engineering and Technology (IRCEST), established in 2001, manages the *Embark Initiative*. The purpose of this new programme, funded as part of the National Development Plan, is to promote excellence in research through innovation. An important component of Embark consists of doctoral and post-doctoral scholarships and grants to encourage students to engage in a full-time career in their chosen field of research; to support their research interests through guaranteed funding with the aid of expert reviews; and to empower the Irish economy through knowledge creation, development, and national competitiveness.

The Embark Initiative spent EUR 12 million (2002-2004) in order to fund “innovative and exciting research” at Irish Third Level Institutions, for a total of 88 projects. The funding was allocated to “Ireland’s most talented researchers engaging in a wide range of projects in the sciences, engineering and technology under the Basic Research Grants Scheme, jointly funded by Enterprise Ireland and the Irish Research Council’s Embark Initiative”.

The Embark Initiative operates the Postdoctoral Fellowship Scheme, the Basic Research Grants Scheme, the Post Graduate Research Scholarships Scheme, and the Graduate Research Education Programme; and plans to offer new schemes in the future. The Post Doctoral Fellowship Scheme, in its sixth year, will award up to 55 students an amount of approximately EUR 4.8 million. These students will be assessed by an international peer review panel.

In 2007, the Minister for Education and Science, the Irish Research Council for Science, Engineering and Technology (IRCSET) and the Irish Research Council for Humanities and Social Sciences (IRCHSS) allocated funding of up to EUR 8 million to create five Graduate Research Education Programmes in the humanities, sciences, social sciences, technology and engineering. This scheme benefited up to 50 new PhD scholars within the successful programmes.

The Post Graduate Research Scholarship Scheme has just been introduced in 2008. This is a EUR 11.8 million scheme to fund “early career formation of up to 165 doctoral and masters researchers in the sciences, engineering and technology”. The aims of this scheme are knowledge creation and benefit to society by targeting students who are talented in science, engineering and technology.

*Source:* [http://www.ircset.ie/about\\_embark/index.html](http://www.ircset.ie/about_embark/index.html)

## Resource utilisation

Several structural and functional features constrain the ability of tertiary education institutions to operate as efficiently as they could. As raised in Chapter 5, the long duration of first degree studies and the civil service

regulations that public universities are legally bound to follow are among the most important limitations in that regard.

The fact that the theoretical duration of first degrees in Chilean universities is generally one year and often two years longer than similar degrees in North America or Europe represents a social cost of great magnitude for the country. Aligning the duration of first degrees with international practice, as recommended in Chapter 5, would permit the redeployment of a significant proportion of resources currently used in tertiary education, with resulting savings for students and their families.

A related consequence of the long duration of studies is the low level of internal efficiency which characterises some parts of the tertiary education system. Table 8.11 measures the apparent graduation rate by principal areas of studies. Health sciences obtain by far the best results (87%). Compared to the average apparent graduation rate of 58%, internal efficiency is a concern in several key disciplines, including law (40%), natural sciences and mathematics (42%), as well as art and architecture (45%). The apparent graduation rate is calculated by comparing the number of graduates in 2006 to the number of first year students in 2002 (five years earlier).

**Table 8.11 Apparent graduation rates by discipline for 2002 cohort**

Disciplines	First year students in 2002 (A)	Graduates in 2006 (B)	Graduation rate (B/A)
Agriculture, fish farming and oceanography	3 001	1 440	48%
Art and architecture	2 879	1 307	45%
Natural sciences and mathematics	3 246	1 351	42%
Social sciences	9 208	6 035	66%
Law	2 268	902	40%
Humanities	1 233	729	59%
Education	7 997	6 193	77%
Technology	16 674	7 969	48%
Health	4 227	3 693	87%
<b>Total</b>	<b>50 733</b>	<b>29 619</b>	<b>58%</b>

Source: CRUCH statistical yearbook (2006).

