

The University as an Agent of Social Change: The Chilean Experience

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A Thesis submitted to Auckland University of Technology
in fulfilment of the requirements for the degree

Doctor of Philosophy [PhD]

2015

Department of Economics

Faculty of Business and Law

ABSTRACT

This thesis examines educational outcomes in Chile to determine whether or not universities act as agents of social change or whether they merely reinforce existing inequalities in society. In order to address this issue, the thesis builds a multi-layered interpretation of social change and a historically sensitive understanding of Chile's development over time.

By adopting an integrated approach linking the country's social and cultural traditions with political, economic and social realities, the research builds a dynamic interpretation of the way in which higher education in Chile has been shaped by internal and external forces over time.

As in other higher education systems the public discourse in Chile identifies universities as 'agents of social change' with the assumption being that these institutions act in the public interest as 'critic and conscience' of society. The fundamental problem with assumptions such as these is that they stem from theoretical and ideological positions that dominate the discourse on higher education rather than a detailed examination of empirical outcomes.

By utilising two alternative theoretical traditions, namely human capital theory and the critical tradition, this research examines the trend data for Chilean universities in terms of enrolment, the teaching-learning process and outcomes. From this detailed empirical examination, it is evident that participation rates in higher education have increased over the past twenty years and this includes the increasing participation rates of the most vulnerable socio-economic groups. The gap in terms of access to higher education however, remains wide when comparing individual social and economic groups.

Inequities in academic progress are linked to the social origins of students and directly impact on academic success. These disparities are reinforced by the labour market in terms of employment opportunities and in the persistence of barriers for 'working class' graduates seeking to climb the social scale. It seems evident from this research that the higher education system perpetuates and maintains inequalities rather than facilitating mobility and social equity.

Despite the expressions of confidence in education as a force for change this research questions those assumptions and in that respect it makes an original contribution to knowledge. It challenges us to focus on societal trends and outcomes rather than the individuals in the system. The research concludes by making a number of tentative policy recommendations as well as suggesting areas for further research.

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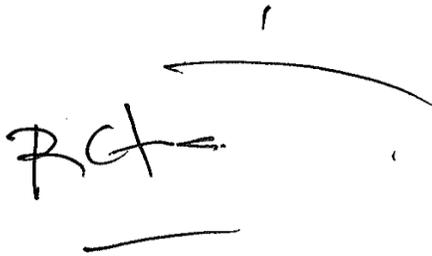
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ACRONYMS

OECD	Organisation for Economic Co-operation and Development
ISI	Import Substitution Industrialisation
CORFO	Chilean Production and Development Corporation
GMC	Greater mining of copper
GDP	Gross domestic product
CASEN	National socioeconomic characterization survey
PSU	National university selection test
CRUCH	Vice-Chancellors Council of Chilean Universities
CNE	National Education Council
DEMRE	National Academic Register
SIES	National Information System of Higher Education
AFD	Direct Public Allocation
AFI	Indirect Public Allocation
L&S	Loans and Scholarships
CAE	State Guarantee Students Loan Program
FDI	Institutional Development Funding
FIAC	Academic Innovation Funding
CNA	National Undergraduate Accreditation Commission
AA	Accreditation Agencies
DIVESUP	National Higher Education Division
CFT	Technical Training Centre
IP	Professional Institute

ATTESTATION OF AUTHORSHIP

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.



Candidate's Signature:

Date: 19 November 2015

ACKNOWLEDGEMENTS

My sincere thanks to everyone who contributed to the achievement of this thesis:

To my beloved wife Jimena Monreal: Who for a long time had to deal with family and household work and supported me unconditionally and always encouraged me in this project.

To the professors Love Chile, Ian Shirley and Kathy Garden: Thank you for all the support, commitment and dedication in guiding this work, which beyond strictly academic mentorship, included friendship, emotional, logistical and financial support. Thank you all so much for your comprehensive support.

To the Vice-Chancellors of the Universidad Católica del Maule: First Dr. Claudio Rojas Miño, who believed in my research endeavour, and the potential contribution it might make to both the institution and the country. Thanks too to Vice-Chancellor José Antonio Valdivieso who validated and continued to support my PhD studies. Finally thanks go to Dr. Diego Durán Jara, whose support made it possible for me to complete this PhD thesis.

To Dr. Philip Sallis: whose support was crucial in initiating a PhD program, and for the conversations and continued motivation, friendship and unconditional love.

To the professionals of the Planning and Development Office of Universidad Católica del Maule: Axel Ovalle, Francisco Albornoz, Ivette Durán, Rommy Rebolledo, María Graciela Jorquera, José Gajardo y Olga Villacura: these colleagues played an important role in providing the motivation to begin the programme, and gave generously of their time to replace me in my work and collaborate with me while I was undertaking my research.

To those who provided additional financing beyond my own resources: First the Universidad Católica del Maule, the Ministry of Education of Chile whose funds supported some of the air travel and Auckland accommodation; to the Centre for Urban-Regional Studies (CEUT) led by the academics Dr. Rodrigo Salcedo and Dr. Tomas Errazuriz; to the professors Ian Shirley and Love Chile who supported me in financing a proportion of the University fees and accommodation respectively; once again to Dr. Philip Sallis and Dr. Kathy Garden who collaborated so actively that it's

hard to identify specific aspects. Overall, the project was funded through many sources that year after year made it possible to manage - my infinite gratitude to everyone.

To those who to a greater or lesser extent academically supported me with their advice, evaluations, and recommendations: Dr. Rodrigo Salcedo whose academic support was fundamental to the final stage; Claudia Concha, Carmen Luz Latorre, , Dr. Anne Bliss, Luis Eduardo Gonzalez; Raul Fuentes and especially Dr. Charles Crothers.

To those who did not support me: Particularly within the Universidad Católica del Maule there were those who disagreed and constantly criticized the institution's decisions and actions in supporting me. Thank you, because these criticisms were a source of even greater motivation to achieve the goal.

CHAPTER ONE:

INTRODUCTION

Education planners throughout history have framed systems that support the emergence of the kind of citizen and the kind of society they think important. Plato advocated the production of philosopher-kings in a Spartan-type social system. Cicero and Quintilian stressed the need for producing orator-senators from the upper class Roman families. Locke's ideal was the well-to-do English gentleman and Rousseau sought natural and unsophisticated youths and maidens who would be able to resist the corruptive influences of a decadent society.

The benefits of education in the development of a society are strongly demonstrated at all levels. Preschool for example has major economic and social benefits, promoted by many to increase access and quality of educational programs for younger children (Barnett, 2013; Sawhill, Tebbs, & Dickens, 2006; Wollery, 1994) . Primary and secondary education too have both private and social benefits, comprising, according to many such as UNESCO (2001), a powerful tool for governments to address extreme poverty, strengthen democratic systems and health systems, among many others benefits. In terms of private benefits, there is a direct relationship between years of schooling and wages, as amply demonstrated by the CASEN surveys in Chile (2011).

In terms of higher education, although there is continuing discussion about the supremacy of private benefits over social benefits which it generates, there is no dispute about the benefits of higher education for both individuals and for society as a whole (Beyer, 1997; Bowen, 1997; IHEP, 1998; Pusser, 2006).

This thesis does not dispute the benefits and importance of education in a society - it is considered as one of the essential pillars. Nevertheless, even though the development of education has been exponential, and very welcome, the study examines the ability that education has had to nullify social differences of origin of students such that equity to people.

That is, independent of socioeconomic background, they have the ability to obtain the benefits provided by education, in this case particularly access to a higher level of welfare.

The Chilean system of higher education is the focus of this research program dominated by a public discourse that identifies universities as ‘agents of social change’ with the assumption being that these institutions act in the public interest as ‘critic and conscience’ of society. These rhetorical assumptions are not confined to Chilean universities but can be found in the mission statements and strategic plans of higher education institutions in many countries today; “*enhance the commitment to the common good*” (American University of Central Asia); “*to enhance the lives and livelihoods of our students, the people of New York, and others around the world*” (Cornell University), “*promotes the wellbeing of people and their environments, and provides them with opportunities to expand and achieve their aspirations*” (Auckland University of Technology).

The fundamental problem with assumptions such as these stem from the theoretical and ideological positions that dominate discourse on higher education rather than an examination of empirical outcomes. Even comparative studies of universities place considerable emphasis on ranking systems which in effect make comparisons between institutions on a narrow range of indicators at a particular period of historical time. This research places emphasis on an examination of educational outcomes in Chile to determine whether or not the university is an agent of social change; that is, does it improve the overall opportunities of Chilean citizens?; does it provide access for students from the lowest socioeconomic groups?; does it improve their life chances?; does it improve their employment prospects?; in general: Do Chilean Universities act as agents of social change or do they merely reinforce existing inequalities in society?

The overall analysis compares two approaches that link education and development based on different assumptions: these refer to human capital theory and critical theory. Key questions emanating from the first theoretical approach revolve around the income gap between people. According to the explanation given by human capital theorists (Schultz, 1961), such a gap would be the expression of different levels of productive capacity, and this productive

capacity would be a function of the schooling years. The second theory, denominated as critical theory, has a different approach, where education is regarded as a tool of inequality and social reproduction (Bourdieu & Passeron, 2000). Bourdieu and Passeron (2003) have stated that the amount and origin of economic resources and, in consequence, the degree of family dependence, separate students in a radical way according to their social origin. In this sense, it is observed that in spite of teaching the same curriculum to students from different social origins, outcomes are different resulting in persistent social inequalities.

In fact, the neoliberal model adopted by Chile ending in the 1970s, and implemented by the economic advisers of Pinochet, better known as the “*Chicago Boys*” (having graduated from the Chicago School of Economics), approved several and successive radical reforms such as the selling of many public companies, sharp cuts of public expenditure, and the privatization of the public security system, among others. In terms of higher education, the neoliberal tradition assumes that education forms part of the function of production, and therefore transferring the costs of education to private individuals means that these individuals would be the beneficiaries of a higher level of education. It was this thinking that transformed the higher education system in Chile after 1981. From that year onward, private universities were founded and the mass process of higher education began; slowing during the first ten years, and paradoxically, faster after Chile recovered its democratic leanings. The outcome of this process is evident in higher participation rates, growing more than four times in the last 20 years, from 245,408 students in 1990 to 987,643 in 2010, achieving participation rates to 2011 over 45 per cent, and projecting to be more than 50 per cent in the coming years.

Although the upper socioeconomic groups participate as a greater proportion of those in higher education, the participation rates of the lower socioeconomic groups have increased by more than four times during the same period. On the surface this data suggests that the higher education system in Chile is building a platform for vertical social mobility thereby reducing the social gaps that characterize Latin-American countries.

When the data is analysed across the higher education system certain contradictions can be identified. In terms of public funding, for example, a significant gap emerges within the

group of 25 institutions with a mission of public service: a greater proportion of funding is allocated to those universities who enrol students from the upper socioeconomic groups located mainly in the major metropolitan areas. In terms of academic efficiency, there are high student dropout rates before the completion of their studies, which also disproportionately affects those in low socioeconomic groups. These outcomes raise serious doubts that higher education in Chile acts as an agent or instrument of social change. Notwithstanding these contradictions it is reasonable to question whether or not universities are graduating students who can be regarded in classical terms as the ‘critics and conscience’ of society.

One of the most important revolutionary students’ movements occurred during 2011, when universities were closed for more than four months throughout the country. More than 400,000 people including students, teachers, parents and children took part in this protest movement. Their main objective was to change the current higher education model, which included seeking free education or at least more public participation, a higher quality of education and the rights of the whole population to access and benefit from education.

As a result, the government reduced the student loan interest rate, increased contestable funding for universities, including some funding aimed only at enhancing the first year retention of those from lower socioeconomic groups, among other measures. Additionally, this year, the government of President Bachelet has initiated deep reforms in education, discussed by all political sectors, among the most important of which is the gratuity in higher education.

To avoid conducting this examination in a vacuum the first phase of the research, Chapters three and four will concentrate on those development patterns that have conditioned Chile’s social, political and economic development over time. Chapter five provides an overview of the research methodology while chapter six analyses the evolution and development of universities in Chile (within an international overview) including those public policies that have prevailed in the Chilean higher education system.

In chapter seven, the main outcomes of higher education in Chile are analysed with particular emphasis on how it has affected the most vulnerable socio-economic groups. Later, in the context of understanding the equity in education as a broader phenomenon than just access, academic performance is analysed including dropout rates, graduation trends and real-time participation rates as well as the evolution of professionals and labour market outcomes.

In addition, the overall analysis of higher education in Chile as outlined above is applied to a case study aimed at analysing one Chilean university in terms of its role as ‘an agent of social change’. The Institution selected is Universidad Católica del Maule. It is located regionally, identifies its mission as being regionally-focused and comprises mainly students from the lower socioeconomic groups.

CHAPTER TWO: THEORETICAL FRAMEWORK

One of the most important social benefits pursued by contemporary higher education systems and by new generations of their students relates to social mobility. In Chile as in many parts of the world, the progressive demand for higher education responds in part to the growth experienced in secondary education, but also to the expectation of families about university education as a driver of social mobility. Along with social mobility comes expectations of higher salaries and both employment prospects as well as a more equitable society with better opportunities and quality of living for all its inhabitants.

Two streams of knowledge motivate current research agendas and link education with social mobility and equity, both differing in their assumptions. The first stream can be described as *functionalist* theories which assume the stable ordering of society to be the most essential social goal, whilst emphasizing individual autonomy and freedom from state control. Such approaches have their origin with Herbert Spencer and Emile Durkheim in sociology, and with classical and neo-classical free market philosophies in economics. Theoretically the functionalist tradition takes an orthodox stance in reviewing legislation uncritically, accepting existing social relations, or those conditions in society ensuring the free reign of market forces. Functionalist theory is most commonly seen in the use of systems models in policy research. Transit through the social scale is strongly linked with the amount of education that the individual possesses and mainly considers the level of individual welfare by considering the level of income that the person can achieve.

An alternative stream of knowledge can be associated with the critical tradition in general and with Pierre Bourdieu in particular. Bourdieu's theory is fundamentally materialist. He stands conventional explanations on their heads. It is not that working-class pupils fail because they are 'disadvantaged' or lack middle-class culture. The point is rather that middle-class pupils succeed simply by being better resourced. These resources (or 'capitals' as Bourdieu calls them) are of three kinds: financial, symbolic, and social. Families are to a very

considerable extent differentially endowed with these material resources as a result of their location in the class structure.

These two streams of knowledge and the theoretical traditions on which they are based are now examined with particular reference to education.

2.1. Human Capital Theory

Within the functionalist mode is *Human Capital Theory* as described by Becker, Shultz & Bynner (1999) among others. Key questions of the first theoretical economic approach revolve around the income gap between people and educational achievement as the main factor for social mobility. According to the explanation given by Human Capital Theory, such a gap would be the expression of different levels of productive capacity, which would be a function of the schooling years. In accordance with this approach Schultz states:

When farm people take nonfarm jobs they earn substantially less than industrial workers of the same race, age and sex. Similarly, non-white urban males earn much less than white males even after allowance is made for the effects of differences in unemployment, age, city size, and region. Because these differentials in earnings correspond closely to corresponding differentials in education, they strongly suggest that the one is a consequence of the other (1961, p. 4).

Thus, from this point of view, in which the human being is considered a form of capital and their skill and knowledge (and health too) will raise productivity, their salaries and the national wealth, investment in education will cause the difference. Hence people and government must enhance human capital investment, as Schultz held:

Our tax laws everywhere discriminate against human capital. Although the stock of such capital has become large and even though it is obvious that human capital, like others forms of reproducible capital, depreciates, becomes obsolete, and entails maintenance, our tax laws are all but blind on these matters (Schultz, 1961, p. 13).

The approach of Shultz, developed more in depth by Gary Becker, emphasizes the necessity of investment in human capital and particularly in education, even though this approach was rejected during the 1970s after the petroleum crisis, when salaries began decreasing and societies such as the United States faced high unemployment rates. These societies were often referred to as overeducated societies. During the 1980s, salaries recovered as did the yield of education and training investment. The same situation occurred in Europe, Japan and other

industrialized countries. Thus the concept of the overeducated society was not of concern any more: the matter was the quality and quantity of education. Therefore human capital theory regained an even stronger position as Becker affirms: “Human Capital assumes that schooling raises earnings and productivity mainly by providing knowledge, skills and a way of analyzing problems” (Becker, 1993, p. 19).

An alternative theory in the functionalist tradition, called the *Theory of Credentialism*, shares the belief in education as an investment and draws a positive relationship between the level of schooling and salaries. Credentialism differs from Human Capital Theory, as it argues that education acts as “*signals*”. Employers will select those who possess the best capabilities or credentials, offering wages as a function of “signals” or high school performance. As a result, individuals that invest in education will be those with talent and a low cost of ‘signaling’, (Spence, 1973). For Becker, credentialism exists, but does not explain the positive relationship between schooling and earnings, “The main problem with credentialism is that companies do not want information on success at schoolwork, but on abilities and performance in the context of working life” (Becker, 1993, p. 20)

Nevertheless, with some updates according to the ongoing theoretical discussions, the fundamentals of the human capital theory continue to be politically significant thereby motivating individuals, families and governments to invest in education. In addition, the theory affects national policies, encouraged by international organizations such as The World Bank (2000), which recommends that educational growth and the development of educational institutions with a particular emphasis on quality assessment, are key factors in development. Such education contributes to mediating the relationship between social origin and educational achievement as well as strengthening the relationship between social origin and class position, a situation relevant particularly in developing countries.

2.2. Reproduction Theory

Taking a critical perspective on the inequities produced by capitalism, Reproduction Theory focuses on education as a tool of the dominant class who perpetuate and maintain order,

reinforce inequities and reproduce their dominant values as the standard for society. Major proponents of this perspective include Louis Althusser, Pierre Bourdieu, Jean Claude Passeron, Samuel Bowles, and Herbert Gintis, all strongly grounded in Marxist approaches. The core of Bourdieu's theory is an analogy between economic capital which is transmitted within the family by inheritance and invested in order to generate profit and a certain status in the world, and cultural capital, which is knowledge transmitted within the family through socialization and investment in the school system to produce the qualifications (the academic capital) necessary for entry into the professions. In Bourdieu's theory, the true (as opposed to apparent) nature of the educational system is to discriminate in favour of those who are the inheritors of cultural capital. It follows that the representation of the failure of certain social groups as due to lack of talent and intelligence must be seen as an ideology serving the maintenance of the system. Children in the middle-class home gain through socialization in a system of mental habits (*habitus* in Bourdieu's terminology) which may be regarded as the programming of the individual and of the group to which he or she belongs. School does not and cannot compensate for an 'inferior' *habitus*; it merely continues to reward what the 'well-endowed' *habitus* produces.

This perspective views 'the school' as a place where children, on a variety of levels, learn to write, to read, and to learn a number of techniques, all related to different jobs in production. According to Althusser, school children learn 'the rules' of good behavior, described by the author as:

The attitude that should be observed by every agent in the division of labor, according to the job he is "destined" for: rules of morality, civic and professional conscience, which actually means rules of respect of the sociotechnical-division of labor and ultimately the rules of the order established by the class domination (Althusser, 2006, p. 88).

In 1964, Pierre Bourdieu and Jean Claude Passeron published the first edition of their work *Les Héritiers, les étudiants et la culture*, in which the authors attempted to demonstrate that the educational system in France acted as an instrument of selection and social segregation benefitting the privileged or dominant classes. Formal education in France largely benefitted students whose family origin (including cultural, economic, and social relationships) placed them in an advantageous situation within an otherwise egalitarian scholarly activity, and gave special significance to values, sensibilities, predisposition and knowledge learned in their

households and previous trajectories. They criticize the capitalist system for its tendency to normalize social inequity, considering the latter to be produced by the lack of abilities, intelligence or merit of individuals, but they do not consider the social inheritance that contributes to the failure of successful scholarly achievers. They argued that in democratic societies the school is a “*privileged instrument of bourgeois society*” (Bourdieu & Passeron, 1996, p. 269), which in addition to allowing the transmission of bourgeoisie rights, manages to convince the most deprived groups that their lack of academic and social success depends mainly or exclusively on their lack of gifts or talents.

For Bourdieu and Passeron the amount and origin of economic resources and, in consequence, the degree of family dependence, separate students in a radical way according to their social origin (Bourdieu & Passeron, 2003) . In this sense, in spite of teaching the same curriculum to students from different social origins, outcomes are different, resulting in persistent social inequalities. Bourdieu placed emphasis on how social classes, especially the ruling and intellectual classes, preserve their social privileges across generations despite the myth that contemporary post-industrial society boasts equality of opportunity and high social mobility achieved through formal education. Some examples of his empirical results include showing that despite the apparent freedom of choice in the arts, people's artistic preferences (such as classical music, rock, traditional music) strongly tie in with their social position; similarly, the subtleties of language such as accent, grammar, spelling and style – all part of cultural capital – are a major factor in social mobility. Such factors may be influenced by the social networks encountered during education, rather than through formal schooling per se (Bourdieu & Passeron, 2000).