The situation has improved a little over the past few years, since the apparent graduation rate for the 1997 cohort was only 53%. There has been a clear improvement, in particular, among CRUCH private universities which have seen their apparent graduation rate increase from 26.7% in 1998 to 42.3% in 2002. But it is important to underline that internal efficiency is likely to be worse in reality because the data used in Table 8.11 for first year



students do not distinguish new entrants from students who are repeating their first year. Given the finding by Gonzalez *et al*, quoted in Chapter 4, that only 8.6% of graduates fully completed their programmes and obtained their degrees within the five year theoretical length of their courses, it is likely that many, even most, of the 2006 graduates started their programmes earlier than 2002.

As the Ministry's Higher Education Information System builds up its data base and analytical capacity, internal efficiency is one of the priority issues it should focus on. This could be done by undertaking detailed studies of student cohorts across a representative cross-section of universities to obtain a clearer picture of the actual determinants of repetition and abandon and identify appropriate remedial approaches.

One of the major constraints in ensuring efficient resource utilisation comes from the tight government regulations that the public universities are subjected to. Civil service regulations, especially with regard to human resources policies, financial management and the procurement of goods and services, do not provide the needed flexibility to use available resources in the most efficient and effective manner. For example, public universities cannot hire any new faculty member by direct negotiations; they must go through a public competition. Once recruited, faculty and administrative staff become public servants, which means that the evolution of their career and remuneration is only loosely connected to their actual performance. There is no compulsory retirement age. As a result many universities report difficulties in managing the transition from older to younger academics in a strategic way.

The obligation to undertake all procurement activities through the public portal *ChileCompra* makes the process unnecessarily cumbersome for the purchase of goods and services directly related to the academic nature of universities, such as specialised scientific equipment ordered in small quantity. *Ex-ante* financial controls for all transactions cause delays throughout the process.

Table 8.12 outlines areas where public universities face regulatory limitations compared to the situation of CRUCH and non-CRUCH private universities.

Table 8.12 Key areas of regulation

Regulations and Incentives	Public universities	CRUCH private universities	Non-CRUCH private universities
Receive part of their regular budget from the State	Y	Y	N
Eligible for MECESUP funding	Y	Y	Y <sup>1</sup>
Can receive donations	Y	Y	Y
Flexibility to hire and dismiss faculty	Limited	Y	Y
Flexibility to establish salaries	Limited	Y	Y
Subjected to government financial control rules ( <i>ex ante</i> controls and audits)	Y	N	N
Subjected to government procurement rules	Y	N	N
Can take a long term commercial loan	N	Y	Y

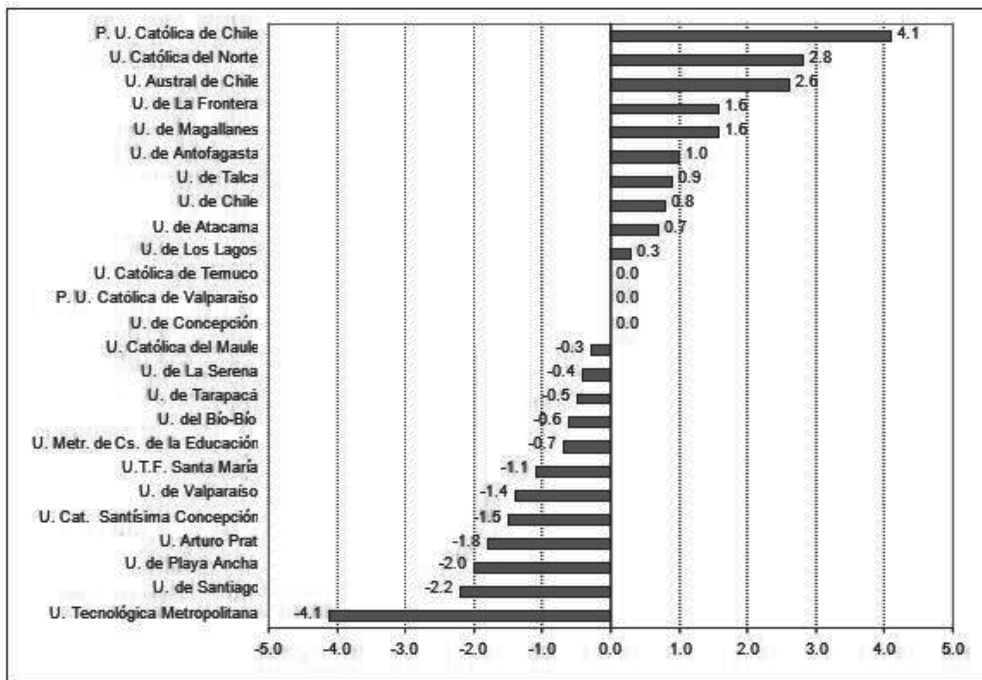
Note: 1. Only for accredited universities and in specific areas.

Source: Field visits, January 2008.

As a result, public and private universities do not compete on a level playing field. This problem, which is common in most countries with a dominant public tertiary education sector, carries an element of paradox in the case of Chile, where private sector enrolment accounts for more than two-thirds of the total student population and the government actively encourages competition among public and private institutions through the AFI voucher system, the competitive research funds and the guaranteed student loan system. The paradox is that, although public universities receive the majority share of their funding from private sources, they must follow civil service regulations while the CRUCH private universities, which receive a significant part of their income from public sources, are not constrained by the same regulations, even in terms of financial control for the public portion of their resources. Chapter 5 has already recommended changes in these areas.

One way of obtaining an idea of the relative efficiency of universities is to look at their efficiency in competing for investment funds allocated through the MECESUP programme. Figure 8.11 measures the difference between the share of competitive funds received by each CRUCH university and its student population size (share of its student population over the total student population in CRUCH universities). A positive number indicates that the university concerned is doing better than its size would imply; a negative number is a sign of under-performance against this criteria.

Figure 8.11 Efficiency in capturing MECESUP funding



Source: MINEDUC and MECESUP

The analysis presented here underlines two relevant findings. First, within CRUCH, the private universities tend to display better performance than the public ones. There are three private universities among the top five in terms of efficiency in capturing MECESUP resources, and 7 among the 14 which obtain a larger or equal share compared to their enrolment size. This would tend to validate the earlier discussion about the weight of civil service regulations on public universities. Second, the variation among public universities is also quite significant, which indicates that, faced with

the same administrative constraints, some university leadership teams are much more successful than others in defining strategic priorities and designing winning projects.

To create a level playing-field, the Chilean authorities should allow the public universities to operate under administrative arrangements and financial management rules equivalent to those enjoyed by private institutions. Several countries, notably the UK, Germany, Japan, Singapore and Thailand, have moved in recent years to transform the status of their public universities in order to give them more managerial autonomy. These governance reforms have ranged from making constraining regulations more flexible to giving public universities the status of private law corporations.