In the same way, from an economic point of view, Bowles and Gintis (2002), who are also reproduction theorists, describe education and educational institutions as tools of reproduction and the maintenance of social order, affirming:

The educational system legitimates economic inequality, by providing an open, objective, and ostensibly meritocratic mechanism for assigning individuals to unequal economic positions. The educational system fosters and reinforces the belief that economic success depends essentially on the possession of technical and cognitive skills- skills it is organized to provide in an efficient, equitable and unbiased manner on the basis of meritocratic principle (Bowles & Gintis, 1976, p. 103)

Figure 2.1 summarizes the approaches described in the preceding sections.

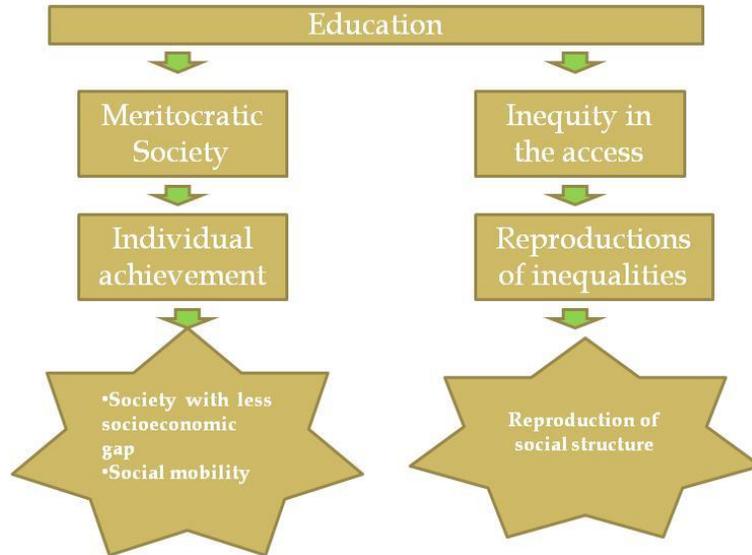


Figure 2.1: Stream of knowledge regarding education and its Outcomes
Source: Developed by the Author

Having explained the theoretical traditions that link education and its role as a social mobility driver, or to the contrary as a system that maintains and reinforces social disparities, it is necessary to review other theories regarding the social mobility of individuals as well as those approaches regarding education and especially higher education’s role in facilitating social mobility.

2.3. Social and private benefits of higher education

There is not a country in the world without a system of higher education, and in essence all countries have pursued similar goals. However, several approaches revolve around the private and public benefits emanating from higher education. Brian Pusser (2002) declares that public and private benefits are generated when the population acquires higher levels of education. Private economic benefits include higher rates of employment, higher wages, and increased labour market mobility. Public benefits include higher levels of civic education,

greater civic engagement and higher rates of democratic participation. Quoting Howard Bowen, Pusser observes that:

Education has an advantage over other avenues toward equality, - such as graduated taxes and public assistance- because it can reduce the inequality of what people are and what they can contribute, not merely of what they get (Pusser, 2006, p. 37).

Similarly Bowen (1997) in his analysis of the private and public benefits of higher education, proposes a schematic description of the productive process in higher education as illustrated in Figure 2.2:

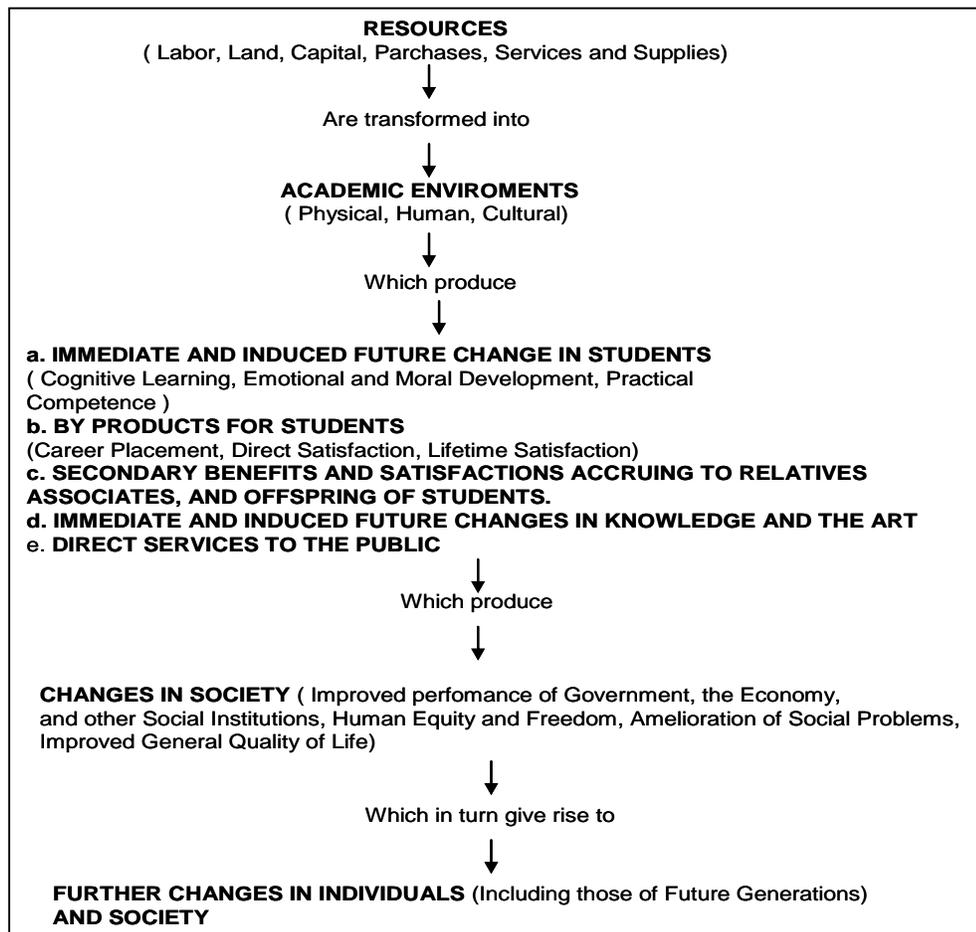


Figure 2.2: Schematic description of the productive process in higher education
Source: (Bowen, 1997, p. 17)

According to this approach, the productive process of higher education generates private as well as public benefits. Apart from the private benefit received by graduates (career placement, direct satisfaction, lifetime satisfaction), and their relatives, society benefits from a more productive labour force, improvement in the economy, good governance, human

equity and freedom, and a general improvement in the quality of life, thereby producing further changes in individuals and society. In relation to social benefits, many arguments have emerged, with evident implications for public policy in education. Psacharopoulos (1994) for example has calculated rates of return to different kinds of education, concluding that primary education must be the investment priority for developing countries and that higher education maintains the advantage of private benefits (Psacharopoulos, 1994). Psacharopoulos confirms this assertion in some of his more recent work in which he maintains that private benefits are higher for higher education than public benefits, and that this is even more pronounced in developing countries. He argues that this is because the public subsidization of education increases with the level of education, and social benefits are difficult to estimate, which has “regressive income distribution implications” (Psacharopoulos & Patrinos, 2004, p. 112). The neo-liberalists Milton & Rose Friedman state that there is no evidence that higher education produces social benefits over and above the benefits that accrue to students for themselves (McLeod, 2006). These authors hold that giving public subsidies to higher education does not correspond to a contribution toward a better distribution of opportunities, and on the contrary, it will benefit the group who can access this level of education. Actually, the calculation of rates of return has consistently shown that social returns are less than private. This result caused the World Bank and some nations to propose, and on some occasions to implement, reduced public funding to universities, promoting in contrast funding methods based on fees and loans. Nevertheless, controversies still exist with respect to the estimation of benefits, which account for the reasons for constant government changes to education policies.

Even though analysis of the benefits of higher education is many decades old, this remains an area of active consideration because estimates of private and public benefits are important; they enhance our understanding of how investment in higher education benefits individuals or society as a whole. Within this framework, The Institute for Higher Education Policy (1998), recognizes the public and private benefits of tertiary education and classifies them in four categories: public economic benefits; private economic benefits; public social benefits and private social benefits, identifying benefits for each of them (Figure 2.3).

	Public	Private
Economic	<ul style="list-style-type: none"> • Higher tax income • Higher productivity • Higher consumption • Work force more flexible • Less financial dependency from the state. 	<ul style="list-style-type: none"> • Higher salaries and benefits • Employment • Higher level of saving • Better personal condition of work • Professional and personal mobility
Social	<ul style="list-style-type: none"> • Less crime rates • Rise of philanthropic conducts and community service • Better quality of civic behaviour • Social cohesion and better regarded for diversity • Increase in adaption capacity to using technology 	<ul style="list-style-type: none"> • Better health conditions and life expectation • Higher quality of life for the children • Better consumption decision • Higher personal status • Better quality of hobbies and free time activities.

Figure 2.3: Public and private benefits of higher education.

Source: The Institute for Higher Education Policy (1998, p. 20)

As individuals complete tertiary studies and obtain good jobs, the government will receive higher tax income, higher consumption, and higher productivity and so on. In general, these benefits improve the national economy. Similarly society benefits from lower crime rates, better quality of civic behaviour, social cohesion, and a higher regard for diversity among other benefits. On the other hand, individuals can raise their salaries, employment and access to better labour conditions, as well as being able to provide a higher standard of living for their children, achieve better health conditions and longer life expectancy, and gain access to a better quality of leisure time activities.

In general, even though some studies provide evidence that private benefits are higher than general social benefits, the lack of consensus makes quantifying these benefits difficult. Numerical estimations show that a society without a higher education system or with a system accessible only to those who can pay for it privately, becomes increasingly

inequitable and far removed from what is generally regarded as the social well-being of the whole community.

2.4. Social mobility, theories and discussion

Social mobility may be defined as the movement of one individual from one social stratum to another, either superior or inferior. A number of diverse factors have been identified in the literature as key promoters of social mobility, including: education, gender and ethnic origin among others. From another point of view, it could be said that the concept of social mobility, shifts the concern with changes in the temporal position of the people within a hierarchical social structure to one which might explore the determinants of change (Torche & Wornald, 2004). Mobility can be viewed as rising or descending within a particular social structure, with explanatory theories that are linked to class.

Stratification approaches are focused mainly on vertical mobility and because the best indicators of social position are occupational categories, social mobility studies are based in a broad way on scrutinizing changes in the labour market. There are diverse ways to understand mobility, which are subordinated to the type of measurement used. Two ways of understanding movements within the social structure are intergenerational class mobility and intra-generational mobility.

Intergenerational class mobility examines the relationship between the current circumstances of people and those of their social origin. The focus could be on the relationship between their own and their parents' income, or on the current social class of an individual and the class within which he or she was nurtured (Breen, 2004). Intra-generational mobility examines changes of circumstances over a single life-time. A common strategy centres on the analysis of the relationship between the social status of the first labour position and that of the current occupation. However, many studies regarding intra-generational mobility are more sophisticated than this, pursuing detailed models and trajectories of people's careers (Breen, 2004)

Empirical studies, in general, clearly connect labour trajectories with socioeconomic origin and educational outcomes of the parents, in terms of inter as well as intra-generational mobility, such as in a study of social exclusion and youth unemployment (Bynner, 1999). In general, those who come from a lower socioeconomic background are those who have the lowest social mobility. Other studies have demonstrated that the social benefit of education can be traced to several dimensions: better labour outcomes (fundamentally due to the better tools they have for facing unemployment), better preparation for acquiring new competencies, better health conditions and lower vulnerability. In addition, children of those who have had tertiary education have, comparatively speaking better educational situations, fewer learning problems, and therefore better educational achievements and aspirations (Bynner & Egerton, 2001; Sewell & Shah, 1968)

In general terms, theories and studies regarding social classes are diverse, and, according to Alvarez (1996) they can be summarized in three groups; those focused on material interest; those focused on experiences lived; and those that revolve around collective capabilities. Within the group of those focused on experiences lived the approach of Pierre Bourdieu could be considered as the most important among those who prefer to speak of ‘trajectories of classes’ rather than ‘social mobility’.

According to Bourdieu, society is configured as a social space formed by different fields (economic, cultural, social, symbolic), which correspond to respective types of capital. These fields are specific systems that can be in conflict or cooperation, alliance or competition. The systems vary according to the different positions of individuals within them. In each field, there are specific types of capital, and it can exist in two ways: in an objectified state (physical objects that are owned), or in an embodied state (cultural capital). Bourdieu distinguishes four types of capital: *economic capital* (command over economic resources); *cultural capital* (forms of knowledge, skills, education, and advantages that a person has). This type of capital can exist in its objectified state, in its institutionalized state and in its embodied state, assuming that its incorporation requires effort and individual work (Bourdieu, 1987). *Symbolic capital* (prestige, reputation, etc.); and finally *social capital* understood as “network relations within a group viewed as a potential, but nevertheless concrete and useful resource

from which the individual group member can profit-socially as well as economically” (Svendsen & Svendsen, 2004, p. 250).

Thus, agents or individuals are distributed within this social space according to, a) the total volume of capital that they own; and b) according to capital composition, that is, according to the relative power of the different species of capital within their entire possession. The social space is where the classes are recognized, and this space contains conditions (understood as possessions or properties linked to one type of material condition of existence and practice) and positions (understood as the place occupied within social space by the relationship with other groups or classes). According to Pierre Bourdieu the closer the individuals are within a social space, the higher is the probability of carrying out a group action and therefore forming social groups, such as family, clubs, and associations, among others. Figure 2.4 shows the relationships between greater or less volumes of capital.

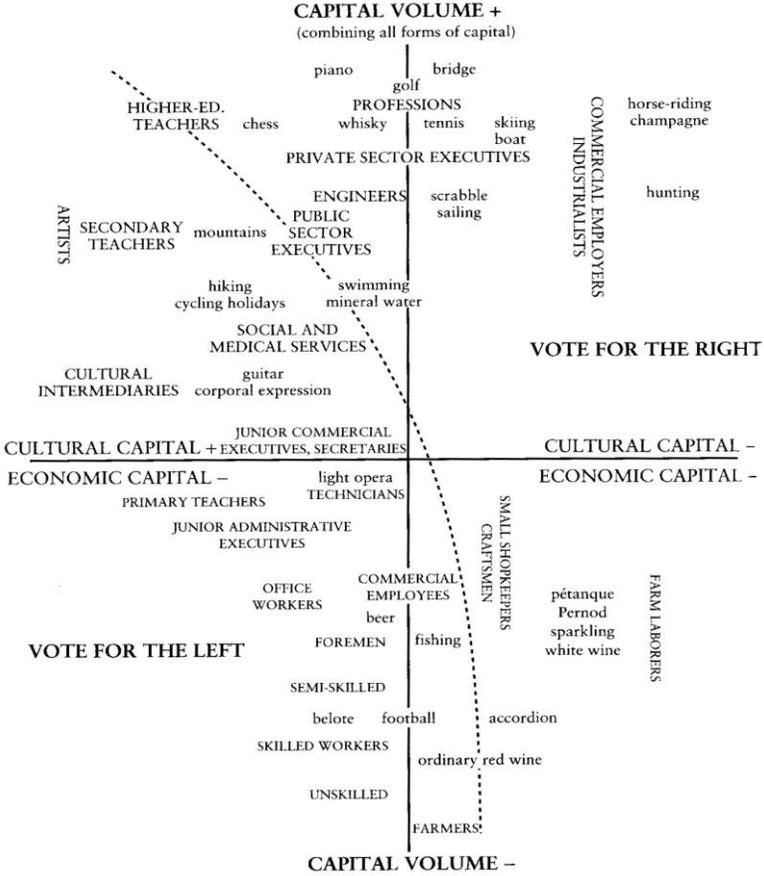


Figure 2.4: The Space of social position according Bourdieu and Passeron: (Bourdieu, 1997, p. 30).

Bourdieu argues that:

Social class cannot be defined by one property (although is one of the most determinant), neither by a sum of properties (gender, age, social origin or ethnic proportion of white and non-white, income, level of instruction, etcetera), and much less by a string ordered from a fundamental one (position in the production relationship) in a connection cause–effect, from conditioning to conditioned, otherwise by the structures of the relations among all pertinent properties, which confer its own worth to each of them and by the effect that apply over practices (Bourdieu, 1998, p. 104)

The analysis of social class must consider several variables, objectives (goods), subjective (conscience) and practices (mobilization) from a diachronic perspective that is, from trajectories transited by the individuals. This will allow an understanding of how classes move through different types of actions, from the selection of an academic program, to graduation and employment. Social classes are distributed within the social space in a differential form, the capital driven by the agents will determine the position in the space, and this position in turn will condition their habitus.

Social theorists do not doubt that the difference in educational attainment and occupational destinations stem from a combination of factors encompassed by the ‘nature-nurture’ debate and continuum. It is not disputed by anyone that some families are better resourced than others, that they are richer or poorer, more or less socially connected to the systems of cultural and political power, and more or less centred around a culture of literacy. What is disputed is the ability of the education system to nullify the effects of such home endowments. While the functionalist tradition remains generally optimistic that education per se is capable of transforming individuals resulting in educational gains for ‘underachieving groups’ the critical tradition is more pessimistic – it doubts that education in general and higher education in particular can compensate for the class differences that characterise modern capitalism. This debate is at the centre of this doctoral research. Does the higher education system in Chile facilitate social mobility or does it reinforce class differences and thereby operate as an agent of social control? In order to address this debate the critical analysis now centres on Chile.

2.5. The concept of equity

The concept of equity is mainly associated with justice, the fulfillment of rights or equality. Equity can be considered in various areas of society, in the distribution of wealth, access to the labor market, health, and other life outcomes. In legal terms equity may be defined as:

“Fundamentally fair. The word equity expresses one of the dimensions of the idea of justice, namely, the principle of equality and proportionality. In this sense, justice and equity would be synonymous words”
(www.lavozdelderecho.cl)

In all areas, equity is related to the level of justice with which everyone is treated, without favoritism, impartially but equity is often confused with equality. In a study of students at the Universidad de Chile (Ramírez, 2013) about the relationship between neoliberalism and equity, it was shown that while the first concept is associated with inequality, selfishness, etc. the second is directly associated with justice, opportunities, development, and so on.

Karen Mokate (2001), raises two dimensions of equity which make it possible to distinguish or differentiate the latter from equality. She considers "vertical equity", understood as the equal treatment of all the various groups and individuals in society, and "horizontal equity" understood as equal treatment of equals. It is important to distinguish between two contrasting visions, ie equal treatment could exist in society without necessarily being equitable, thus equal treatment does not necessarily imply fair or equitable treatment. Despite the difference between equality and equity, the latter is closely related to the concept of equal opportunities.

Further insight is added by Teresa Bracho, who speaks of equity as still *"some clear and certain territory"* (Bracho, 2009, p. 2), and whose lack of clarity is justified given that the concept of equity is based on and related to three concepts of great social importance, such as equality, justice and inclusion.

For the purposes of this thesis, equity is addressed in two areas, in the field of wealth or income, and secondly in the field of education. In terms of distribution of wealth and income, equity is related to the level of justice established or implemented in society regarding ownership of assets or access to fair wages, ie someone with the same tools and / or effort,

or rather with the same educational level, independent of their social and economic status, should have the same ability to access better wages.

In terms of education, equity is understood as equal opportunities in access to quality education, equal opportunities or rights in relation to remaining in the system and graduating, and finally equity of incorporation into the labor market. According to UNDP (2005), in higher education, equity means non-discrimination in access rather than guaranteed access for the whole population. Similarly, equity in higher education is a multi-dimensional matter not only limited to access, but which also must consider teaching-learning processes and outcomes in higher education such as dropout rate, completion time, graduation and finally labor market outcomes.

CHAPTER THREE:

PATTERNS OF DEVELOPMENT IN CHILE

In order to examine the development of University education in Chile and its role as ‘an agent of social change’ it is essential first of all that we analyse the context out of which education evolved. This means analysing the political economy of Chilean society over time not as ‘snapshots of development’ but rather as a dynamic process of change and thus the challenge for this research program is being able to make what Sen (1999) refers to as economic, political and social connections. The aim, in research terms, is to identify those forces and drivers that have shaped Chilean society and in the process produced clearly identifiable development patterns.

The approach being adopted here utilises the *development patterns framework* as advanced by Shirley (2011a) that places emphasis on an integrated approach to our understanding of different social formations by linking different cultural traditions and practices with political, economic and social realities. It means building a comprehensive genealogy of historical events by tracking economic and social trends, as well as the way in which these trends can be understood as patterns or phases of development that are simultaneously historical, empirical and critical. It is an approach to development that rejects the pedestrian approach of Rostow (1960) who viewed development as cumulative stages of economic growth and it eschews the ‘single-minded’ approach that was criticized by Stiglitz (2006) for the way in which development was viewed through the prism of economics and economics alone.

If applied to the genealogy of Chile’s written history, it is feasible to identify different patterns of development that distinguish one phase or social formation from another. These distinctions can be made by:

- Analysing the conditions of the time that gave rise to a particular period of development;

- An examination of external and internal forces that shaped development including political, social, cultural and economic factors;
- An exploration of the underlying beliefs and assumptions that played a role in the promotion of development policies and practices; and
- An interpretation of the transition between one social formation and the next.