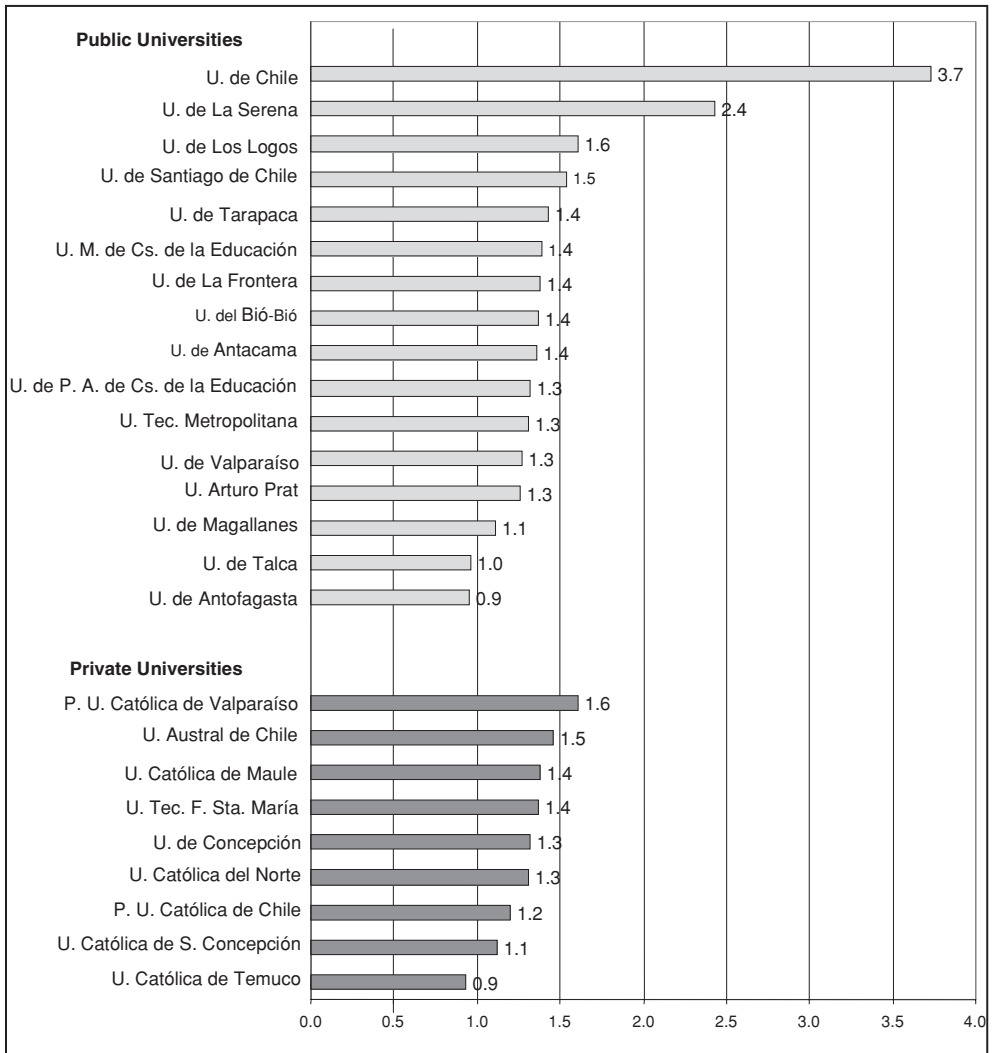
The Chilean government should consider transforming the status of public universities to give them the degree of management autonomy which would be aligned with the competitive nature of the tertiary education system. This should cover, in particular, the following three dimensions:

- All public universities should be able to manage their human resources in such a way as to attract, remunerate and reward qualified faculty and administrators strictly on the basis of performance criteria.
- Financial controls would apply after transactions are carried out; they should not operate as impediments to flexible management practices.
- *ChileCompra* regulations should be carefully analysed in relation to the procurement needs and specificities of universities to distinguish between the categories of goods and services that can be more efficiently purchased using *ChileCompra* and those where exclusive reliance on the common system can be counterproductive. Similarly, in terms of financial controls and audits, public resources should be treated in the same way regardless of which type of university spends the money; conversely, the use of private resources should be regulated by similar rules in both public and private universities regardless of their affiliation to CRUCH.

Another dimension of potential inefficiency, linked to the civil service status of the public universities, is that they may tend to employ a higher proportion of administrative staff than private universities. Statistics are not available for non-CRUCH universities, but the comparison between public and private CRUCH universities (Figure 8.12) shows that, contrary to the situation in other countries in the region, there is a high degree of efficiency in the deployment of human resources, as measured by the number of administrative staff divided by the number of academics. The only outliers

are the University of Chile and the University of Serena. The 3 to 1 gap between the University of Chile and the Catholic University of Chile is of concern.

Figure 8.12 **Proportion of administrative staff in public and private universities**



Source: CRUCH statistics

It is suggested that the two universities which are out of sync undertake a benchmarking exercise to understand why they have relatively more administrative staff than the other CRUCH institutions and assess their staffing needs with a view to improving the balance between academic and non-academic staff.

The highly competitive nature of the Chilean market for tertiary education also has unintended consequences in terms of the effective use of available resources among public universities. Many universities tend to open branches in cities other than their main campus, notably in Santiago in the case of the regional universities. The specialties offered in these satellite branches are not always linked to the main areas of strength or focus of these universities, leading to a dispersion of efforts and resources not warranted by strategic considerations other than the desire to increase the visibility of the university from a branding viewpoint. It is suggested that accreditation teams pay more attention to this phenomenon and make appropriate recommendations. Institutions should implement their expansion plans in a strategic manner consistent with their academic comparative advantages. This issue could be addressed as well through the future performance contracts.

## Findings

### *Overall observation*

- Chile offers a unique combination of financing characteristics and approaches which are hard to find anywhere else in the world. Compared to other countries in the Latin American region and even most industrial and developing nations, Chile's tertiary education system stands out for the low level of public funding. At the same time it has implemented bold financing reforms in the areas of resource mobilisation, resource allocation and student aid.

### *Resource mobilisation*

- Chile opted many years ago for a mixed funding approach, whereby budgetary resources are complemented by significant contributions from students and their families. As a result, public spending for tertiary education is markedly low, including funding for university research.

- At the same time, however, Chile is among the countries in the world that have achieved the highest level of cost-sharing in public tertiary institutions on a universal basis.
- In addition, a significant proportion of the increase in tertiary education coverage since the democratic transition has been managed through a rapidly growing private sector funded essentially by the students and their families and enrolling almost 70% of the total student population.

### *Resource allocation*

- Notwithstanding the low level of public funding, the government relies on a wide range of allocation instruments to distribute public resources.
- Many of the allocation instruments, AFI, MECESUP, performance contracts for example, are quite sophisticated in their purpose and design. But there is a need for greater harmonisation among the various financing instruments used at present in order to eliminate inherent inconsistencies, inefficiencies and distortions.
- The financing system displays two distinct positive features compared to common practices in most countries in the world. First, Chile provides core budget funding to a number of private universities which receive 48% of all public subsidies for tertiary education. Second, in order to transfer resources to tertiary education institutions, the country relies more on indirect funding – linked to some measure of student or institutional performance – than on direct payments.

One of the major weaknesses of the financing system is that most of the public funds are reserved to the traditional CRUCH universities entrenched in their historical privileges. Another serious shortcoming is that 95% of the direct budget allocation does not correspond to any performance criterion. As a result, Chile is perhaps the only country in the world with such variations in budget allocation among its public universities, with the top recipient enjoying a per student contribution ten times as high as the lowest recipient. Interestingly, a few private universities receive significantly more public resources than the majority of public universities. Among private institutions, the 9 CRUCH universities capture three-quarters of the public subsidies going to the private sector even though they enrol only 19% of the corresponding student population.

### *Resource utilisation*

- Government regulations provide insufficient incentives and flexibility for public universities to use available resources in the most efficient and effective manner. They are therefore unable to compete with private tertiary education institutions on a level playing field.
- There seems to be insufficient financial oversight over private tertiary education institutions.
- The fact that the theoretical duration of first degrees in Chilean universities is generally one year and often two years longer than similar degrees in North America or Europe represents a social cost of great magnitude for the country.
- Low internal efficiency is a concern in several important disciplines, including law, natural sciences and mathematics, and architecture.
- With two notable exceptions, CRUCH universities are quite efficient in the deployment of administrative employees relative to academic staff.

## **Recommendations**

### *Overall recommendation*

- Chile needs to design a long-term vision outlining the role of the government in tertiary education funding. This would guide decisions about the desirable level of public funding and the most efficient and equitable manner to distribute these resources among institutions and students.

### *Resource mobilisation*

- There is a strong rationale for raising the level of public funding for tertiary education on both equity and quality grounds.
- Chile could benchmark itself against the few countries, such as Korea and Japan, which have followed the same path of high private funding and high private enrolment, and plan progressively to double its public investment in tertiary education over the next few years.



- The government of Chile should base the allocation of additional resources on the principles of strengthening the ‘public good’ mission of tertiary education and compensating for market failures. In that context, funding for research would also need to increase.