In historical terms this means tracing the development of Chile from colonization through what Pablo Ruiz-Tagle refers to as a series of ‘Republics’ (Cristi & Ruiz-Tagle, 2008) including a flirtation with democracy, a military dictatorship and more recently its ‘graduation’ as a member-nation of the OECD described in 2012 by the World Bank as one of the fastest growing Latin American economies (2012).

The colonization of Chile dates back to 1520 when the first expedition arrived in the country as part of the European colonization of America. The expedition was led by the Portuguese Hernando de Magallanes and was followed nearly two decades later by the Spaniard Diego de Almagro but his expedition failed and when he was defeated by the native “Mapuches” in the south he returned to Peru. Apart from these two expeditions the genesis of Chile’s colonization is traditionally associated with Pedro de Valdivia who was authorized by the Viceroy of Peru around 1540 to start a new expedition. Valdivia arrived in the Copiapo valley to the north of Chile, took possession of the land on behalf of the King of Spain and named it *Nueva Extremadura*. His expedition continued toward the south where he had his first encounter with the natives of the central north of Chile, the *Picunches* led by their chief Michimalonco. The natives could not stop Valdivia’s advance south toward the central valley where in 1541 he established Santiago as the capital city of Chile.

The colonization process was marked by continuous fighting between Spanish colonizers and the natives known by the generic term as *Araucanian*, with the indigenous population being rapidly absorbed by the ‘Spanish State’ in terms of religion, the economy, and politics. The ‘blending’ of Spaniards and Araucanos formed the predominant population group in the country, creating the genetic structure that are Chileans today (Faron, 1960). Some 200 years

after the genesis of colonization, Chile achieved independence and in 1810 began what is referred to as the republican period.

Throughout the nineteenth century, Chile evolved as a highly centralised autocratic republic, preserving the essence of the stratified colonial social structure, greatly influenced by family politics, the Catholic Church, large landowners, merchants, foreign capitalists and the military. The Constitution of 1833, which lasted until 1925, concentrated authority in the hands of the president elected by a small minority, created an independent judicial system, guaranteed the inheritance of estates and installed Catholicism as the state religion (Tironi, Pozo, & Giovanni, 2013a).

Within the context of Chilean republican life, Pablo Ruiz-Tagle (Cristi & Ruiz-Tagle, 2008), identifies five stages in the development of the republic, characterized by population rights and the regime of the government. The liberal period (1810-1833) which is traditionally associated with the foundation of the Chilean state was followed by what Ruiz-Tagle refers to as “*The Authoritarian Republic*”, (1833-1871), conservative in terms of population rights and authoritarian in its approach to governance. The third period “*The Liberal Republic*” (1871-1924), was associated with religious and political freedom, and this was followed by what Ruiz-Tagle refers to as the democratization of the republic reflecting greater social participation and ‘popular’ democracy. The fourth republic ended in 1973 with the Military Coup led by Augusto Pinochet, sponsored by the Chilean elite (members of the Conservative and Liberal political parties), the Christian Democratic Party and the United States of America. The military coup effectively ended the Chilean Constitution of 1925 and terminated republican life in Chile for almost 17 years. Since that time the military state has been ‘modified’ with more recent interpretations by economists (notably the World Bank) emphasizing Chile’s success as the fastest growing economy in South America.

In order to integrate these different interpretations of development and thereby provide a more comprehensive analysis of development patterns this chapter will examine four different periods or social formations: the Foundation of the Chilean state; the Authoritarian

Republic; the Military Dictatorship and the era of economic fundamentalism; and finally the Re-emergence of the Republic and membership of the OECD.

3.1. The Foundations of the Chilean State

3.1.1 *Economic Order*

In the nineteenth century, a period that included the independence of the country, and more than two stages of Chilean republican life, the economy was based mainly on the mining industry (copper, silver, coal, gold and the so called “white gold” saltpetre), and agriculture. In general terms, the economic development of the country in the nineteenth century was sufficient to maintain the prosperity of the elite or aristocracy. Boeninger (1998) describes the period 1830-1860, as an economy based mainly on private activity, with strong collaboration from the State, especially in building the country’s physical infrastructure. After that period, liberal economic ideas began to predominate. In 1860 private banking was established (DIBAM, 2012b), and the agricultural sector faced a period of crisis due to the loss of important external markets such as California and Australia as well as the growth of the ranching sector in Argentina. At the same time the mining sector carried on growing in the north, based essentially on the saltpetre industry and Chilean investment in Antofagasta. The economic dynamism in the mining sector unleashed the War of the Pacific, against the Peru–Bolivia confederation, (1879-1881). As a consequence of victory in this war Chile extended its territory into Arica (part of Bolivia and Peru) but at the same time the country lost sovereignty over the sea. Because it owned the saltpetre industry, Chile decided to incorporate external investment, eventually achieving 85 per cent of industry ownership by European investors, mainly British. Increasingly Chile based its economic development on the exploitation of natural resources underpinned by foreign capital. Some authors have criticised the model adopted, especially the lack of ambition or vision of the Chilean business community. Although government income increased considerably Chile’s fiscal income grew more than ten times in 30 years, from \$5,580,800 Chilean pesos in 1861 to \$55,723,300 in 1891 (Villalobos, 2003, p. 262).

Notwithstanding the growth and importance of the mining sector, it was agriculture that dominated traditional life with four out of five Chileans in the 1860’s living in the

countryside. The colonial legacy was overwhelming. “Throughout the nineteenth century, Chile remained a land of great estates, ownership of which conferred social status, political influence (if desired) and a comfortable income” (Bethell, 2003, p. 15). Thus Chile’s economy in the second half of nineteenth century mainly benefited a small group of citizens. As statistics from 1854 demonstrate 850 landowners received two-thirds of all the income from agriculture produced in the central valley (Bethell, 2003).

The economic growth generated by the saltpetre industry continued until the end of the second decade of the 20th century. The growth of taxation generated from exports allowed the government to increase public expenditure, and implement an important expansion in public works: the public railway was extended from 1,106 kilometres in 1890 to 4,579 in 1920 (Meller, 1998). In the same way, educational enrolments also increased from 157,660 and 12,660 students in primary and secondary schools respectively in 1900, to 346,000 and 49,000 two decades later. Chile’s geography was modified as a result of the combination of diplomatic and military successes, and apart from the new territories in the north as a result of the Pacific War, toward the south, the military suppressed the indigenous *Mapuche*, consolidating territorial control over the *Araucania*, while in 1881, a treaty with Argentina confirmed Chilean sovereignty over the Strait of Magellan. At the same time Chile conceded all of eastern Patagonia.

3.1.2 The Social Foundations

From the advent of independence, Chile was shaped as a country consisting of two main social groups: a small creole upper class (descendants of the colonial settlers) and a much larger pool of working people, predominantly *mestizo* (a blend between Spanish and indigenous people) as well as rural dwellers. The middle class was almost non-existent. Traders and professionals belonged to the upper class while some medium range military personnel, poorly educated government employees and artisans were a relatively small group without influence. Some historians such as Alberto Edwards describe the origins of the Chilean republican period as being led by the aristocracy which was wealthy, educated and concentrated mainly in Santiago (Edwards, 2005). Conversely the description of the social

structure after the independence of Chile has been catalogued by other historians such as Gabriel Salazar as a *myth*. He describes the elite or ruling classes as provincials, inheritors of the colonial rural life without enormous wealth, in a country, at least until 1830s, where the population was concentrated in rural areas (Salazar & Pinto, 1999).

From the 1830's onward the growth of the domestic economy created a new kind of Chilean elite, which was described as being more sophisticated and influenced by the upper classes of Europe, especially France and England. The expansion of exports on the platform established by the mining industry (including silver), the arrival of new families, new wealth, and new styles of life were factors that added complexity to the Chilean upper class. This period coincided with the advent of the *Authoritarian Republic* and the promotion of a national project advancing "*social order*", which was in fact a very conservative form of politics combined with economic liberalism.

The growth of migrants from abroad, mainly from England, France and the United States, increased significantly during this period. These migrants settled mainly in Santiago and Valparaiso, and were an important group of technicians and navy companies employed in the north of the country, where they were predominantly engaged in mining and industry development. Migrants were attractive to the existing upper class families, enhancing their attitudes and beliefs and placing them in what was regarded at the time as a 'superior sphere' of society. The country needed migrants in that they brought new techniques and new concepts for a society seeking modernisation: new settlers were considered necessary for the country's development (Villalobos, Silva, Silva, & Estelle, 2004). Despite the foregoing, international migration to Chile was very limited mainly because of the lack of economic opportunities, the absence of supportive government policies and the geographical isolation of the country. To put this in perspective, while net migration reached almost 2.5 million people in Argentina between 1889 and 1914, only 55,572 people migrated to Chile during the same period. Yet, despite their limited numbers, foreign-born migrants had an enormous influence especially in the non-agricultural sector of the Chilean economy. By 1914, foreigners owned nearly one-third of the nation's commercial houses and 49 per cent of Chilean industrial enterprises (Meller, 1998).

At the beginning of the second half of the nineteenth century, a more sophisticated aristocracy was evident, dominating the country economically, culturally and politically. There still remained a huge labouring class, although historians differ as to the composition of two strata or groups said to comprise the working class; the middle class and the indigenous people. Unlike the aristocracy, the middle class did not participate in the decision-making processes of government.

In his exploration of class composition and class practices, Gabriel Salazar(1999) identifies a middle class from the time of independence or even before, which becomes differentiated from other classes around the middle of the nineteenth century. He distinguishes between the owners of capital and the working class as well as identifying artisans, government employees, and army members among others. Indigenous peoples are categorised as members of the working class: the proletariat of the republic. Villalobos, in his *History of Chile* (Villalobos et al., 2004), develops an optimistic or positive view regarding the indigenous people, describing the foundations of Chilean republican life as a period during which the original settlers were incorporated into Chilean society.

In their desire to integrate indigenous people into the republic, the Chilean government abolished the concept of the ‘endogenous’ community, and reinforced the rights of all citizens to live freely in any part of the country thereby facilitating a blending of families, mixed marriages and ending rivalries in a country of brothers. By contrast Gabriel Salazar’s (1999) interpretation of the changing patterns of settlement seems closer to reality. He describes how during independence the natives were seen as “warriors and liberators”(Salazar & Pinto, 1999, p. 141), thereby reinforcing their right to fight against the Spaniards. However it was only their leaders and heroes (Galvarino, Lautaro among others) that were recognized by the elite at that time. The traditional “*indio*” was perceived as being lazy, alcoholic and work-shy and therefore an obstacle to development and an impediment to national progress and modernity as sought by the Chilean leadership (Salazar & Pinto, 1999)

In the second half of the century, the rigidity of the social structure continued unabated. For example in 1874 only two per cent of the population had voting rights, due to the fact that only literate men, older than 21 years old, married, and older than 25 years if they were single; with a profession and meeting a minimum wealth requirement had voting rights (Boeninger, 1998). The large population of peasants who were without educational qualifications was completely dominated by the elite. The concept of social disorder as defined by the dominant class did not register until the end of the 19th century. It was the expansion of the domestic economy after the Pacific war, and the growth of earnings by the state that clarified the existence of a middle class, formed by the owners of small businesses and farms, employees of the expanding public bureaucracy, clerical employees in trade, and the artisans and craftsmen of the town (Bethell, 2003).

The rate of urbanisation in Chile increased significantly throughout this period reaching 46 percent of the country's population in 1895. This growth was mainly driven by Santiago whose population more than doubled between the two census returns of 1870 and 1907, reaching 332,724. In 1900 the first electric streetcars were introduced, and by 1903 the city had 275 electric cars covering 97 kilometres of track. In the same period a circumferential railroad was completed, providing Santiago with a widespread and modern public transportation system. However, these improvements merely serviced the wealthy centre of the city, while the areas where the vast majority of the population lived had no sewer systems, clean water or garbage collections (Walker, 2005).

Internal migration represented the main source of urban growth, driven by the combination of poor living conditions in the countryside and the highly cyclical fluctuations of the mining sector. The major pull factor in terms of domestic migration was the attraction of employment opportunities provided by the expansion of the national government for the provincial elites and a nascent middle class (Tironi et al., 2013a) .

3.2. The Authoritarian Republic

3.2.1 *Economic order*

The economic development of the country expanded in the twentieth century with the saltpetre industry being particularly significant. Saltpetre was the biggest export industry of the country and the driver of economic development, achieving by 1900 eight times the export value of silver, four times the export value of copper and sixteen times the export value of gold (Meller, 1998, p. 19). The nitrate industry represented 59 percent of total Chilean exports by 1925 with the volume of exports almost doubling between 1900 and 1920. The revenue generated for the country was mostly through taxation with British capital being the most important component. Because of these trends questions have frequently been raised regarding foreign control of the saltpetre industry. The saltpetre fields were close to the sea, labour intensive and required low levels of technological expertise. Chile was in a strong position to control its own assets especially following the Pacific War that effectively saw the country assume ownership of the main fields of nitrate. Patricio Meller (1998) argues however that the scale of mining required more sophisticated techniques, logistic expertise and administration than the Chileans could provide. Others argue that the development of the industry was supported by a high level of corruption within the state bureaucracy (Gumucio, 2005).

Eventually the period of growth for the government by way of taxation and the benefits for British investors began to decline with major factors being the creation of synthetic nitrate in Germany and the collapse of the mining industry during the *Great Depression* in 1929, when Chilean nitrate exports dropped from an average of MMUS\$126.9 in 1929 to MMUS\$27.7 in 1932. At the same time the proportion of saltpetre exports fell from 48.8 per cent to 18.5 per cent over the same period (Meller, 1998) .

The loss of a major driver of Chilean exports and the main source of funding for the government produced a grave economic crisis in Chile that could not be rectified until the beginning of the 1950s. Gross Domestic Income declined by 10.9 per cent per annum between 1929 and 1933, and by 1950 the income per capita could not achieve the level it formerly recorded in 1925 (Boeninger, 1998). A mono-export economy with low levels of

industrialisation and a weak agricultural sector (a characteristic of many countries in South America) led to a major change in economic policy, namely a focus on import substitution. *Import Substitution Industrialisation (ISI)* was the main development strategy adopted from 1940 comprising two main elements: economic independence from the global market and a reduction in the country's external vulnerability. The ISI process was promoted strongly by the government, creating CORFO, the national agency that established cheaper credit facilities and subsidies to industry. The foundation of government companies became particularly significant. Examples include: the national electricity company (ENDESA) in 1944; the national steel company (CAP) in 1946; the national petroleum company (ENAP) in 1950; and the state bank of 1953.

Notwithstanding the above, and the traditional view of the creation of the Chilean manufacturing industry after the depression of the 30s and products incorporating ISI, economists such as Gabriel Palma (1984) consider development of the Chilean industry generated at the beginning of the First World War, in which, although there was a significant dependence on nitrate, manufacturing which started at the beginning of the century became an important driver of development. Examples are the foundation of several important companies such as: Compañía de Cervecerías Unidas in 1902, the Compañía de Molinos y Fideos Carozzi in 1906, The Sociedad Nacional Fábrica de Vidrios in 1904, among many others. The start of the First World War was a major factor in the development of national industry. Chile being the producer of saltpeter in the world, exports grew strongly in the manufacture of explosives, and in turn the same effects of the war strongly restricted imports, motivating the beginning of the local manufacturing industry, thus already before 1920 would have begun in Chile the transition from an export-oriented economy to one emphasizing import substitution.

In parallel, substituting the importance of nitrate for copper in the mining sector saw the latter comprise 39 per cent of Chilean exports by 1940 and as in the case of saltpetre, the investment in the *Greater Mining of Copper (GMC)* was almost exclusively external, in this case from United States of America. The copper industry was concentrated in the central valley (El Teniente) and in the north (Chuquibambilla) requiring high levels of capital, increasing

technical knowledge and a long term rate of return. The Chilean economy did not have the capital required, or the requisite skills for extraction. As a consequence, the management of the GMC became increasingly difficult. As taxation was the main mechanism employed to increase Chilean participation in the copper industry it made relationships difficult between the Chilean government and US companies as well as the US government.

At the beginning of the 1960s, during the period of the democratic republic and after many years of central left governments, Chile was governed by the conservative party of Jorge Alessandri Rodriguez (1964). The state occupied an important position in industrial production with government returning companies 14.2 percent of GDP in 1965 while the copper industry represented almost 56 percent of all Chilean exports (Meller, 1998). Despite these achievements high levels of inflation, unemployment and the concentration of wealth in the hands of a minority remained features of the Chilean economy. In 1950, 0.7 percent of property owners controlled 67 per cent of the arable land. Conversely, 83 percent of farmers owned 11 percent of land (Lagos, 1961), and copper mining in the country belonged almost exclusively to US-based companies. In 1960, the poorest ten percent of the population generated 1.6 percent of national income while the wealthiest ten percent of the population generated 34.9 percent of income (Luders, 1988).

During this period, large public works were carried out and the state increased its role in the economy, with the copper industry in the early 1970s accounting for 80 percent of total exports. This dependence on the revenues of a single natural resource in terms of export and fiscal revenues was at the heart of the fluctuations experienced by the Chilean economy. At the same time, import substitution policies and subsidies favoured the development of a diversified national manufacturing sector whose inefficiencies were disguised by prohibitive tariff barriers. Large landowners expanded their investments in the manufacturing and service sectors, limiting economic and social development. One of the main characteristics of this period was the rise of an urban proletariat, which often challenged the interests of the urban elite, while the deprived rural poor had little political influence (Bauer, 1975). Chile maintained deep-seated levels of inequality throughout its economic development.

Industrialisation in Chile was based on mineral resources (nitrates, copper), local light industry (food processing, textiles and apparel), and a few protected heavy industries. There was little domestic research or science-based industrialisation in a country that provided limited support for public education and few incentives for social mobility. In economic terms Chile's integration into the global economy did not change dramatically over the centuries as it continued to be a provider of a few valued natural resources. Yet largely as a consequence of domestic and export growth, Chile's economy experienced an extended period of economic growth from the time of the Great Depression. From 1932 until 1971, GDP per capita steadily grew at the rate of 2.6 per cent a year (De-Gregorio, 2004).

These conditions were no doubt one factor in the 1970 election of Salvador Allende as President of Chile; the first socialist in the country to be elected democratically. He was sponsored by a political conglomerate named *Popular Unity*, and comprised of the Radical, Socialist, Communist, and Left Radical Parties. Inspired by the Cuban revolution of 1959, socialist ideas were exported to Latin America and once elected to power the government of Allende began to implement drastic economic measures. The state set out to increase its role in economic development. Government took responsibility for central planning and this was reflected in the participation rate of governmental companies which increased their share of GDP from 14.2 percent in 1965 to 39 percent in 1972 (Meller, 1998).

The vision of the copper exports as an engine of sustained growth since the depression of 1929, diverges from what was posed by economist Oscar Muñoz (2000), in which the model of import substitution and state intervention in setting the domestic industry largely explains this growth. During World War II, demand for export products was strengthened and imports contracted, given the impossibility of incorporating consumption goods and capital from countries at war, which meant a boom for Latin America for industrialization processes.

Paradoxically, during the previous government of Alessandri, with strong support from the Catholic Church, Chile began a programme of agrarian reform which included the transfer of non-utilized land to the peasants. In the first stage of this initiative, the distributed land belonged mostly to the state and the Church. It was a process that was continued under the

Christian Democratic Party of Eduardo Frei (1965-1970), and encompassed land owned by the private sector. The initiative was strongly advanced by the Allende government. In fact, between 1965 and 1970, 1,319 blocks of land, totalling almost 3.5 million hectares were expropriated. The level of expropriation achieved by the Allende government amounted to almost 4,400 blocks of land equivalent to 6.4 million hectares (DIBAM, 2012a) thus ending the large estate period in the country's history. The other important economic feature arising from this period was the copper nationalization process, initiated in 1953 with the agreement of all political sectors in Chile. These initiatives were major factors in driving the military coup on the 11th of September in 1973 which abruptly ended the *popular unity government*, the Chilean constitution of 1925 and the governance of the Chilean republic.

3.2.2 Social Order

During the latter decades of the nineteenth century the position of the middle class was consolidated in Chile. The economic boom experienced by the saltpetre industry, and the growth of taxation revenues underpinned urban development as well as the size of government. In absolute terms, the number of government employees increased from 3,000 in 1881 to more than 27,000 in 1919 (Meller, 1998). Urban development was promoted by a rural exodus that led to incremental increases in small and medium sized businesses thereby reducing the rural population by 1920 to around 50 percent (Boeninger, 1998). At the same time the growth experienced in education paved the way for enrolment in secondary and higher education for some groups that did not belong to the elite.

In political terms, Salazar (1999) describes the way in which the oligarchy in Chile was increasingly discredited during this period thereby paving the way for the middle class to play a role in the government of the country. It was a period in which the role of government and the management of the economy became openly contested. Whereas some groups sought to put an end to historical inequities, upper class factions expressed their dissatisfaction with the management of the mining industry. The saltpetre labour force had grown from 3,000 in 1880 to more than 57,000 in 1918 while the number of coal workers reached 12,000 by 1904. The deplorable labour conditions in these industries promoted the formation of labour unions

and in 1912 the establishment of *the Socialist Workers Party* (Partido Obrero Socialista) with branches gradually spreading out across the country (Collier & Sater, 2004).

Thus, the second decade of the twentieth century saw the political spectrum become more varied with the strong participation of the middle class and the labour movement. In 1920 Arturo Alessandri Palma, a member of the Liberal Alliance was elected President. His party was shaped by the Democratic and Radical Parties, whose manifestoes were characterized by the defence of the working class and social insurance. It was a period that produced a new Constitution in 1925 and despite a military uprising that same year the legislation was finally implemented in 1932. This has been characterised as the beginning of the presidential era and the democratization of the republic. It heralded important social changes such as: female voting for municipal elections in 1935 and participation in presidential and parliamentary elections in 1949 (Maza, 1995); and the emergence of new political parties such as the Chilean Socialist Party in 1933 and the National Phalanx in 1935.

Salazar (1999) explains that, even though the popular and middle classes began to have more influence as reflected in political participation, their influence was limited until 1938. Even though Alessandri became president in 1920 and oversaw the new Chilean Constitution it was a very challenging and difficult period, encompassing the military coup led by Carlos Ibanez, the incorporation of the army in national politics; and on the economic front the fall of the nitrate 'economy'. These conditions paved the way for the *social revolution* of 1938 and the triumph of the *Popular Front*. The electoral coalition shaped by the Radical, Socialist, Communist, and Democratic Parties, effectively replaced the political hegemony of the aristocracy, including professional leaders and technicians who belonged to the middle class.

Yet despite these governance changes the oligarchy maintained a high rate of parliamentary participation, and any political displacement did not imply their loss of power. The elite maintained their capital assets in agriculture and land although the composition of the elite was changing. Increasing numbers of middle class members gained access to the elite because of their technical expertise and economic success. There also appeared to be a transition in their allegiance from French to English and to ties with the United States of

America in particular. Although Parliamentary representation was broadened the marked disparities within Chilean society were consistent with what was described as a characteristic Latin American scenario. John Rector (2005) estimated that by 1950 based on income statistics, between 15 and 20 percent of the Chilean population belonged to the middle class whereas educational statistics identified 33 percent as members of that class. This gap between income and educational expectations exemplifies the disjuncture between income and educational credentials. The middle class on average earned seven times more than farm workers who received the lowest salaries and represented 29 percent of the economically active population. Urban workers represented 45 percent of the economically active population but their incomes were three times less than rural workers (Rector, 2005).

The *Popular Front* in Chilean politics included centre-left parties and several workers' organizations which had close links to the socialist and communist parties. Some historians maintain that an important group of oligarchy members accepted the new government as a way of maintaining relationships with the worker's movement and thus the means of restraining peasant unionization. Indeed, important landowners belonged to the Radical Party including the elected president himself Pedro Aguirre Cerda. Boenninger (1998) illustrates how office employees had better treatment than workers during President Cerda's administration, including increasing salary adjustments, unemployment insurance, and a minimum wage. This treatment produced a growing gap between the middle and working classes triggering distancing between parties of the centre and the left.

The middle class had the opportunity of advancing economic development, defeating the oligarchy in political terms and addressing historical problems such as unemployment and the provision of food and housing. However, the most productive sectors of the middle-class could not consolidate their position or address the concerns of the proletariat. These factors were important in their electoral defeat by the *Popular Unity Party* in 1970 and the election of Salvador Allende as President. According to Gabriel Salazar (1999), the Chilean middle class was slowly being incorporated into the bourgeoisie thereby abandoning the project that they had initiated and earning themselves the label of a *traitor class*. They could not resolve the historical problem of 'governance', fearing the loss of the status they had already

achieved combined with a fascination for the market and consumerism. They therefore abandoned the popular project that they had initially supported and finished up backing the military coup in 1973.

3.3. The military dictatorship

The military coup of 11th September 1973 was led by General Augusto Pinochet. It was sponsored by the Chilean elite (members of the conservative and liberal political parties), the Christian Democratic Party and the United States of America. It led to the death of Salvador Allende. The killing of the President symbolised the destruction of Chile's long though fragile history of democratic leadership and it marked the beginning of a 17-year dictatorship that ended the Chilean Constitution and redefined the economic and social policies that had been established during the republican formation. The military dictatorship was characterised by authoritarianism and repression. It was accompanied by intolerance of alternative political parties and policies, the closing of social science faculties in the universities and the exile of thousands of Chilean citizens with more than 3000 recorded as missing or consigned to execution. The military regime did not hesitate to use violence, torture and killings in the name of neo-liberal economic theory.

The suppression of civil liberties was complementary to the establishment of economic liberalization as the US-sponsored 'Chicago Boys'¹ became Pinochet's economic advisers. In their quest for the 'perfect market economy', the economists from the Chicago School of Economics designed and implemented a revolutionary anti-state 'shock therapy'. Military rule allowed them to operate as if in a laboratory, free from every political and social constraint and able to disregard the negative outcomes and the enormous social costs of their economic policies. All failures such as rampant inflation and unemployment were interpreted by these advisors as symptoms of persistent 'imperfections' or 'distortions' in the economy, which had to be cured through increased doses of the same medicine. Driven by the ideology

¹ The 'Chicago boys,' were a group of Chilean economists trained at the University of Chicago thanks to a State Department funded training programme, the "Chile Project" started in the early 1950.

of market fundamentalism, they approved successive waves of increasingly radical reforms, such as financial liberalization, the selling off of hundreds of public companies, sharp cuts (up to 50 per cent) of public expenditure, the replacement of the public school system by vouchers and charter schools, a 'pay-as-you-go' health care system and the privatization of the social security system.

The Chilean population as well as political parties were divided by an abyss before and after the military coup. The economic problems encompassed inflation and the scarcity of goods and services and these factors were used to justify military intervention. Boeninger (1998) argues that the end of Chilean democracy was strictly a political phenomenon whose gestation began during the 1960s and not precisely during the term of the *Popular Unity* government. One of the main causes, he argues, was strong political party polarization and ideological conflict. Whereas left-wing parties believed in a Marxist revolution propelled and motivated by the *Cuban Revolution* in 1959, Christian Democracy postulated a form of progressive Catholicism with a social conscience. The political leadership of the country was divided along ideological lines thus exacerbating the economic and social crises experienced during the *Popular Unity* government and increasing the level of discontent among a significant proportion of the population. These factors combined to both facilitate opposition and acquiescence in the face of military intervention.

The military coup dissolved parliamentary rule in Chile replacing it with a governing board shaped by all branches of the military. The fragmented national leadership that had bloomed during previous decades was consigned to history. Government control over land and companies was reversed with more than 400 companies and banks being privatized. Land that had been expropriated during the latter years of the republican formation was returned to its former owners (Meller, 1998). Fiscal restructuring included a major retraction in public expenditure, the elimination of taxes on wealth and capital and a reduction of taxation on profits. In 1975 the banks were returned to private ownership with interest rates being totally unregulated (Ffrench-Davis, 2005). The privatization process took place under a domestic recession experiencing high interest rates and thus the major beneficiaries were the wealthy

(Ffrench-Davis, 2005; Meller, 1998). It is estimated that around 30 percent of the enterprise value was subsidized by the government as a component of the purchase price.

Although the economic policies employed by the dictatorship initially appeared to bear results in controlling inflation and in generating a growth rate of 7 percent during the period 1977-1981 (Meller, 1998; Velasco, 1991) the 'economic miracle' had dissolved by 1982 and Chile entered its most significant crisis since the collapse of the nitrate industry. GDP dropped by more than 14 percent, unemployment increased from 11 percent in 1981 to more than 22 percent in 1982 and with the international decline in copper prices the US dollar appreciated thereby increasing interest rates abroad (Velasco, 1991). Chilean banks began to lend money as if operating a 'casino economy' and the government had to rescue and liquidate the troubled financial sector. Government closed three banks, intervened in five others and at the same time other banks and financial organizations were forced to borrow funds from the Central Bank, thus reducing its national reserves to 53 percent of that normally held in reserve in 1981. By 1983 unemployment levels and inflation, followed by a continuous deterioration in real wages generated a social, political and economic crisis. This exacerbated the environment of repression under the Pinochet regime.

For more than a decade the economic results of this shock therapy produced even greater dislocation than that experienced during the republican period. Chile's 1984 GDP per capita was back to its 1965 level (De-Gregorio, 2004) with the reality being much worse than that evident from statistical indicators. There were some beneficiaries notably a few financial speculators who took advantage of the new 'economic freedoms' by accumulating vast fortunes at the expense of the wider society. But for the vast majority of citizens the regime's policies ultimately reinforced economic and social inequities.

Paradoxically, when the 1982 debt crisis erupted and the financial bubble burst, what saved the Chilean state from a catastrophic default was one of the few economic indecisions taken by Pinochet against the orthodox neoliberal doctrine: the retention in public hands of Codelco, the state owned mining company nationalised by Allende and the one company that, generating 85 percent of Chile's export revenues and huge public revenues, kept the

government afloat (Tironi et al, 2013). Facing economic disaster, a wave of social unrest and increasing international isolation, Pinochet chose a new economic team, still neoliberal, but more pragmatic and heterodox. The financial breakdown forced this second wave of neoliberals to adapt and restore state intervention by bailing out private banks although these were later re-privatized to reduce foreign debt.

3.4. The re-emergence of the republic and the re-instatement of democracy

After fifteen years of dictatorship a national plebiscite was held in 1988 giving citizens the opportunity to decide whether or not Augusto Pinochet would continue as President or as chief of the Chilean Army. Under an uncertain scenario, regarding the validity of the process, the opposition participated winning 54.7 per cent of the vote. In this way the opposition to Pinochet, denominated “Concertación de Partidos por la Democracia” presented the candidacy of Patricio Aylwin Azocar who obtained 55 per cent of the vote and was thereby elected president of the republic. The new President assumed his position on the 11th of March 1990.

The new government faced a number of difficulties including its relationship with the Army and the wider issue of basic human rights. In economic terms, the government concentrated on external debt repayments in order to reinstate the country’s reputation and credibility with the international community. The national currency was devalued in order to motivate, expand and diversify the export sector. At the same time wages were controlled and government expenditure was further reduced, both mechanisms aimed at containing costs.

From 1984 to 1998, with democracy restored since 1990, Chile experienced more than a decade of constant and accelerated growth. The so-called ‘golden era’ was sustained by a huge inflow of foreign investment, the liberalization, diversification and expansion of the export sector and growing domestic public and private demand. Despite being often qualified as an economic miracle because of its more recent growth, the neoliberal shock therapy succeeded in modernising the Chilean economy mostly because of unintended consequences, while it left deep scars on Chile’s social fabric. By 1988, 45 percent of the population lived below the poverty line, while the richest 10 percent of Chileans had seen their incomes

increase by 83 percent. At the same time, the size of the Chilean public sector as a share of the GDP shrank from almost 10 percent in 1960 to just 3.6 percent in 2005.

Although democratic Chile maintained some neoliberal alignments, it simultaneously reinforced social investment and social policies. This resulted in an era that, in spite of high income disparities, was able to achieve sustained economic growth with a significant improvement in the quality of life of the population, especially among groups concentrated in the lowest socioeconomic quintiles. During this so-called stabilization phase, after the Asian crisis in the late 1990s, the Chilean economy resumed its growth trend and, favoured by booming commodity prices, achieved an annual growth rate of around five per cent. In 2010 Chile became a member of the OECD.

Chile's economic performance has been constant since the second half of the 1980's although this improved economic performance is not a benefit that can be enjoyed by society as a whole. Although reducing income disparities has been included as a policy objective in recent presidential elections, the situation has not noticeably changed. According to OECD data, Chile today has the worst income distribution profile with a Ginni coefficient of 0.503 in comparison with OECD countries that on average achieve 0.30. In this respect the re-emergence of the Republic and the reinstatement of democracy represents a significant change of direction in terms of public policy and in the overall quality of Chilean life but for significant sections of the population major disparities and injustices continue with these disparities evident in employment and unemployment, in income distribution and in terms of access to a range of services such as education, health and housing.

3.5 Conclusion

In economic terms the exploitation and export of a few natural resources has historically been the fulcrum of Chile's economy, especially mining and agricultural commodities such as grains. Nitrates drove the Chilean economy until World War 1, when the German discovery of synthetic fertilizers caused the decline of the industry (Larrain, Sachs, & Warner, 2000). The economy was dominated by financial and commercial interests, many of which were

foreign owned and controlled (Witker, 1978), while the agricultural sector was economically and socially suffocated by large landowners operating more under the rules of feudalism than those of capitalism (Tironi, Pozo, & Giovanni, 2013b). The development of trade, finance and mining generated a modern elite, together with a growing working class whose needs were largely disregarded by the ruling classes.

The evolution of Chile from a Spanish colony to a modern military state before reconnecting with its republican roots not only records the development patterns that provide the context for an examination of university education in Chile, but also identifies the contradictions and conflicts that have historically characterised alternative interpretations of the country's quest for modernization. The country and its metropolitan city Santiago evoke very divergent responses. To some Chile is a reference point in Latin America and a vindication of what was referred to as 'The Washington Consensus'. To others, notably Galbraith, it illustrates the shortcomings of Milton Friedman's economic experiment resulting in profound social, cultural and economic inequalities. The extreme fluctuations in the political economy of Chile have shaped a country that is seen today as a reference point in Latin America of a dynamic, changing nation that is attractive to migrants from neighbouring countries. It is also a country marked by social divisions wherein the substantial and multifarious inequalities affect the nation's quality of life.

CHAPTER FOUR

THE NATURE OF INEQUALITY IN CHILE

Inequality between different sections of Chilean population stands out as a major characteristic of the country today. In the previous chapter the genesis of the inequality was identified as were the various patterns or phases of development that have conditioned and fashioned the unequal society that has emerged in the 21st Century. These inequalities are manifest in income distribution, in employment and unemployment, and in the provision of a range of services such as education, health and housing.

4.1 Income Inequality

The most graphic expression of inequality is education in the distribution of income, a trend that has become observed in Chile since colonial times. During the colonial period both Chile and Latin America as a whole saw the ownership of land and mining property concentrated in the hands of a small group whereas the general population experienced precariously low levels of education. Historically speaking therefore, there has long been a degree of inequality in property distribution as well as human capital.

Ramos (1996) identifies two additional factors that contributed to income disparities in Chile. First, he stresses low and unequal technology incorporation among companies, arguing that the few companies who could introduce best practice were able to set pricing levels and exercise a monopoly status. Even though they modernized they needed only to pay workers the 'going wage', thereby further concentrating the distribution of income. Adding to this, the small group of wealth-holders demanded custom-designed manufactured goods normally obtained by import, thereby reducing the stimulus for their domestic production. Secondly, Ramos points to the lack of public policies aimed at eliminating the unequal distribution of income, arguing that only in the mid twentieth century, with the approval of universal suffrage and higher levels of democratization in the country, public policies began to be

oriented in this direction. Prior to that time policies tended to reinforce rather than reduce the inequalities.

Although there is no accurate quantitative information that would make it possible to generate an historic index of income distribution, such as the Gini coefficient, ratio between quintiles, among others, there exists relevant information and analysis (both quantitative and qualitative) that make it possible to draw inferences, at least before 1960, regarding income distribution in Chile as well as in Latin America.

The beginning of the independent republic (1810) was shaped with an excessive property concentration of mining and land ownership. In both cases, revenues were supported by a labour force earning precarious salaries and living in very poor housing conditions. Land for example, was given in vast quantities to the Spanish settlers as a reward during the conquest; but “these lands were valuable only if cheap labour were available to work on them” (Ramos, 1996, p. 146). Even though the property was passed from generation to generation through inheritance, the concentration of wealth was maintained. By 1850 only 850 landowners received two-thirds of all the income from the agricultural production of the central valley (Bethell, 2003). At the middle of the 20th century, in Latin America as well as in Chile, land ownership continued to remain highly skewed. In fact, at that time in Latin America, only 1.5 percent of the farms accounted for 65 percent of all the agricultural lands (Ramos, 1996), while in Chile 0.7 percent of property owners controlled 67 percent of the arable land; 83 percent of farmers owned 11 percent of land (Lagos, 1961).

In terms of mining, the situation was similar. The nitrate industry represented 59 percent of total Chilean exports by 1925, and was almost exclusively owned by the British. Revenue was generated for the country through taxation but although it was a labour intensive industry, its low level of technology and labour skills implied therefore low wages and a precarious standard of living for the workers.

Regarding human capital skills, despite the growth experienced by public education in Chile during the 19th century, in 1875 nearly 77 percent of the population was illiterate and only 17

percent of the school age population was undergoing some form of primary education (Bethell, 2003). By the middle of the 20th century, schooling of the labour force had improved with individuals experiencing on average 4.7 years of schooling. This was comparatively good in international terms. However income distribution still remained highly skewed, given that such averages disguise hidden educational inequalities (Beyer, 1997).

Given the background described above it is possible to infer a highly skewed income distribution by the 1960's. Estimates made by Dante Contreras (1999) show that despite some variation, during that decade the Gini coefficient oscillated between 0.5 and 0.55. At the same time Luder (1988) estimated the 1960 Gini coefficient at 0.46. At this level, the poorest 10 percent of the population received 1.6 percent of the GDP, while the wealthiest 10 percent received 34.9 percent. In comparative terms, by that decade the worst coefficient in developed economies was not more than 0.36: U.S.A (0.357), Japan (0.352), Sweden (0.334) (Weeks, 2005).

Higher levels of education, and reforms to the ownership of land and mining experienced later, mainly during the rule of Allende's government, resulted in a better distribution with a Gini coefficient of less than 0.45 between 1971 and 1975. This increased again to nearly 0.55 in 1977 and hit the worst level of distribution in 1989 with a coefficient of 0.65 (Contreras, 1999).

A return to democracy was not only driven by a desire for justice in terms of human rights, but also by expectations regarding poverty and better outcomes in income distribution. The democratic government began a new stage in Chilean history with income distribution far more skewed than that of developed countries, and while the economies of the OECD varied between 0.417 in the case of Australia and 0.261 in the case of Austria, Chile's rate was 0.55.

Based on human capital theory it is reasonable to assume that education would be one of the most important tools of social mobility and income redistribution. In fact, access to education at all levels has grown constantly during the 20 year period 1990-2011. However the

distribution of earned income has not changed significantly over that time. Table 4.1 shows some indicators of income distribution for this period.

Table 4.1: Indicators of income distribution in Chile (1990-2011)

	Monetary Income									
	1990	1992	1994	1996	1998	2000	2003	2006	2009	2011
Gini	0.56	0.56	0.55	0.56	0.57	0.58	0.56	0.53	0.53	0.52
Index 10/10	27.1	25.2	27.7	28.7	28.4	29.5	27.3	23.9	25.9	22.6
Index 20/20	13	12.3	13.1	13.6	13.9	13.3	12.8	11.5	11.9	10.9
	Autonomous Income									
	1990	1992	1994	1996	1998	2000	2003	2006	2009	2011
Gini	0.57	0.56	0.57	0.57	0.58	0.58	0.57	0.54	0.55	0.54
Index 10/10	30.5	28.1	30.9	33	34.7	34.2	34.4	31.3	46	35.6
Index 20/20	14	13.2	14	14.8	15.6	14.5	14.5	13.1	15.7	13.6

Source: Ministerio de Desarrollo Social (CASEN 2011)

Table 4.1 above includes three indicators of income distribution in Chile for the period 1990-2011, and includes monetary income and autonomous income. Monetary income includes all income produced by individuals and autonomous income includes benefits received from the government, subsidies, and other such sources of income (MIDEPLAN-CASEN, 2011). In general terms the distribution of income is more equal when social benefits are included. For example, the Gini coefficient is 0.54 in the case of autonomous income versus 0.52 for monetary income. Similarly, without considering social expenditure, the wealthiest quintile (index 20/20) earns 13.6 times more than the poorest quintile. This ratio is reduced with government intervention to 10.9.

Nevertheless, taking into account the effect of social expenditure on income distribution in Chile, it is possible to conclude that income inequality has persisted over time. The Gini coefficient remains similar to what it was in the 1960's. As shown in the previous Table 4.1. (in terms of monetary income), the wealthiest 10 percent of the population earn 22.6 times more than the poorest 10 percent, and there is a gap of 10.9 times between the first and fifth quintile of incomes.

On an international and regional spectrum, figures confirm the severity of income disparities in Chile. Although there are some differences in the rate, according to the OECD in 2006 Chile achieved a Gini coefficient of 0.503, identifying it as having the worst distribution of all OECD countries as illustrated in Figure 4.1 bellow.