### *Resource allocation*

The following specific measures are suggested to rationalise the overall funding system, in line with the principles outlined above and the policy directions established by the government of Chile in recent years with respect to linking funding with performance and stimulating healthy competition among all tertiary education institutions.

- *AFD*. The AFD should be transformed to make it more performance-based. The government could gradually expand the formula-based part of AFD and make it more output-focused.
- It would be desirable also to eliminate the present funding discrimination between CRUCH and non-CRUCH institutions, adopting the following two principles: (i) all Chilean students whose tertiary institutions meet essential quality and accountability requirements would be entitled to public subsidies through student aid, if personally eligible; and (ii) the arrangements for direct public funding to institutions would be consistent with the institutional diversity and competitive nature of the Chilean tertiary education system. Three alternative ways of doing this are suggested:
  - A differently configured dual system where only the 16 existing public universities would receive direct funding in return for fulfilling public good functions such as doctoral education and basic research in disciplines requiring expensive infrastructure investment. This, like all the alternatives, would be accompanied by an expanded scholarship / student loan for students enrolled in eligible private institutions.
  - A more extensive direct funding system where all accredited public and non-profit private institutions would receive core resources linked to their student numbers, subject to meeting conditions relating to quality, financial transparency and fees charged to students.
  - A voucher-like per-student payment system whereby an amount equivalent to the reference cost of studies would be transferred to all eligible tertiary education institutions on the basis of the

number of students choosing to study in and graduating from each institution.

- *AFI*. Elimination of the AFI in its present form is suggested, in the light of the proposed transformation of the AFD and expansion of the student aid programmes. To be used in a meaningful way as a performance incentive, the AFI would have to rely on criteria that are socially more inclusive and would need to be significantly larger in terms of number of students and resources affected.
- *Competitive Funds*. A competitive, objective and transparent mechanism such as MECESUP would be the main approach for allocating public investment funds to all accredited tertiary education institutions.
- *Performance contracts*. If the performance contracts are successful during the pilot phase, the government could use them as a general instrument to promote institution-wide reforms and innovations among all accredited public and non-profit private institutions.
- *Grants and scholarships*. MINEDUC should consider the feasibility of integrating all existing grants and scholarships programmes into a single scheme, with a small number of separate windows, which would not discriminate against non-CRUCH students.
- *Student loans*. The two existing student loans schemes should be merged, for both efficiency and equity reasons.
- Increases in public funding would be allocated as follows: to cover recurrent costs, the government would rely on the reformed AFD, the scholarships and student loan programmes; and the performance contracts. Public resources to expand research activities would be distributed through a simplified scheme of research funds, putting more emphasis on research groups and centres and on infrastructure. Additional funding for investment purposes would be channelled through an efficient and transparent allocation system such as MECESUP.

### ***Resource utilisation***

- To create a level playing-field, the Chilean authorities would allow the public universities to operate under administrative arrangements and financial management rules equivalent to those enjoyed by private institutions.

- All private tertiary education institutions would manage their resources according to standard and transparent accounting practices, and prepare annual financial reports that would be audited independently.
- Chile should gradually move towards shorter first degrees in conformity with the worldwide trend.
- To improve internal efficiency, the Higher Education Information System would undertake detailed studies of student cohorts to obtain a clearer picture of the incidence and causes of repeated years and drop-out and identify appropriate remedies.

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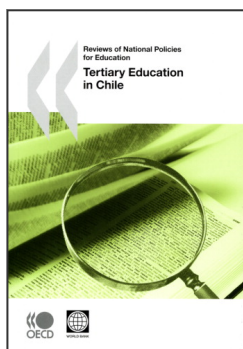
<p>See also Ministry of Education of Chile (2007), <i>OECD Thematic Review of Tertiary Education: Country Background Report for Chile</i>, Santiago. <a href="http://dx.doi.org/10.1787/478236220760">http://dx.doi.org/10.1787/478236220760</a>, also available at <a href="http://www.oecd.org/edu/tertiary/review">www.oecd.org/edu/tertiary/review</a></p>
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## Acronyms and Abbreviations