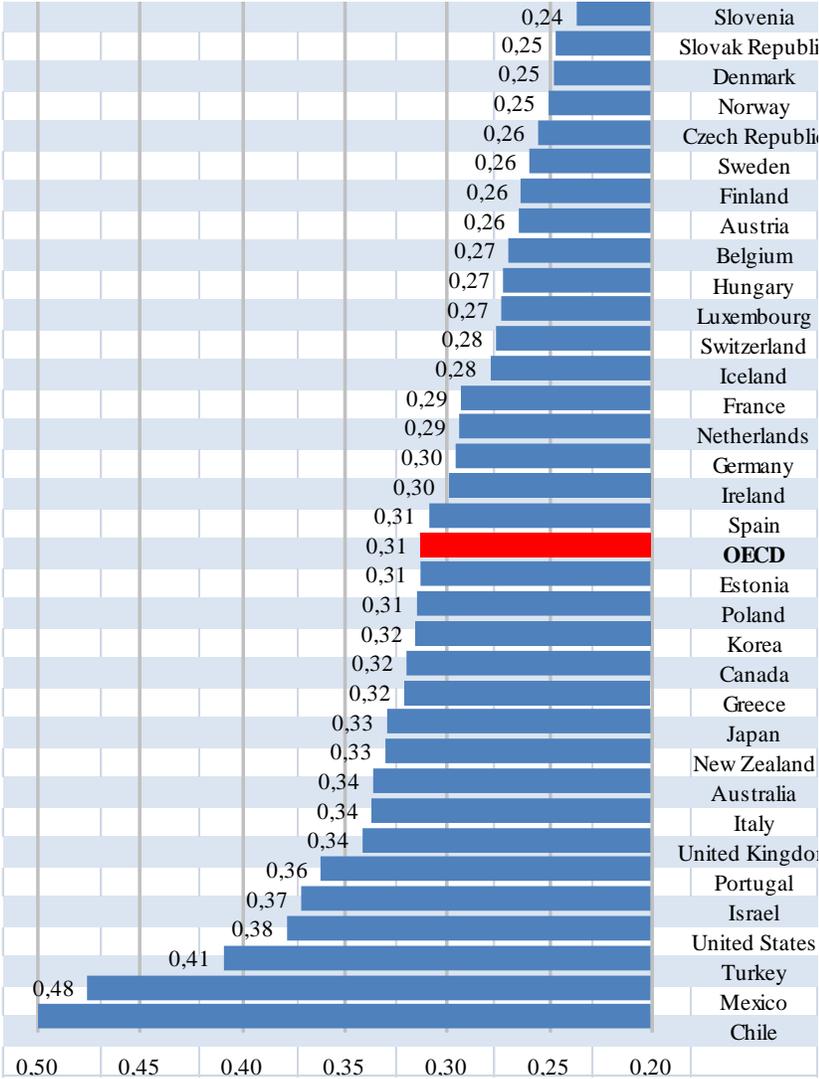


Figure 4.1: Gini coefficient late-2000s, OECD countries
 Source: (OECD, 2011b, p. 67)

The figures are clear, and represent an enormous challenge for a country that has shown constant economic growth in the last 30 years, achieving over US\$20,000 GDP per capita, the highest level in South America.

Nevertheless, both Contreras and Meller argue that inequality in Chile is mainly due to the difference in income generated by the fifth richest quintile or decile of the population. The rest is relatively homogeneous and behaves like many other countries. Contreras argues: "It is the last quintile (the wealthiest) which receives significantly higher than the rest of the population income, while income differentials between the first four quintiles are not of great importance" (Contreras, 1999, p. 318). In the same way Meller states: "the level of average income of the decile 10 (top decile) is 3.0 times the average income of decile 9 (second richest decile); this ratio is higher than that observed in other Latin American countries (Mexico, Brazil and Argentina) and almost twice the maximum observed in the United States" (Meller, 2000, p. 17). This is further supported by Solimano and Torche (2008) who report the concentration of income: "the average of the second decile is 2.5 times that of the first and the tenth is 2.9 times that of the ninth, while the differences between the other deciles does not exceed 60 percent " (Solimano & Torche, 2008, p. 9). Thus although inequalities are explained in large part by the huge difference between the poorest and wealthiest group, there are differences between this group and the average population. It is also interesting distribution within decile 10, in which there is a wide dispersion of income given that in the group of highly paid professionals seamlessly blend but owners of medium and large enterprises are also incorporated.

Moreover, the calculations are based primarily on surveys of socioeconomic characteristics in Chile, but do not include the profits of capital or the distribution of company profits to its owners. If these calculations were included, it would further increase disparities between the wealthiest groups and the rest of the country. A recent study that considers information provided by the Internal Tax Service and includes the profits of capital reveals the concentration of wealth in the richest sector of the population, that is major owners of capital (Lopez, Figueroa, & Gutiérrez, 2013). By including the profits of capital, they show that in Chile 1 percent of taxpayers accumulated 30 percent of the country's income, and even worse 0.01 percent, (ie about 1,200 people) earn 10 percent of all income generated in Chile. These figures are graphically illustrated when Chile is compared with other countries as shown in Table 4.2.

Table 4.2: Chile and other countries: Participation of 1 percent 0.1 percent 0.01 percent wealthiest in the country's total income including profits of the capital

Country	Participation in the total country income		
	1%	0,1%	0,01%
Chile	30.5	17.6	10.1
United States	21	10.5	5.1
Canada	14.7	5.8	2.0
Germany	12.1	5	2.3
Japan	10.9	3.5	1.3
Spain	10.4	3.9	1.5
Sweden	9.1	3.4	1.4
Average	15.8	7.2	3.5

Source: (Lopez et al., 2013, p. 26)

Foreign investment is not new in Chile. It declined during the government of Salvador Allende, returning to its former levels with the advent of the Pinochet government. The opening up of the economy, including the privatization of state enterprises and natural resource concessions such as water, prompted the inflow of foreign capital from more diverse countries than the British and Americans who invested heavily during the development of the saltpetre industry and the mining of copper. During the period of democratic government, with a strong emphasis on globalization, foreign capital began to move more quickly. In addition to participation in both mining and in the fruit export industry during the 1980s, and late 1990s foreign interests began to acquire property in diverse sectors such as electricity, health, and banking. In the early 21st century, the acquisition of state-owned companies, the association of transnational conglomerates with Chilean entrepreneurs, configured a scenario in which the leading Spanish investment foreign investment in Chile, followed by Canada and the United States in such strategic sectors such as energy, telecommunications and mining dominate the country's economic landscape. For example, Endesa owned by Spanish investors controls about 60 percent of Chile's electricity production and distribution (Fazio, 2000). While foreign investment declined slightly from what was achieved in 1999 early in the 21st century, it recovered strongly from 2006 with the strong influence of United States, Spain and Canada, in the energy, financial services and mining sectors largely in foreign

hands. Thus Villena commented that in 2011 Chile was: "one of the economies of South America with a greater presence of foreign capital" (Villena, 2013, p. 33).

4.2 Education and Inequality

A widely held assumption regarding education systems in Chile as elsewhere centres on the role of education in developing human capital and facilitating social mobility. Human development studies in education which concentrate on the relationship between nature and nurture focus predominantly on individuals and are therefore limited when it comes to social change and the social mobility of particular population groups, classes and quintiles.

One of the few empirical studies in Chile aimed at exploring outcomes in terms of enrolment and participation rates was conducted by Donoso and Cancino (2007). They examined Chilean education policies during the early 1990s, and in this work they describe the evolution of the social profile of new students, showing the growth of access to higher education experienced by lower socioeconomic groups.

The socioeconomic classification used by Donoso and Cancino in their research divides the population by quintiles (index 20/20 shown in Table 2.1). That is, the population is divided into five groups, corresponding to the first quintile (20 percent of the population with the lowest per capita income), and to the fifth quintile (20 percent of the population with highest income). According to the information provided by the Ministry of Social Development through the National Socioeconomic Survey (D. S. MIDEPLAN, 2011), and updated by inflation, to 2012, the classification of socioeconomic groups used by the Ministry of Education for loans and scholarship allocation is shown in Table 4.3.

Table 4.3: Classification by quintile of income (2012)

Quintile	From (CH\$)	To (CH\$)
1	0	70.966
2	70.967	118.854
3	118.855	182.793
4	182.794	333.909
5	333.909	--

Source: Ministry of Education (2012) Retrieved from www.bacasycreditos.cl

The calculus for the classification is the sum of all family income, divided by the number of members. According to the National Institute of Statistics the average wage in Chile in 2012 was CH\$390.365 (Segunda, 2012). Thus one family composed of five members where both father and mother contribute to the family income, would generate a family income of CH\$780.730, resulting in an income per person in that family of CH\$156.143. This would classify all members of the family as belonging to the third socioeconomic quintile.

Between 1990 and 2003 the participation of lower socioeconomic groups in education grew more than three times², but still far below the participation rates for the upper income group which had a 73.7 percent participation rate in 2003.

The low level of academic schooling provided in primary and secondary schools for lower quintile students does not allow these students to do well on the National University Selection Test, thereby obstructing the access of the lower groups to traditional higher education institutions. However those lower quintile students who do well in school and who receive public funding may have easier access to loans and scholarships. Similarly, the authors conclude that the educational model in Chile privileges full time students, which implies high levels of support, financial as well as family-based for those who manage to attend university on a full time basis. Another relevant aspect raised by the authors concerns the social segmentation experienced within the system, wherein it has been possible to observe that at least until 2003, the trend was to concentrate each type of students in different types of

² From 4.4% to 14.5% in Q1; from 7.8 to 21.3% in Q2; and from 12.4 to 32.8% in Q3.

institutions. For example Technical Training Centres predominantly serve the lower quintiles. Within the Professional Institutes, the situation is better equalized across quintiles, but with a concentration of intermediate quintiles; and, in the universities, the predominant quintiles are the highest, four and five, with the fifth quintile concentrated in private universities rather than in universities which are members of the CRUCH.

Thus, Donoso & Cancino (2007) maintain that it is imperative to produce a systematic antecedent for the design of new policies, which in their central matters (orientation in learning, offers of programs, and funding among others) include the new students in the system, namely, the students who come from the lower quintiles of the population. These students represent a main challenge for public policy, since they are typically the first generation in their families to gain higher education. These students do not know the cultural code of the “university world”, nor are they familiar, either culturally or socially, with the vast majority of institutions. The challenge not only applies to new public policy interventions but also transformation within the institutions as well, as they must retain and graduate the new kind of students that they are enrolling. Moreover, higher education institutions evade their responsibilities over the students’ learning outcomes by not publishing the dropout rate. They claim that learning outcomes are the responsibility of students and are therefore not included in a process in which the university’s role is to provide adequate resources to help students achieve their learning and to graduate.

The UNDP exposed the segmentation experienced by the system in 2005, arguing that upper income groups appear strongly linked with university studies (quintiles IV and V) and have less participation in technical education. Similarly, the important overall participation growth in higher education experienced by quintiles I and II, is explained mainly by their presence in technical institutes. Although, participation rates by those at lower socioeconomic levels have increased, they are still considered low. Research explains this by the low scores in the university selection test, as well as university fees that have increased significantly. The structure of prices or fees linked with those institutions with better prestige reinforces social segmentation, restricting access possibilities for those with lower levels of recourse (PNUD, 2005)

An alternative study by Espinoza y Gonzalez (2011) recognizes the growth in overall access experienced within the country, congruent with the trend observed throughout Latin America as well as internationally. This study reinforces the policies of equity implemented by governments after 1990 that have allowed the lowest quintile groups access to higher education. That said, it must be recognized that in Chile higher education policies have continued to give the greatest access to a privileged group of the population. The authors analysed the cohort of students enrolled in their primary education in 1995, who should have completed secondary schooling in 2005, and been enrolled in the university in 2006. With data available from the VCC universities, they show that 9.8 percent of students that started primary school in 1995 were enrolled in a traditional University. Estimating nearly 45,000 students from the same cohort (1995) enrolled in private universities or in other higher education institutions they concluded that 25 percent of students were enrolled at that time in some higher education institution. In terms of socioeconomic origin, by 2006, a student coming from the upper socioeconomic group had 4.6 times greater probability of being enrolled in a higher education institution. Even though that figure is high, it is closer than in 1990 when the ratio was nine times greater; that is, students coming from the fifth or highest quintile were nine times more likely to enter higher education than a student coming from the first or lowest quintile.

Among the most important determining factors that prevent the enrolment of students from lower socioeconomic groups is the National University Selection Test. This historic examination is strongly established as the method that regulates access to the traditional universities. The universities recognize the test as a selection method that gives access to students with enough academic merit and is a predictor of an adequate academic performance ignoring fundamental elements of academic performance, such as family or cultural capital (Sebastián Donoso & Schiefelbein, 2007).

From the point of view of the teaching process, measures of the dropout rate and completion time have been of gradually increasing interest in Chile. The dropout rate, defined as “early leaving before achieving graduation, considering time enough to rule out the possibility of

the student re-entering” (Himel, 2002, p. 95), is a subject that has primarily been analysed through measuring the phenomenon, with studies that predict or determine its causes being more limited. Figures from the Ministry of Education show that for the cohort of enrolment in 2009, the average of students’ retention within the first year was 69.6 percent (Universities 74.5 percent, Professional Institutes 63.4 percent and Technical Training Centres 65.7 percent) (SIES, 2013b). This suggests that during the first year only three of every ten students dropped out, with this pattern continuing during the following years. Therefore 48 percent of those who were enrolled achieved graduation (Cruchaga, 2012). Within this study, parents’ education, level of income, type of secondary school and NUST scores are variables linked with retention Educación (2012b). Students whose parents did not complete secondary education have a greater probability of dropping out of the system. The same situation exists for students coming from public secondary schools, specifically those institutions that belong to municipalities. Thus, variables exposed are those which mostly affect the lower socioeconomic groups, and it is therefore possible to conclude that these groups face higher probabilities of not completing their studies.

Chapter Three summarised a major component of the research programme in that it analysed development patterns in Chile over time in order to build a genealogy of Chilean society. This approach, focussed as it was on the dynamics of development, is better suited to address the composition of different social classes, and the way in which some classes and quintile groups have benefited from the country’s political economy over time. The development patterns approach provides a powerful framework for understanding and tracking social change and in that respect it establishes the context for undertaking a critical examination of higher education in addressing the issue of inequality.

As demonstrated in the historical overview Chile’s development during the 19th century was oriented mainly towards creating greater wealth for one small group with almost non-existent social policies for the majority of the population. Those social policies that did exist were oriented mainly towards the self-interests of the elite by enabling the proletarians to better serve the needs of that elite. Chile commenced the twentieth century with economic growth driven by the exploitation of natural resources, and characterised by high levels of wealth

concentration. The growth of the State through taxation, and the economic activity of the country created the conditions for the emergence or configuration of a middle class, made up of public employees, members of The Armed Forces, and traders, among others. Thus new political classes and social settings rather different from those that existed in the 19th century began to develop. However, the emergence of these new players and social classes resulted in political conflicts and radicalization or separation of the upper classes and the proletariat, creating a foundation for the establishment of the socialist government in 1973.

The military dictatorship deeply divided the country not only socially, but also economically, returning to the levels of inequality that pertained prior to the socialist government. Profound economic and social reforms allowed on one hand the emergence of an export economy and the foundation for economic growth that the country maintains today, and on the other hand resulted in economic and social deterioration of the living conditions of much of the population.

The onset of democracy in 1990 found a deeply divided country hopeful of not only justice in terms of human rights, but also in relation to the deep inequalities that the system generated. Economic growth continued, allowing the inclusion of Chile as a member of the OECD in 2010. Chile was then one of the most robust economies in Latin America but was still one of the most unequal in the world.

As has already been stated, human capital theory, which has been the basis of policy implementation by many countries, including Chile, positions education as an essential investment for the development of both individuals and society. Thus, from the analysis of the configuration of Chile today several questions about the role that the various components of society have played, including education arise. Among these questions, the one this thesis seeks to answer is:

- Do Chilean universities act as agents of social change or do they merely reinforce existing inequalities in society?

Answering the above requires, in addition to the foregoing analysis of national development generally, an analytical and critical understanding of the configuration of higher education in Chile in an international context. Such an analysis is the subject of Chapter Six. The various stages from emergence to what the system has become today are explored, including the main policies implemented to strengthen the development of higher education and achieve policy goals for the population. Chapter Seven then analyses the main outcomes of the system and its contribution to different socio-economic groups by evaluating the level of equity that has been established, both in access to higher education and educational achievement which would ultimately allow lower socio-economic groups to enter the workforce under better conditions. Complementing and deepening the national critical analysis that comprises Chapters three, five and six, Chapter seven sets out a case study using primary and secondary information to analyse the role of a particular university - the Universidad Católica del Maule.

CHAPTER FIVE:

METHODOLOGY AND METHODS

5.1 Introduction

There is little doubt that the growth of higher education in Chile has been enormous. Over the period 1990-2011 Chile achieved participation rates in higher education of 47 percent. Although the participation rates of people from upper socioeconomic quintiles is greater than those from lower socioeconomic groups, participation rates from the later groups have increased by more than four times during the same period. On the surface the data suggests that the higher education system in Chile is building a platform for vertical social mobility thereby reducing the social gaps that characterize Latin-American countries. However, when the data is analysed across the higher education system a number of contradictions become evident. In terms of public funding, for example, a significant gap emerges within the group of 25 institutions with a mission of public service: a greater proportion of funding is allocated to those universities who enrol students from the upper socioeconomic groups located mainly in the major metropolitan areas. There are also disproportionately high dropout rates by students from lower socioeconomic groups. These outcomes raise serious doubts that higher education in Chile acts as an agent or instrument of social change.

This thesis critically examines the role of the university as an agent of change in terms of enhancing social mobility and equity. The research question is:

Do Chilean Universities act as agent of social changes or they merely reinforce existing inequalities in society?

In order to address this question, the research has been divided into three major components:

1. First of all, it is considered essential to analyse the development context out of which education evolved. This means analysing the political economy of Chilean society

over time not as ‘snapshots of development’ but rather as a dynamic process of change over its economy, politics and social matters.

2. Second, the trend data for Chilean Universities over the past decade is reviewed in terms of enrolment, the teaching-learning process and outcomes.
3. The third component centres on one regional and medium-size university (UCM), to gauge the extent to which the university has been an agent of social change.

5.2 The context

It is considered essential to have an understanding of the economic, political, and social development processes within which the education system was established to critically analyse the role education plays in social transformation. The approach being adopted here utilises the *development patterns framework* as advanced by Shirley (2011) that places emphasis on an integrated approach to our understanding of different social formations by linking different cultural traditions and practices with political, economic and social realities. It means building a comprehensive genealogy of historical events by tracking economic and social trends, as well as the ways in which these trends can be understood as patterns or phases of development that are simultaneously historical, empirical and critical (Shirley, 2011b). Additional to describing the social, political and economic evolution of the country, this chapter considers the historical development of higher education and different models adopted over time, in Chile as well as in other countries. The description of the national context as well as the context for higher education, in Chile and internationally, is based on available studies and literature, with the intention of drawing on a diverse multiplicity of authors. The review is laid out in chapters three, four and six.

5.3 Chilean higher education performance

Using an approximation of Bowen’s approach (1997), related to the process of higher education, the national analysis has been divided into three main components of a process - that is input-process-outcomes. In terms of input, the starting point has been to analyze the numbers of enrolments in the tertiary education system in Chile. In terms of process, an

analysis has been made of participation rates and their evolution, academic performance, resources and funding of the system and finally, quality assessment. Regarding the output, two topics have been reviewed, firstly an overview of the professional employment market and secondly some social benefits that the available data have made it possible to review.

The national analysis and international comparisons have been developed using secondary information, which is explained in more detail in each chapter. Main studies, data bases and source of information used include the following:

5.3.1. National Socioeconomic Survey (CASEN)

Survey developed through the whole country. In its most current version (2011) at the time of data collection for this study, it was applied to over 302 provinces of the country. It has been applied since 1985 with a periodicity of two years, except in 1989 which was moved to 1990. The data given by this survey are used by different governmental and nongovernmental organizations as a diagnostic tool and for public policy analysis and design. In the context of this thesis, the data base is used in different chapters. The first stage was an overview of the different variables included in each survey from 1990 to 2011. Secondly were selected those variables aligned with the research question. In 1990 the survey included eighteen variables related to the research question. In the 2006 and 2009 surveys, the number of relevant variables increased to thirty-five and thirty six respectively. For example, from 1990 the survey includes the variable of school attendance. The type of higher education institution where students are enrolled is considered in all surveys except the 1994 edition. However, the classification among CHUCH Universities, Private Universities, Professional Institutes and Technical Training Centres was incorporated in the 2003 survey, whereas before that the classification of institution considered only subsidized and non-subsidized higher education institutions.

Thus, after the review, classification and comparison of variables it was possible to determine the available information. Using SSPS, a data base was built, allowing the

relationships between variables, trends and other analyses to be developed as set out in the respective chapters.

5.3.2. *National Education Council* (Consejo Nacional de Educación in Spanish, CNE)

The Higher Education Council is an organization created by statute. Included in its responsibilities is evaluating the foundation of new universities and also an assessment of the quality of the degrees and programs of these higher education institutions (including universities, professional institutes and technical training centers). From 1997, there has existed a database called “Indices”, which includes information about each institution. The data available include: Institutions, programs, Full Time Equivalent Academic Staff, number of Students, number of branches of each institution, vacancies for each institution, and the qualifications of academic staff, among others. As in the case of CASEN survey, explained in the previous subsection some variables have been included throughout the whole time period, and electronic data are available from 2005. Before that date, there are hard copies for each year including institutions without information. This database and repository was reviewed and analyzed to determine data availability, and its relevance to the research. Based on these factors, data was extracted to compile a new data base, allowing analysis, charts and tables to be included in the respective chapters.

5.3.3. *National Academic Register (DEMRE)*

The National Academic Register is a unit that belongs to the University of Chile which is responsible for the coordination of the National University Selection Test. Data is only available in hard copy, and includes information such as the average score of applicants for each university, the geographical origin of the students, the type of school they attended (public, private with subsidy and completely private funded), scores obtained, number of applications by university, etcetera. This data base contains information from 1987 onwards, although this department has been responsible for coordinating the National University Selection Test since 1967.

5.3.4. *Futuro Laboral*

This is an information system founded in 2003, whose purpose is to provide information regarding the employment status of graduates. It includes programs level 5A and 5B, according to the UNESCO classification. Supplied by all types of higher education institutions, the data includes more than 414,000 graduates from the cohorts of enrolment 2000, 2001, 2006, 2007 and 2008. This data base is divided into two groups of information, including 181 and 44 disciplines by group respectively. All the graduates considered come from 9,275 disciplines supplied by different higher education institutions. The first group of 181 degrees each includes at least 20 graduates. From this group were selected all those degrees reported to the system by at least three institutions, and that contain more than 25 graduates, forming with this criteria, the second group of 44 disciplines. For example, if medicine is reported by four universities, and each of those universities included 25 or more names of students with the data required, the discipline of medicine is included in the group of 44 disciplines.

The data base possesses information such as: employment at first and second year for different cohorts; salary in the first, second, third up to the eighth year after graduation (for cohort 2000 and 2001); completion time, dropout, among others. Data from the two groups of disciplines do not necessarily match. As a consequence data was used from the two sets for specific outcomes. For example, in the analysis of academic performance, and specifically retention rate for the first and second year, data from the group of 44 disciplines is not comprehensive enough for purposes of this analysis, as it does not include qualifications from technical training centers or professional institutes. In this case information was provided by the group of 181 disciplines in order to analyse retention.

5.3.5. *Chilean Higher Education Information System (SIES)*

This system was established by the Ministry of Education in 2010 to provide reliable information about the higher education system. It includes data from all higher education institutions such as: enrolment, graduation, retention rates, academic performance, funding, among others. In addition, the SIES system provides information for new students as well as their families. It seeks to establish a data base for research and analysis in the design of higher education policy and strategies at institutional and national levels. In some cases, it includes data from other information systems or data bases, such as the Higher Education Council and sometimes there is incompatibility between them. In these cases, the research explains which source of information has been used. Although this last point reveals a weakness within the system, the trend observed is a strengthening of the information system, driven by new regulations obliging higher education institutions to provide institutional information, mainly to the Chilean Higher Education Information System.

5.3.6. *Ingesa*

This organization was created in 2005 to manage the higher education loan system in Chile. Its public data base contains information regarding applicants and loans allocation from 2006 to 2011. From this data base it is possible to get data such as: number of applicants by socioeconomic quintile; applicants by region; applicants according to their secondary academic performance; applicants by type of secondary schools; allocations by quintile, type of higher education institution and region, among other variables. This data base has been used mainly in the analysis of the funding system, included in Chapter Eight.

Data used for international comparison comes mainly from the Unesco group of organizations, specifically the World Education Indicators program, and from the

Organization for Economic Co-operation and development (OECD), of which Chile has been a member since January 2010.

5.4. Case Study

The overall analysis of higher education in Chile as outlined above will be applied to a case study aimed at analysing one Chilean university in terms of its role as an agent of social change. The institution selected is Universidad Católica del Maule. It is located in the Maule region, and identifies its mission to be regionally-focused. The majority of students come from lower socioeconomic groups, with relatively low university entrance scores. The university also attracts a comparative low level of national funding.

Methodologically, Yin,(2009), presents at least four applications for a case study model:

- To explain the presumed causal links in real-life interventions
- To describe an intervention and the real-life context in which it occurred
- To illustrate certain topics within an evaluation
- To explore those situations in which the intervention being evaluated has no clear set of outcomes.

Within this methodology it is possible to observe four types of design: single, multiple, holistic and embedded case designs. Single cases may be used to confirm or challenge a theory, to represent a unique or extreme case or when it is representative of a typical case (Yin, 1994). Single-case studies are also ideal for revelatory cases where an observer may have access to a phenomenon that was previously inaccessible. For these studies can be holistic or embedded, the latter occurring when the same case study involves more than one unit of analysis.

As in all research, consideration must be given to construct validity, internal validity, external validity, and reliability. Yin (1994) suggests using multiple sources of evidence as a way to ensure the construction of validity, for example, survey instruments, interviews, measured data and documents. He also asserts that external validity could be achieved from

understanding relevant theoretical relationships and from these generalizations could be made.

The unit of analysis selected as a case study is the Universidad Católica del Maule. The criteria used for selecting this university are as follows:

- The institution is located in a region, and particularly one of the poorest regions in Chile with low levels of human capital, income and socioeconomic development.
- The institution was established within the period of democratic governments.
- It is an institution with more than 70 percent of the students coming from the Maule Region and from the lower socioeconomic quintiles.
- It is an institution with low levels of public funding.
- It is an institution in which the researcher has access to current and historic data.

It should be noted that although there was data available from this institution, it was rarely available in an accessible electronic form. The compilation of data for the case study involved considerable effort in location, retrieval and digitization of manually-recorded data from a range of filing systems and archival storage facilities. This database itself now constitutes a valuable contribution to the field of research that is the topic of this thesis.

Since 2008, classification of students by quintile of income has become more reliable. Therefore, consistent with the research question at issue here, and with the need to determine trends, three data bases have been constructed. First, data before 2008, second 2008 to 2013, and a data base of graduates.

5.4.1 Student data base, before 2008

Although access to the student database was possible not all the information was available, mainly before 2000, and access was both manual and electronic. It was necessary therefore, to structure a data base that would make it possible to manipulate and correlate the information for research purposes.

Due to the quantity of information about enrolment, academic process and graduation, and the complexity of accessing it, the work was developed using sampling methods. Three samples have been selected of students enrolled since 1991. First, selection of the enrolment cohort; second, a random sampling method was used to reduce the number of students in each cohort; and third corresponds to students who graduated, where the convenience sampling method has been employed. Due to the large number of graduates comprising the third sample, and the time and cost involved in conducting interviews with them, only a subset of the sample were contacted and interviewed.

At the first level, enrolment cohorts 1998, 2001 and 2003 have been selected. The rationale for this is that up to 2009, the first cohort of graduates (from the 1998 enrolment cohort), would have five years or more work experience; and the 2001 enrolment, at this time, would have at least two years of work experience, and the third would have at least one year of work experience. In 1998, there were enrolled in 11 5-A level programs (Unesco classification), 778 students, 822 students in 2001 distributed across 12 disciplines; and 870 students enrolled in 2003 distributed across 13 disciplines. Table 5.1 below shows the number of students selected in each program.

After determining the number of students that would be used for each cohort, the names of students were randomly selected from each discipline. Then, for every cohort an academic data base was created which included variables such as: University Selection Test Score at enrolment, approval (acceptance) rates, dropout rates, graduation, and completion time rates. In addition, a socioeconomic profile of the selected sample was created. This data base was created matching the ID number of every student with the socioeconomic evaluation data base. This data base, included on average 75 percent of the initial sample, because socioeconomic data is available only for those students who applied for economic support and 75 percent is on average the number of students that require such benefits.

Table 5.1: Sample of student from cohort of enrolment: 1998, 2001 and 2003

Career	1998		2001		2003		Total	
	%	n	%	n	%	n	%	n
Religion and Filisophy	3.6%	6	4.7%	8	5.7%	10	4.7%	24
Medicine	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Physiotherapy	9.0%	15	8.4%	14	7.9%	13	8.4%	43
Nursery	8.4%	14	6.7%	11	8.0%	14	7.7%	39
Psicology	0.0%	0	0.0%	0	8.3%	14	2.8%	14
Fisical Education	9.5%	16	10.5%	18	9.2%	16	9.7%	49
Especial Education	8.5%	14	8.6%	15	6.6%	11	7.9%	40
English Pedagogy	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Basic Pedagogy Talca	0.0%	0	7.1%	12	6.3%	11	4.5%	23
<u>Basic Pedagogy Curico</u>	<u>0.0%</u>	<u>0</u>	<u>0.0%</u>	<u>0</u>	<u>0.0%</u>	<u>0</u>	<u>0.0%</u>	<u>0</u>
Mathematics	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Sciences	0.0%	0	0.0%	0	0.0%	0	0.0%	0
<u>Preschool Education</u>	<u>7.2%</u>	<u>12</u>	<u>6.3%</u>	<u>11</u>	<u>6.0%</u>	<u>10</u>	<u>6.5%</u>	<u>33</u>
Social Work	7.6%	13	6.9%	12	6.2%	11	6.9%	35
Forestry	10.9%	18	10.0%	17	7.4%	13	9.4%	47
Agronomy	10.4%	17	8.9%	15	8.9%	15	9.4%	47
Construction Engienering	12.5%	21	10.8%	18	9.7%	16	11.0%	55
Informatic Engienering	12.5%	21	11.1%	19	9.9%	17	11.1%	56
TOTAL	100%	166	100%	168	100%	170	100%	504

Source: Compiled by the Author from UCM academic register.

5.4.2 Student data base, 2005-2012

Data collection in Chile continues to grow and develop. For this time period data is more accessible, especially the classification by quintile. This data base comprises all students enrolled from 2005 to 2012. However, the time period has not allowed calculation of indicators related to graduation, notably completion time. The data was classified into two groups: Group A consists of a sample of student cohorts enrolled in 1998, 2001 and 2003; and Group B consists of all students admitted in the period 2005-2011. These two groupings allowed for better analysis of trends and changes as outlined in Chapter Eight.

5.4.3 Graduates

This consists of three types of data. This first data set consists of 23 surveys of graduates using a social mobility questionnaire developed by Florencia Torche (Torche & Wornald, 2004). The number of graduates contacted was constrained by limitations of the institutional

data base regarding the current address of graduates, and the cost involved in administering the survey.

The second data set was developed from Alumni UCM, a research project commissioned by Universidad Catolica del Maule in 2011 aimed at improving the relationship with, and information about, UCM graduates. A questionnaire was developed and contact made with 1,000 professionals that studied at UCM and graduated between 1995 and 2008. The information obtained has been used to complement the graduate surveys. In this context, as part of the activities of the Planning and Development Office at UCM, this author in 2012 coordinated the implementation of a project funded by the Ministry of Education which aimed to implement a monitoring model tracking university graduates. The report produced in 2014 provided useful information on the first and fourth year after graduation for students who graduated in 2012 and 2009 respectively. While the study pursued wider objectives, some questions concerning the social trajectory of graduates were included as a way to complement and obtain more information for the purposes of this thesis. This consisted of 229 cases of students who graduated in 2012, and 129 students who graduated in 2009.

The third data set comes from the Ministry of Education through Futuro Laboral or SIES, which provides specific information regarding graduates of the UCM.

CHAPTER SIX:

THE DEVELOPMENT OF HIGHER EDUCATION SYSTEMS IN CHILE: AN INTERNATIONAL OVERVIEW OF MODELS AND THEIR IMPLICATONS FOR THE CHILEAN CONTEXT

Modern societies have reached different stages of development, with different social, cultural, political and economic structures. Various models and strategies have been formulated and implemented, with education for centuries being one of the main mechanisms, having various purposes throughout time, but always being recognised as a pillar of social construction.

As described in chapter three, Chile has developed towards its current social structure over a period of 200 years since independence. From a country that featured highly concentrated power-bases in economic, political and social terms during the 19th century, Chile began the 20th century with the gestation of new groups and political models. This pattern of development has continued through the years, for better or worse, building the contemporary Chile of the 21st century. Overall, the Chilean population is living in better conditions than 20 years ago, but the country nevertheless continues to be dominated by a very small elite. There is a high level of foreign ownership of natural resources and basic services such as electricity, with a significant number of vulnerable households at the lower socio-economic levels failing to benefit from the development that the country has achieved.

Understanding that education is an instrument of development and change for both individuals and society, this chapter examines the evolution of education in Chile and in the world. The origins, purposes, and various models of higher education are set out, in order to analyse in further detail its historical development and implementation in Chile. Finally, the

key public higher education policies pertaining in Chile, specifically funding, student access and quality assurance are analysed.

6.1. Foundation of Higher Education Systems

The first organizations to be called Universities were created in Europe during the twelfth century in Parma, Bologna, Paris and Oxford. These guilds and organizations of priests and intellectuals had as their purpose the training of professionals for what was perceived at the time to be an increasingly urban society. The curriculum concentrated on areas such as theology, law, arts, medicine and the physical sciences. The success of 'the university' was reflected in its growth. Sixteen universities were located in Italy, France, Spain and England by 1300. Another fourteen were established in Austria, Poland and Bohemia by 1400 and more than twenty-eight including universities in Scotland, Hungary and Scandinavia, by 1500. These organizations needed authorization from some superior authority, ecclesiastic or secular, normally from the pope, bishop, emperor and king or, at least the city commune (Harold, 1984).

In Latin America the University arrived with the Spanish conquistadors, who founded the first of them in Santo Domingo City in 1538, followed by the Real and Pontificia Universidad San Marcos in Lima and the Pontificia Universidad in Mexico (J. Brunner, 1990a). In the same way that Universities were established in Europe under the auspices of royalty or ecclesiastic power, Universities in Latin America were founded by the Church and/or the Monarchy.

The 'university' has been subject to numerous reforms over time and in different parts of the world. In England for example, the university began its transformation in the sixteenth century with the separation of clerical power. Harold Perkin describes how "there was some talk of abolishing Oxford and Cambridge --- as quasi monastic establishments, but the King intervened personally to save them" (Harold Perkin, 1984, p.28). Despite these reforms advancing the secular character of the universities they were not transformed as institutions of intellectual thought benefitting society as a whole. Rather the university reinforced its role

as an institution for educating the 'gentry' and meeting the educational needs of the lay ruling elite.

In 1836 there was another important transformation in the British higher education system with the foundation of the University of London. The proposal was aimed at giving professional degrees to young people who obtained their instruction in different London colleges or in the provinces. Although an attempt was made to show how the modern university could be organized in a different way with relevance for different social groups, Brunner describes (1990b), how it reinforced the stratification of the system. It also established precedents for an important group of national higher education systems in Africa, Asia and Latin America. According to Gustavo Rojas (2005), the growth of higher education in the UK system occurred in the wake of the second World War. He identifies three phases; first there was a gradual expansion from 1945 to 1963, with the Robbins report in 1963 introducing the second stage which Rojas calls "the conversion of the gradual expansion in state policy" (Rojas, 2005, p. 105) and the transformation of the British system from an elite structure to a broader system in terms of access to higher education. The third stage began in 1979 during Margaret Thatcher's government and was characterized by the diminution of public funding and the implementation of new mechanisms of regulation and quality assurance. Although almost all higher education in the United Kingdom was predominantly dependent on public funding (including universities, colleges and polytechnics), state funding under the Thatcher government began to be reduced along with a concomitant increase in fees and the introduction of student loans (Educacion, 1998).

During this period the growth in participation rates was mainly through technical institutions managed by local governments. These institutions subsequently achieved university status when further reforms were introduced in 1989. Approximately 40 technical institutions gained university status in the UK resulting in more than 100 universities with over 2,000,000 students by the end of the 20th century. Despite the growth of student numbers experienced by the system, public expenditure decreased during the first 10 years of the Thatcher government's reforms and this was reflected in OECD rankings. Up until 2003 there was little evidence that the higher education system was providing more opportunities in terms of

access for people from lower socioeconomic groups (Greenaway & Haynes, 2003; Harold, 1984).

Germany also provides an example of a system that has been very influential in the modernization of higher education systems in the world. In Germany, as in many other countries, the main transformation and progress toward modernity occurred during the 19th century, as a new vision of the university emerged in contrast to its classical foundations. Harold Perking (1984) describes the evolution of the German system and how it influenced universities around the world, especially in advanced systems such as Britain and America. The main transformation in Germany was the introduction of research as a university activity. After Napoleon's defeat of Prussia in 1806, and with his suppression of the university at Halle, appeals were made to the King to restore University education. He agreed with the appeal. "The state must replace by intellectual powers what it has lost in material ones" (Harold Perkin, 1984, p.33) and thus began the reform of Prussian education and the foundation of the University of Berlin. The minister appointed to facilitate the process was Wilhelm von Humboldt, who saw the university as the moral soul of society. His ideal was "to ensure the purest and highest form of knowledge, absolute freedom of teaching and learning" (Harold Perkin, 1984, p.34). Despite these aspirations the generation of knowledge, science or research was not applied to industry. As Harold Perkin maintains, "it was not a thing but a process, an approach to learning, an attitude of mind, a skill and capacity to think rather than a specialized form of knowledge" (Harold Perkin, 1984, p.34). The generation of knowledge or science was more related to metaphysics than to the empirical sciences we know today. Engineering for example was excluded from the university until the end of the 19th century and it was taught in technical colleges or trade schools founded after 1820, with the aim of training engineers and technicians for the German economy. The flexibility, the internal logic that typified the development of the German university become "the embodiment" of specialized research and the model to follow for other higher education systems such as Japan and the United States. There was an enormous expansion in the German higher education system during the nineteenth century with the creation of new disciplines, new universities and technical colleges as well as the growth of students that rose from near 13,000 in 1850 to almost 65,000 in 1914. In the initial phase of development

students were predominantly drawn from the highest social class but these intakes were gradually expanded drawing young students from the new lower middle classes, and from middle ranking government officials, who were mostly pursuing careers such as engineering, science, medicine among other vocational subjects. These vocational subjects were strongly supported by the government both in terms of financial support as well as through the contracting of professors and through the provision of employment opportunities for new graduates (Harold, 1984). According to Gellert (1993) the growth experienced by the German system mainly after the 70s, was based mostly on two main political considerations. The first consideration was that human capital theory underpinned the conviction of employers and policy makers with regard to the manpower skills required if the country wanted to compete in the world market. The second consideration was the desire to provide an opportunity for all young people to develop their talents, independent of their socioeconomic status, and therefore “post-compulsory education became regarded as a general civic right” (Gellert, 1993, p. 16).

In Latin America, the University arrived with the Spanish conquistadors during the 16th century, with variations in different countries according to role of the monarchy and the Catholic Church. The initial transformations occurred following independence. In Mexico for example, the Higher Education system experienced a process that was not stabilized until the 20th century: The Universidad de Mexico was closed in 1835, opened and closed many times during the following century, becoming the Universidad Nacional de Mexico by 1910.

A similar situation occurred with the Universidad of Guadalajara or with the Universidad Colonial de Yucatan founded in 1767, reopened in 1824 but closed again in less than ten years (J. Brunner, 1990a; Tünnermann, 2000). In the post colonization period in many Latin-American countries the university was slow to become established. This was evident in Chile with significant changes occurring from the colonial Spanish institution in 1839 to the foundation of the Universidad de Chile. Brunner equates this time as the foundation phase of a modern tertiary institution in Chile. (J. Brunner, 1990a).

6.2. Higher Education Models

Today there are a range of different models as well as strategies adopted by countries in advancing higher education with two major distinctions being drawn in terms of property (public or private), and funding, (public, private or both). Barton Clark (1983) provides one framework by differentiating between higher education systems both within and between institutions, and in terms of both vertical and horizontal dimensions. Within one institution for example distinctions can be made vertically in terms of hierarchies (faculty, department) and horizontally in the definition of disciplines. Between institutions, that is in a national system of higher education, the vertical organization is assigned by the types of institutions, (College or University) or the level of degrees and qualifications. The latter classification according to Clark (1983) could have major consequences for access, especially in countries with one level of institution such as universities. In this unitary system access is more restricted, than systems that possess technical institutions as well as universities. Horizontally, national systems tend to adopt four alternative forms of differentiation. Clark distinguishes between “Single public system, single sector; Single public system, several sectors; Multiple public system, multiple sectors; Private and public system, multiple sectors (Clark, 1983, p. 53).

Years before, at the beginning of the 1970’s, Martin Trow (1973), proposed the idea that as the higher education system grows, it shows different structural and behavioural problems such as curriculum, enrolment, funding policies among others are different in the transition from an elitist to a mass system. He stated that when beyond 50 percent of the age group is attending higher education “*the system must again create new forms of higher education as it begins to move rapidly toward universal access*” (Trow, 1973, p. 7). He proposed two thresholds of growth. The first is achieved when 15 percent of the cohort group is enrolled in higher education; from this point forward, the system starts to become a mass system. The second stage is achieved when 50 percent of the cohort group is enrolled in higher education, and the system starts to become widespread.