	<b>Spanish</b>	<b>English</b>
AFD	Aporte Fiscal Directo	Direct public grant
AFI	Aporte Fiscal Indirecto	Indirect public grant
AGCI	Agencia de Cooperación Internacional	Agency for International Co-operation
AR	Arancel de Referencia	Reference fee
BB	Becas Bicentenario	Bicentenary scholarships
BEA	Beca de Excelencia Académica	Academic Excellence scholarships
BDP	Beca para estudiantes Destacados que ingresan a Pedagogía	Scholarships for outstanding students to study pedagogy
BJGM	Becas Juan Gómez Millas	Juan Gómez Millas scholarships
BNM	Beca Nuevo Milenio	New millennium scholarship
CAE	Crédito con Aval del Estado	State guaranteed loan system
CDD	Convenios De Desempeño	Performance agreements
CFU	Crédito Fiscal Universitario	University public credit
CNES	Comisión Nacional de Educación Superior	National higher education commission
CNA	Comisión Nacional de Acreditación	National accreditation commission
CNAP	Comisión Nacional de Acreditación de Programas de Pregrado	Commission for the evaluation of undergraduate programmes
CONAP	Comisión Nacional de Programas de Postgrado	Commission for the evaluation of postgraduate programmes
CSE	Consejo Superior de Educación	Higher council of education
CFT	Centro de Formación Técnica	Technical training centre
CONICYT	Comisión Nacional de Investigación Científica y Tecnológica	National commission for science and technology
CORFO	Corporación de Fomento de la Producción	Chilean economic development agency
CPR	Confederación de la Producción y del Comercio	Chilean confederation of production and business
CRUCH	Consejo de Rectores de las Universidades Chilenas	Council of rectors of Chilean universities
DIVESUP	División de Educación Superior del Ministerio de Educación	Higher education division of the Ministry of Education

DFL	Decreto con Fuerza de Ley	Decree with legal force
FC	Fondo Competitivo	Competitive fund
FDI	Fondo de Desarrollo Institucional	Institutional development fund
FIAC	Fondo de Innovación Académica	Academic innovation fund
FONDAP	Fondo de Áreas Prioritarias	Centres for excellence in priority areas
FONDECYT	Fondo Nacional de Desarrollo Científico y Tecnológico	National fund for scientific and technological development
FONDEF	Fondo de Fomento al Desarrollo Científico y Tecnológico	Fund for the promotion of scientific and technological development
FUAS	Formulario Único de Acreditación Socioeconómica	Single socio-economic accreditation form
FSCU	Fondo Solidario de Crédito Universitario	University credit solidarity fund
ICM	Iniciativa Científica Milenio	Millennium scientific initiative
INGRESA	Comisión Administradora del Sistema de Créditos para la Educación Superior	Commission for the administration of higher education credits
IP	Instituto Profesional	Professional institute
ISI		International science index
JCE	Jornada completa equivalente	Full time equivalent (FTE)
JUNAEB	Junta Nacional de Auxilio Escolar y Becas	National committee for student support and scholarships
KAWAX		STI observatory
LOCE	Ley Orgánica Constitucional de Enseñanza	Organic constitutional law on education
MECESUP	Programa de Mejoramiento de la Calidad y Equidad de la Educación Superior	Higher education improvement programme
MINEDUC	Ministerio de Educación	Ministry of education
NEM	Notas de Enseñanza Media	Secondary education report
PAA	Prueba de Aptitud Académica	Academic aptitude test
PSU	Prueba de Selección Universitaria	University entry test
RICYT	Red de Indicadores de Ciencia Y Tecnología	Ibero-American network of science and technology indicators
SIES	Sistema de Información de la Educación Superior	Higher Education Information System
SNAC	Sistema Nacional de Aseguramiento de la Calidad de la Educación Superior	National quality assurance system for higher education
SOFOFA	Sociedad de Fomento Fabril	The Chilean federation of industry science, technology and industry
STI		
UAFI	Unidad de Aporte Fiscal Indirecto	Indirect public grant unit



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