By utilising Trow’s approach and introducing other variables such as the number of institutions, participation levels and the income of the country, Brunner (J. J. Brunner et al.,

2005) describes the strategies adopted by different countries in dealing with the growth of higher education. Table 6.1 outlines the participation rates in Higher Education and the strategies of growth adopted based on 2003 figures:

Table 6.1: Participation rates in Higher Education and growth strategy by country

		Growth Strategy			
		Public	Private	Both	
Stage of Growth (Participation rates in HE)	75%	Finland		Korea	
	51% - 74%	Australia	N. Zealand		
		Canada	Norway		
		Denmark	Poland		
		Finland	Sweden		
		Spain	Russia		
		USA			
	34%-50%	Germany	Uruguay	Japan	Portugal
		Argentina		Thailand	
		Hungary		Chile	
		Ireland			
		Italy			
	14%-33%	Slovakia		Brazil	Philippines
		Jamaica	-	-	Malaysia
		Mexico			Peru
		Czech Republic			

Source: (J. J. Brunner et al., 2005, p. 20)

Although table 6.1 was developed with data generated in 2003, the categorizations remain more or less constant. According to the OECD, in 2012 Korea had more than a 75 percent participation rate in higher education (74 percent only in Type A programs) and 76 percent of students attending private institutions. In the case of Japan, 75 percent of the student population attend private institutions (OECD, 2012a) with a high proportion of the students being enrolled in tertiary Type A programs. [Type A programs are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture.]

Thus, as can be observed, twenty-one countries on the list have opted for higher education through public institutions, five through private institutions and four of them share between

private and public. From the countries classified, 15 have a GPD per capita higher than US\$25,000, seven more than US\$15,000 and four less than US\$10,000. It seems evident that countries with high levels of income achieve high levels of participation rates in Higher Education through public institutions whereas countries with lower incomes place greater emphasis on private institutions based on the assumption that higher education returns high levels of private benefits.

Notwithstanding the above, even when public funding and state resources are provided, many students are required to support their own education through tuition fees. The OECD describes four approaches adopted by countries to fund higher education, as follows: Countries with no or low tuition fees but generous student support systems; Countries with high levels of tuition fees and well-developed student-support systems; Countries with high levels of tuition fees but less-developed student support systems; Countries with low levels of tuition fees and less-developed student-support systems (OECD, 2012a, p. 277). Based on the available data, Table 6.2 below classifies countries according to the level of public support and the level of tuition fees.

Table 6.2 OECD approaches to funding higher education

Level of Public support	High	Finland, Ireland, Sweden, Norway, Denmark	USA, UK, Australia, New Zealand, Netherlands
	Low	Switzerland, Spain, Belgium, Mexico, Austria	Korea, Japan, Chile (1)
		Low	High
		Level of tuition fees	

Source: Table constructed by the Author using OECD data (2012).

As evidenced from the data, Korea, Japan and Chile are among those countries that have adopted a private growth model of higher education, with further distinctions evident between countries that have substantially higher levels of income and a more effective level of distribution. In this respect, Chile has experienced a significant growth in higher education as well as participation rates by adopting a market model, introducing private providers, and uncontrolled tuition fees among other things.

6.3. Education in Chile

In 1747, during the period of colonization, the Universidad de San Felipe became the first university to be founded in Chile. It was restructured after Chilean independence becoming in 1843 the University of Chile. During the restructuring process there was wide debate centred on the public role of the university, with a secular academic group arguing that the neutrality of the state in religious matters caused conflict with the Catholic Church. This subsequently led to the Bishop of Santiago founding the Universidad Católica de Chile in 1888. Another two Catholic universities were established in the provinces, namely the Universidad Católica de Valparaíso in 1928 and the Universidad Católica del Norte in 1956. In 1919 a private community founded the first regional university, the Universidad de Concepción, and based on this concept in 1954, the Universidad Austral de Chile was established in Valdivia. In 1931, also with a private founder, the Universidad Técnica Federico Santa María was established in a fifth region of the country. Motivated by national necessity and promoted by engineers and technicians in 1952 the government founded the Universidad Técnica del Estado. Thus, there were eight universities in existence until the 1981 educational reforms, two public and six private non-profit organisations (Gonzalez & Aedo, 2004).

6.3.1 *The Nineteenth Century*

The period of independence was characterized by a low level of educational development. For example by 1813, with a population of 50,000 inhabitants in Santiago, there were only seven primary schools catering for 664 students (Aedo-Richmont, 2000, p. 32). Nevertheless, the constitution of 1822 established the role of the state in education. The government recognized the church and private organizations as educational providers, establishing the platforms for Chilean education encompassing primary, secondary and higher education.

Chile was one of the first Latin-American countries to establish public education for lower socioeconomic groups. Previously, as in other countries in the region, education was private and delivered primarily through religious congregations. The structure of education at the time was based on a workforce with relatively low skills and catholic teaching did not require reading and knowledge of the bible as in the case of evangelical religions. Loreto Egaña (2000) maintains that two factors influenced the increasing engagement of the state in

education: first the capitalist economy required a labour force with better skills as well as the discipline of work; and second, the education of productive persons that could negotiate their labour force requirements as well as the necessity of educating citizens for a modern state.

Even though the constitution of 1833 emphasized the “*teaching state*” controlling public and private education, the design of the Chilean educational system recognized different social classes and diverse educational curricula. Andres Bello, first Vice-chancellor of Universidad de Chile, and one of the most influential on the Chilean and Latin American educational systems, believed that education should be defined according to the different needs and aspirations of different social classes and this included an appropriate curriculum for each particular group (Austin, 1998). In fact, Andrés Bello expressed the idea that “the level of knowledge acquired in these schools erected for the poorer classes must be no more than required to meet their needs.... , to do otherwise would not only be useless, but even harmful and would alienate youth too much from productive labours...” (Fernandez & Sanhueza, 2013, p. 2). It was an approach that assumed children of the oligarchy were destined to lead and govern, thereby requiring high levels of culture and knowledge, whereas labouring groups needed a minimum level of education, and this could be provided by the primary school. Secondary education was essentially provided for the elite and a basic requirement for higher education.

Founded in 1842, during the conservative republic period (Cristi & Ruiz-Tagle, 2008), or the authoritarian republic, the Universidad de Chile was responsible for monitoring primary and secondary education provided by the state as well as private organizations. In the second half of the nineteenth century strong liberal ideas gained in popularity both within the ruling elite and the emergent middle class of the country. Liberals sought a reduction of presidential power, greater freedom of the press, and increasing attributions from the parliament. Such ideas and approaches influenced the country’s educational destiny, and a diminution in the role of the Catholic Church. The interpretation and understanding of concepts such as the “teaching state” and “freedom of education” varied between conservatives (including the Catholic Church) and liberals. The conservatives endorsed state-provided education largely

for the upper class with a minimum form of instruction for the labourers and the working class but at the same time reinforcing education through private institutions and almost exclusively the Catholic Church. In philosophical terms education was perceived as a right for the population as a whole rather than a privilege for a small group. On the other hand, liberal ideas saw it as the responsibility of the state to lead and provide education for all the population. The providers could be state or private institutions and not just exclusively the Catholic Church. The liberal republic carried on developing public education at this time with constant rivalries between conservatives and liberals. The ideas promoted by educational secularization led to the Bishop of Santiago founding the Pontificia Universidad Católica de Chile in 1888, the first private university in Chile.

Nevertheless, the expansion of public education, mostly primary education, was slow. By 1875 the majority of the population was illiterate, and according to Bethel (2003), in the country 77 percent were illiterate and only 17 percent of the school-age population was undergoing some form of primary education. It was still almost exclusively reserved for members of the upper class.

The last quarter of the nineteenth century, evidenced a greater growth in education including access for the working class. For example, with the growth of the economy, the collection of taxes and the desire of the liberal government to enhance education, the parliament provided resources to the president for investment in education, and in 1883 1,200,000 Chilean Pesos (approximately US\$61 million in today's terms) was invested in new schools, teacher training and books (Egaña, 2000, p.59).

The growth of education carried on during the twentieth century. Whereas in 1900 public school registrations recorded 157,000 students in primary and 12,600 in secondary schools; by 1920 these figures increased to 346,000 and 49,000 respectively (Meller, 1998). In 1907 the literacy level reached nearly 40 percent of the population, increasing to 50 per cent by 1920, an enormous growth in comparison with 1895 where almost 70 percent of the population was illiterate (Collier & Sater, 2004). A similar growth pattern (although less intensive), occurred in secondary education, with almost half of the secondary students

attending private schools. The *Teaching State* as declared almost a hundred years before, was producing significant outcomes. This increased further at the beginning of the 1920s during the rule of the Alessandri government, which introduced compulsory basic education. These developments continued, and in 1970 the primary and secondary enrolment levels, reached almost 93 percent and 49 percent respectively. The progressive government under Eduardo Frei (1964-1970) implemented several policies aimed at guaranteeing universal access to primary and secondary schooling regardless of social background. These policies included: compulsory schooling from six to eight years; the building of 3,000 primary and secondary schools in both rural and urban areas; and the training of new teachers (F. Torche, 2005). In fact, during the 1960s and until 1973 the governmental focus was on expanding access and participation (Cox & Lemaitre, 1999).

In terms of higher education, at the beginning of the century there were two universities, The Universidad de Chile and Pontificia Universidad Catolica de Chile, some technical institutions such as the Normal School for men founded in 1842, the Pedagogic Institute of the Universidad de Chile founded in 1889 and the School of Art and Crafts for women founded in 1888 by textile manufacturers aimed at increasing the productivity of their workers (Austin, 1998). A surge in the number of students occurred after 1910. It was estimated that by 1918 there were 4,000 students, representing less than 1 per cent of the cohort group, and in 1919 a private secular community founded the first regional university, the Universidad de Concepción.

During this period there was a noticeable increase in political activities within Chilean universities, and even more so in Argentina. In 1907 the Students Union of the Universidad de Chile was established. The Students Union collaborated actively with the workers association and political parties. It was a form of political participation centred on reforming education and society and was strongly influenced by the student revolution of Cordoba, Argentina in 1918. The influence of the movement that extended across Latin America advocated a review of the curricula, incorporating modern scientific knowledge; better academic practices in accordance with modernity; the strengthening of university extension courses, particularly for workers that would lead to their development and participation in

University government. As Brunner (1990a) suggests the revolution had a significant impact through all Latin American countries including Chile. However, the real student revolution in Chile materialized in the 1960s. The student movement of the 1960s could be explained by the higher relative strength of the middle class within Chilean society, the predominantly urban character of Chilean society, the close articulation between university staff, state and political parties, and the weak economic situation of the country especially in respect of educational and cultural development (Garreton & Martinez, 1985). The outcomes achieved by the student revolution ended abruptly in 1973 with the advent of the military coup.

During Allende's government the country achieved a record with schooling covering almost 93 per cent and 49 per cent of the population in primary and secondary education respectively. After the coup, participation rates and educational policies at these levels remained constant until the educational reforms implemented in 1981. The transformation introduced by the military government prior to 1981 was aimed at applying "doctrines of national security to education, focusing on the control of teachers and the curriculum of history and social sciences" (Cox & Lemaitre, 1999, p. 151).

Deep reforms and changes at all educational levels occurred in 1981 through the introduction of neo-liberal ideas; the culmination of that has been referred to as the "teaching state" period in Chile. The main transformations included the introduction of efficiency through competition, decentralization and incentive mechanisms for the private provision of education. At primary and secondary levels, the control of schools was transferred from the Ministry of Education to the Municipalities. As Cox observes (Cox & Lemaitre, 1999), the declared rationale for this transfer of responsibility was to move schools closer to their communities and enhance local control and the participation of citizens, a strange argument considering that all the mayors were elected centrally by the military government, whilst the Ministry of Education kept control over the curriculum. The reforms introduced the concept of education vouchers, allocating public funding to institutions, whether private or public, based on monthly attendance rates and introducing pressure on educational institutions to implement strategies for improving the attendance of students at classes. As a consequence, public expenditure fell considerably, favouring public allocation to pre-school and primary

levels over secondary and higher education. This introduction of private resources and competition resulted in a reduction of public expenditure in education of almost 27 percent between 1982 and 1990. The Education budget fell from 4.9 percent of GNP in 1982 to 2.5 percent in 1990 (Cox & Lemaitre, 1999).

In terms of higher education, this neo-liberal approach encouraged the group of economists from the University of Chicago (contracted by the Pinochet government) to pursue two main goals related to institutional funding: first, universities sought to transfer teaching costs to students; and second, competition was encouraged in determining the allocation of public funding. In terms of student aid, the ‘Chicago Boys’ promoted a new system that sought the reduction of the higher education student allowance. This new system also introduced and increased the proportion of revenues generated through tuition fees; it emphasized student loans rather than student scholarships or direct institutional funding. These neoliberal ideas, within the Chilean government’s agenda, were strengthened by World Bank and International Monetary Fund [IMF] recommendations, influencing the system in the direction of privatization and commercialization (Espinoza, 2007). As an example, some of the suggestions (in the 1980s and reaffirmed in the 1990s) and adopted by government were:

- To reduce public expenditure in higher education and reallocate it in favor of primary education;
- To diversify institutional revenue sources by introducing competitive funding and increasing “user-pays” sales of service;
- To fund higher education studies via tuition and student loans, which were introduced in the early 1980s.

In addition, Espinoza also shows evidence that adjustment and post-adjustment policies negatively affected public expenditure in higher education.

From the 1981 reforms onwards, the Chilean higher education system experienced explosive growth. The process of growth occurred in three main stages: first growth of institutions; followed by the growth of branch campuses; and finally the growth in the number of programs offered, undergraduate as well as postgraduate. In 2014, there were 25 universities that received public funding (9 state and 16 private), represented collectively through the

Consejo de Rectores (sometimes referred to in this thesis as CRUCH Universities); and 37 private universities. In terms of branches, there were 131 from public universities and 107 from the private universities. Atria (2005) declares that, from the time of the 1981 reforms, the Chilean higher education system has taken or developed diverse characteristics that are relatively established and in some ways have encouraged policy to focus on the new teaching-learning-performance system that is transforming higher education in Chile. This form of diversification is expressed in different ways:

- Institutional diversification: Universities, Technical Institutes, and Training Centres
- Ownership: State and privates
- System of funding: with public funds and without public funds
- Functional differentiation: research universities and non-research universities
- Geographic localisation: regional and metropolitan
- Grade of complexity: high-medium- low
- Size: over 10,000 students to under 400 students
- Historically founded: Universities that existed before 1980; universities derived from state public universities (Catholic and Non-Catholic); universities derived from professional institutes; universities derived from private universities with public funding; and universities that are completely private without public funding.

In contemporary Chilean society, although there is better access as well as more funding, the system is under strong criticism coming from diverse sectors of the society. Students for example, since 2011 have radicalized their demands by seeking better support from the state, more regulation and the strengthening of quality education.

In the three decades between 1980 and 2010, the education system in Chile experienced major changes that reflect an increasing emphasis on the privatization of public assets and public services. The emphasis on decentralization and devolution is evident in the management of schools as their administration systems have been transferred from central government to municipalities. Likewise, the supply of schools has been augmented by the proliferation of semi-private and private schools aimed at responding to low and middle-class

demand. These patterns have resulted in greater educational participation for school-age children, especially in advancing the average length of time that students spend in school.

Despite significant improvements in schooling coverage, there are persistent educational inequalities. While access and participation at schools has improved significantly over the past decade, class differences remain. The average duration of schooling for the first income quintile in Santiago increased from 8.3 to 9 years between 1990 and 2006, while the fifth quintile moved from 13.1 to 14 years of schooling on average over the same period. The income gap between the two extremes was reinforced. The difference between both quintiles was 4.8 points in 1990, and increased to 5 points in 2006 (Casen, 2008).

As several studies have illustrated, the educational performance of students follows a pervasive pattern of segregation especially in Santiago. The best results are concentrated in private schools, while the worst performances are almost entirely located in low-income, public schools. In 2007 for example, 97 percent of students graduated successfully from private high-schools while only 81 per cent graduated from public schools. In addition, 95 percent of graduates from private high schools scored 450 points or more in the College Selection Test (elsewhere in this thesis referred to as the University Selection Test or PSU), whereas this percentage declined to 34 percent in public schools (MINEDUC 2008; SINIM 2008). However, it should be noted that the author has subsequently estimated this figure as 42% from data available in 2011 – see Table 7.1.

6.4. Funding policies in the higher education system in Chile

Funding of the higher education system in Chile, as in many parts of the world, currently comes from two main sources, private (or families) and government. Families can fund the fees with their own resources or access loans provided by banks or by the government. The government further allocates financial resources through different means for various activities of the universities. These resources have been directed mainly to CRUCH universities. Nevertheless, each year private institutions are increasing their share of public funding, mainly since 2006 with the incorporation of the State Guarantee Student Loan

Program (CAE), scholarships for students of teaching and technical programs, competitive public funding that was not previously available to them, research grants, and other funding sources.

6.4.1 Expenditure in Education

As a result of the economic recession the country went through in the early 1980s, and the public expenditure restrictions implemented by the military government, expenditure on education in Chile decreased considerably. This trend was reversed from 1990, due to the priority given to education by the subsequent democratic governments. In 1995 Chile achieved 25th place among 29 OECD countries with an expenditure of 4.5 percent of GDP for all levels of education, and seventh place in 2008 with 7.07 percent, ahead of countries such as Belgium (6.57 percent), New Zealand (6.57 percent) and Finland (5.87 percent) (OECD, 2011a). Nevertheless, the high degree of privatization experienced in Chile implies that much of this expenditure on education (public and private combined) is funded principally by households. This locates Chile as a country with low public expenditure on all levels of education, with 55.2 percent in 2000 and 58.6 percent in 2008. In terms of tertiary education the situation is even worse, as the proportion of public expenditure fell from 25.1 percent in 1995 to 19.5 percent in 2000 and to 14.6 percent in 2008 (OECD, 2011a), identifying Chile as the country with lowest public expenditure on tertiary education. Thus, although in absolute terms public expenditure has grown considerably during the twenty-year period 1990-2010, the strong growth of participation rates, mainly in private institutions, has produced a diminution of the public proportion of higher education funding.

6.4.2 Public Expenditure on higher education in Chile

Before the 1981 reforms, the state was the main funder for higher education. Prior to this date, financial resources were allocated from the state through subsidies established by government every year in the National Budget and through special regulations. With the reforms, funding to higher education was restructured through several instruments, such as Public Direct Allocation (AFD), Public Indirect Allocation (AFI), public loans and scholarships (L&S), and competitive funding (FDI). Although these instruments have

undergone important modifications, they continue as the more important funding sources for tertiary education, especially for Universities. Figure 6.1 shows the evolution of each type of public funding.

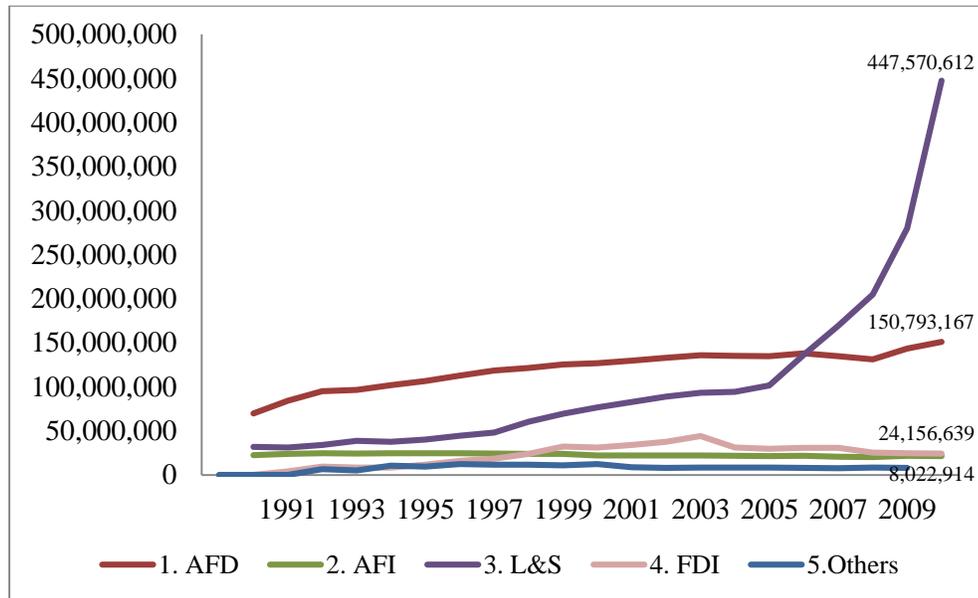


Figure 6.1 Evolution of higher education funding. In thousands of Chilean pesos [December 2010] Source: (SIES, 2012)

Until 2006 the most important public funding instrument was the Public Direct Allocation (AFD) but this was overtaken by Loans and Scholarships from 2007, which at \$447,579,612 in 2010 represents three times AFD, US\$150,708,167. One of the important changes is the inclusion of private universities as receptors of a greater amount of public funding, mainly in loans and scholarships. An example of that is the growth of a type of loan with a government guarantee (explained in more detail below), for which the allocation has increased 17 times between 2007 and 2010. It is important to mention that the decisive shift in the allocation of public funding for loans and scholarships was produced in 2007 (with resources allocated in the National Budget in 2006), coinciding with one of the biggest secondary school protests in Chilean history, the so-called *penguin revolution*. The protest was led by secondary school students, and loans and scholarships were not one of their issues (which did include the free National University Selection Test, among others). Considering the response of the Government in the face of strikers' demands, it can be deduced that the increased funding

for tertiary loans and scholarships was a political decision intended to avert the possibility that tertiary students would join in the secondary rebellion. These funding instruments have played (and continue to play) a major role in supporting education and it is important to understand their development, as explained below.

6.4.3. Public Direct Allocation (AFD)

Until 2006, PDA was the most important source of public funding for higher education, representing that year 41 percent of the whole of public expenditure on higher education but falling to 20 percent in 2010. The PDA is provided only to CRUCH Universities. It is allocated based on two mechanisms, in which 95 percent is an historical allocation, and the remaining 5 percent is allocated according to performance indicators. These indicators are intended to determine, through study of quantitative variables, the academic performance of institutions. Although, the 95 percent is called an historical allocation, it can be modified for an institution depending on trends in that institution’s performance indicators in comparison with other institutions. Figure 6.2 shows the composition of the PDA.

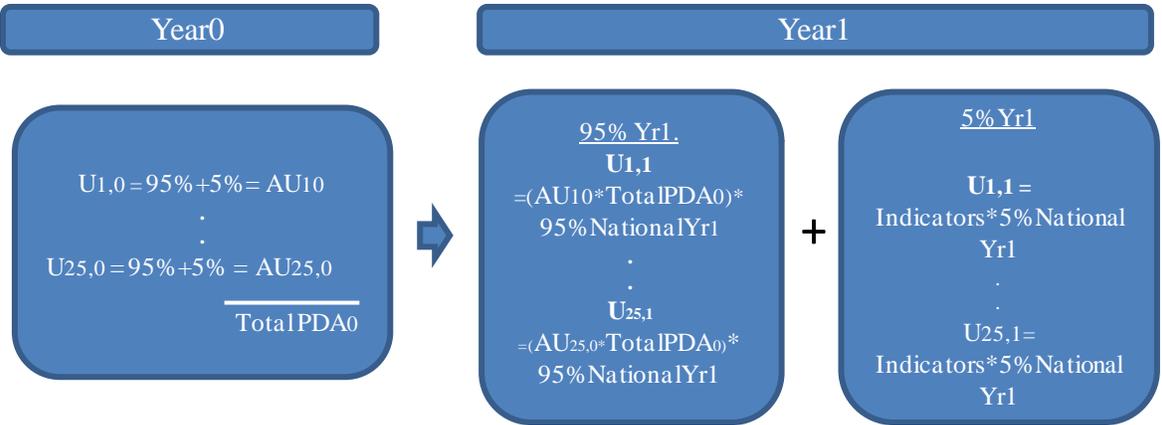


Figure 6.2: Composition process of Pubic Direct Allocation.
Source: Developed by the Author

In the formula presented in Figure 6.2:

- U_{1,0} represents University 1 in the year 0
- U_{25,0} represents University 25 in the year 0
- AU₁₀ represents Total public direct allocation received by university 1 in the year 0.

- AU25,0 represents Total public direct allocation received by university 25 in the year 0.
- Total PDA0 represents Total amount of funding approved in the national budget for allocating among VCC universities as public direct allocation in the year 0.

Thus, as can be observed in figure 6.2, even though the proportion of 95 percent is called historical, it can be influenced or altered for the next year depending on the outcomes obtained in the five percent variable, in accordance with the following formula:

$$\Delta(5\%) \Rightarrow 0.01 * D_{01} \left(\frac{\#stud.}{carrera} \right) + 0.15 * D_{15} \left(\frac{\#stud.}{J.C.E.} \right) + 0.24 * D_{24} \left(\frac{\#postgr.}{J.C.E.} \right) + 0.25 * D_{25} \left(\frac{\#proy.}{J.C.E.} \right) + 0.35 * D_{35} \left(\frac{\#papers}{J.C.E.} \right)$$

Figure 6.3: Formula for calculating allocation of 5% variable.
Source: Developed by the Author.

In the formula presented in Figure 6.3:

- *stud.* represents Number of undergraduate students of the university
- *Carrera* represents Number of undergraduate programs of the University
- *postgr.* represents Full time equivalent academics holding master and PhD degrees.
- *J.C.E.* represents Total full time equivalent academics.
- *Proy.* represents Number of research projects obtained during the year by academics of the university. The projects included are defined by the Ministry, but are mainly those funded by the National Commission of Science and Technology.
- *Papers.* represents Number of publications by academics of the University. Papers recognized are those indexed in Web of Science (ISI) or those indexed in Scielo. The last one is calculated as Scielo=ISI/3.

Analysing the formula in Figure 6.3 shows it is not clear that PDA responds to the government's goals, such as quality, equity, and excellence that guide the policy of higher education in the country. 40 percent of the formula could be considered as relating to teaching, such as the number of students, number of programs, number and qualifications of

the academics. Even so only inputs to the process of teaching and learning are incorporated without considering outcomes such as dropout rates, completion times, and so on. The other part of the formula, 60 percent, is related to research outcomes, projects and publications, in which only some small and regional universities can compete with the bigger institutions, but with some difficulty as funding and resources are often limited in the regions.

6.4.4 Loans and scholarships

In 1990 there were four main public funding instruments available to aid university students, representing 26 percent of the whole of public funding to higher education. In 2010, loans and scholarships were allocated through 10 different instruments of students' aid, such as State Guarantee Students Loan Program (CAE), Solidarity Fund (this is only available for students of CRUCH Universities), new millennium scholarships, teacher vocational scholarships, among others, representing 61 percent of the whole of public funding to higher education. A part of the significant growth in funding for students, and one of the more important changes in public policy, was the inclusion as beneficiaries those students enrolled in universities not belonging to the CRUCH group, or that are professional institutes and technical training centres. This wider participation, and the main instrument that explains the growth in student aid, the State Guarantee Students Loan Program (CAE), are explained later in this chapter. Since 2006, the CAE explains the increase in the gap between total public higher education resources and the funding allocated to CRUCH universities, as shown in Figure 6.4.

In addition to the CAE, the most traditional and important source of student aid until 2005 was the loan called Solidarity Fund for Tertiary Education (SFTE). Until that year, this higher education loan represented more than 60 percent of the public funding for students, and it corresponded to a benefit exclusively for CRUCH university students, allocated by the state and managed by the universities themselves. With an interest rate of two percent annually, students started to pay it back two years after graduation, with a limit of 12 years payment, with the annual payment no higher than five percent of the debtor's income. Moreover, if the

debtor was unemployed or the salary lower than an established minimum, there was no obligation to repay the loan.

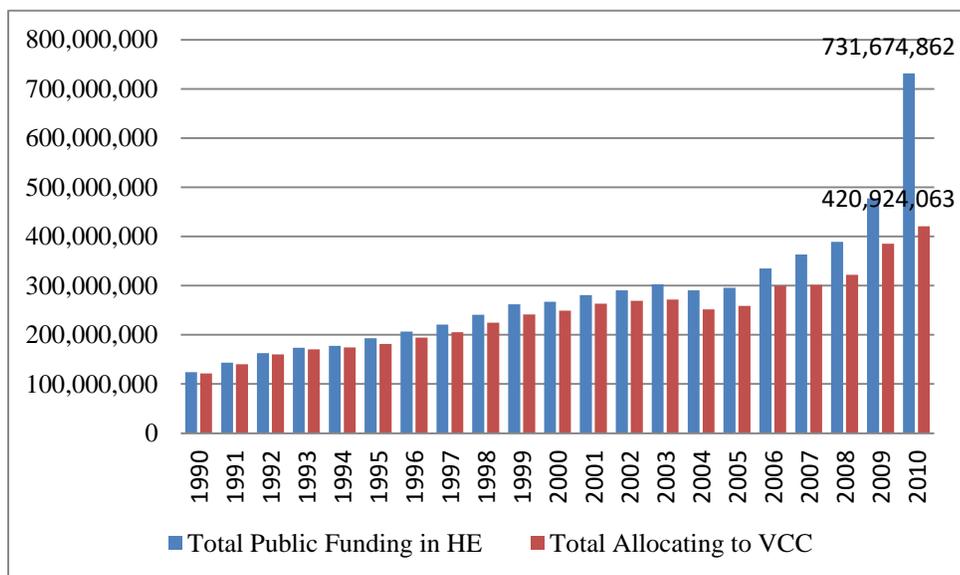


Figure 6.4: Growth of public funding allocated to institutions which do not belong to CRUCH (note that CRUCH is denoted VCC in the legend)
Source: Calculated by the Author from (SIES, 2012)

The third-most important aid has been the Bicentenary Scholarship, representing 17.5 percent of loans and scholarships funding in 2010. It is targeted to students coming from the first and second socioeconomic quintiles with scores greater than 550 points in the PSU and enrolled in any one of the CRUCH universities.

6.4.5 Public Indirect Allocation (AFI)

Public Indirect Allocation is an instrument of public funding targeted to those institutions that achieve enrolment of the best students, measured by scores in the PSU. It covers the best 27,500 enrolment scores each year, and can be obtained by any higher education institution. Although throughout the years it has been decreasing in importance in relation to public funding as a whole, it is not an insignificant amount for institutions.

In 1990, PIA comprised 18 percent of the public higher education funding, decreasing to 4.5 percent in 2009; and 2.9 percent in 2010. As has been explained in previous chapters, CRUCH universities historically have a concentration of the best students, measured by PSU enrolment scores. The test is also a compulsory requirement for entrance to these institutions, which does not happen normally within the private higher education system. Figure 6.5 shows the allocation of AFI by type of institution during the 20-year period 1990-2010.

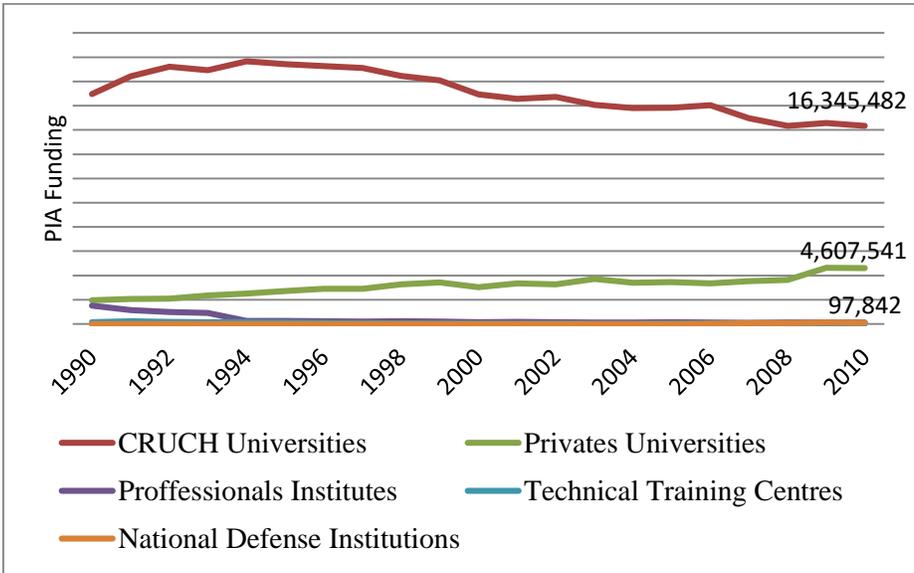


Figure 6.5: Evolution of PIA by type of higher education institution, 1990-2010. Source: Calculated by the Author from (SIES, 2012)

The supremacy maintained by the CRUCH universities within the system is clear. Nevertheless, a constant fall can be observed since the mid-1990s in favour of private universities, which have grown in terms of the number of students, overcoming CRUCH universities in 2010, and doubling their allocation of AFI in 20 years

6.4.6 Institutional Development Funding (FDI)

A key characteristic of the funding model for higher education in Chile is that competition for public funding has assumed a greater significance in the 20-year period 1990-2010.

Although this chapter does not consider the complete range of the contestable funds that the universities compete for, such as research grants or innovation and enterprise schemes, analysis of the mechanism known as Institutional Development Funding provides an indicative example of how competitive funding is implemented. Contestable funds for the development of the CRUCH universities grew more than four times between 1991 and 1998, from almost eight million US dollars to 35 million US dollars in 1998 (SIES, 2012). In the same year government implemented a program called “Improvement of equity and quality of the higher education system”, MECESUP. With the implementation of the program, the development investment (implemented through contestable funds) grew nearly 40 percent, reaching almost 55 million US dollars in 1999, a trend that was maintained until 2002, which marked the end of the first stage of the program. Between 2000 and 2012 FDI (including different contestable instruments) grew 68 percent from \$23,283 million Chilean pesos to \$39,278 Chilean pesos (Mineduc, 2013). With the foundation of the Mecesup program in 1999, FDI comprised 10 percent of the whole of public funding, with most of the growth experienced via loans and scholarships. Although FDI had grown considerably, in 2010 it only represented 3 percent of the whole of public funding in the sector.

A first stage of MECESUP, directed exclusively to CRUCH universities, included important resources for development of infrastructure, scholarships for academic staff, and improvement of administration systems in the universities, among other things. The second stage of the program, called MECESUP2 or FIAC (Academic Innovation Funding), aimed at improving equity and quality, but mainly in process, curriculum improvement, skills of the academic staff, and a special emphasis on improving retention, reducing drop-out rates and enhancing students’ timely programme completions, as well as learning outcomes. At this stage, universities not belonging to the CRUCH group were able to participate, but with access to only 25 percent of the resource allocation. At its third stage of development, initiated in 2013, the program MECESUP3 aimed to improve the quality and relevance of higher education through the expansion of performance-based funding. Within this framework, institutions sign a performance-based agreement with the Government, establishing target outcomes for excellence in graduation, employment of graduates, and research publications among many others.

In addition, one year after strong student protest actions in 2011, the government implemented “basal performance funding” aimed at CRUCH universities. With characteristics similar to the Public Direct Allocation (PDA) explained previously in this section, the government allocates additional resources defined in the national budget according to the performance of each CRUCH institution. In 2012 (for allocation in 2013), \$11,800 million Chilean pesos (about US\$22 million), was allocated across three categories of CRUCH university according to the criteria established by the Ministry of Education (Mineduc, 2012). The categories are as follows:

- Category 1: Universities with emphasis on teaching, research and doctoral programs. Those with at least 10 doctoral programs accredited by the National Accreditation Commission (CNA) and at least 300 publications indexed in Scopus per year are included.
- Category 2: Universities with emphasis on teaching and targeted research, having at least one doctoral program accredited by the CNA and reaching over 100 publications indexed in Scopus per year.
- Category 3: Universities with emphasis on teaching, offering primarily undergraduate programs and which have not accredited doctoral programs, and do not possess publications in Scopus.

CRUCH universities are allocated to one of the three categories, then their performance is evaluated against the indicators as outlined in Table 6.3.

Given the focus of this research, namely the role of the university as an agent of social change (particularly in giving more and better development opportunities to disadvantaged socioeconomic groups), it can be seen that this funding instrument of higher education public policy only incentivises those institutions in the third category. This is those institutions classified as predominantly focused on undergraduate teaching, to incorporate students from socioeconomic quintiles 1,2 and 3. It does not engage institutions with higher levels of complexity in enrolling students from these socioeconomic groups.

Table 6.3: Categories and performance indicators for basal performance funding allocation

Category	Performance Indicators
1	FTE academic staff / 100 students in the previous year
	FTE academic staff with PhD qualification/FTE academic staff
	N° of Scopus publications/FTE academic staff
	Average number of citations per publication over the last five years
	PhD graduation rate
	Number of patents filed by university
2	FTE academic staff/ 100 students in the previous year
	FTE academic staff with PhD qualification/FTE academic staff
	Average number of citations per publication over the last five years
	N° of Scopus publications/FTE academic staff with PhD qualification
	Undergraduate graduation rate
3	FTE academic staff/100 students in the previous year
	FTE academic staff with PhD, Master or Medical specialization/ FTE academic staff
	Number of students from quintiles 1,2,3/ Total of students
	First year retention rates
	Undergraduate graduation rate

Source: Developed by the Author from (Mineduc, 2012)

6.5. Private expenditure in higher education in Chile

According to OECD data, Chile is among those countries characterized by high tuition fees, and a low contribution from public funding. In fact, between 1999 and 2009 the average growth of tuition fees was over 38 percent with the CRUCH universities increasing fees by 43 percent and private universities by 21.3 percent (Salas, 2011). This situation has affected both individual students that pay directly for their studies, and also the state that must fund higher fee subsidies. As public support to students is directly related to the cost of tuition and

fees, in 2005 the government established reference fees for each higher education institution and its programs, attempting to calculate loans and scholarships based on the respective reference fees. Nevertheless, even with the regulation of fees for the purpose of allocating public funding, the market model adopted in Chile treats higher education as a market as well. As a consequence, the responsibility for price allocation depends on the forces of demand and supply, with higher education institutions able to freely establish their prices.

The mechanisms used by the government for the determination of reference fees are different (Escobar, Eguiguren, & Sánchez, 2012). One mechanism is used for Universities and another for Professional Institutes and Technical Training Centres. Determining reference fees for universities and their programs depends on a calculation using five performance indicators, which are as follows:

- $[(\text{Master FTE}/3) + (\text{PhD FTE})] / (\text{Total undergraduate students})$, weighting of the indicator 25 percent. (*Note that Master FTE and PhD FTE refer to the number of academic staff qualified at these levels*).
- $\text{Number of research grants from national commission of science and technology} / [(\text{Master FTE} + \text{PhD FTE})]$, weighting of the indicator 21 percent
- $[(\text{Number of ISI publications}) + (\text{Scielo publications} / 3)] / [(\text{Master FTE} + \text{PhD FTE})]$, weighting 21 percent
- Timely graduation rates, related to those students who complete their program within the official time frame. This indicator has a weighting of one percent. In the 2013 determination of the reference fees, the impact of this indicator was changed, from 20 percent to one percent, given the low reliability of the data collected in the previous process;
- First year retention rate, with a weighting of 32 percent.

Similar to the five percent variable component of the Public Direct Allocation (AFD), human resource capacities, and outcomes in the form of research projects and publications, are extremely important, and comprise 67 percent of the final indicator. This reinforces the idea that the more productive academics, the acquisition of research grants, and the production of

publications are synonymous with a better higher education institution, and therefore cost more.

After the information indicated above is obtained by the government for every institution, the combined results are used to rank universities into four categories, where a score over 80 percent (of the standard normal distribution) classifies an institution as in section A, above 60 percent in section B, above 40 percent in stage C, and 20 percent in section D. Once classified, each university's programs are then considered; the fees charged for the program having the highest level of accreditation (ie the highest quality program) are taken as a reference point. A series of additional steps finally determine the reference fees for the programs of each university, and the annual adjustment of this fee that is allowed.

6.6. Assessment and quality assurance in higher education

The growth of higher education throughout the world has required systems to ensure the quality of both the institutions and the programs offered. Consistent with the foregoing, various models of quality assurance such as audit, evaluation, and accreditation among others, provide public information to show that students are receiving education in accordance with the investment they or governments are making to ensure that the educational system will achieve its objectives. As Woodhouse states:

“The phrase of quality assurance refers to the policies, attitudes, actions and procedures necessary to ensure that quality is being maintained and enhanced” and “Quality assurance is sometimes used in a more restricted sense, either to denote the achievement of a minimum standard or to refer to assuring stakeholders that the quality is being achieved (i.e. accountability)” (Woodhouse, 1999, p. 31).

In Chile the growth of enrolment in higher education has inevitably led to the installation of a national system of quality assurance especially since 1990. The first stage was the founding of the National Education Council whose main purpose was to grant operating licenses to institutions created after 1981. In 1999 the National Accreditation Commission (CNA) was

created to design and propose a national system of quality assurance of higher education and to conduct periodic evaluations of the quality of higher education institutions. In 2003 13 institutions, comprising 11 universities, (8 belonging to the CRUCH group and 3 private), as well as two professional institutes, were subjected to the first trial exercise of institutional accreditation in Chile (Cancino & Schmal, 2014).

Thus, and contrary to international experience, which in general sees quality assurance processes first prescribed by law, Chile opted for experimental processes that began with the licensing and accreditation of programs, both undergraduate and postgraduate, and finally with institutional accreditation, leading to the formulation of a draft law that initiated the national system of quality assurance in 2006 (Lemaitre, 2008).

The regulations associated with the law make the National Accreditation Commission (CNA) responsible for the implementation of processes and institutional accreditation of undergraduate and graduate programs. In relation to the latter programs, the law allows the foundation of private accreditation agencies, which then operate under the supervision of CNA.

In 2010 the new General Law of Education was promoted, which repealed the Constitutional Organic Education Law (promoted by Pinochet in 1990), and founded the National Council of Education (CNE), the legal successor of the Higher Education Council. This new Council continued with the licensing and appeals of accreditation decisions developed by its predecessor.

The contemporary national system of quality assurance for higher education in Chile is shaped by the National Council of Education (CNE), the National Higher Education Division (DIVESUP) through its National Information System of Higher Education (SIES), and Accreditation Agencies (AA), which are private and non-profit organizations authorized by CNA in order to drive the accreditation process. Four main functions are performed by the aforementioned bodies (Cancino & Schmal, 2014; OECD, 2012c) :

- Information: Provision of background and information necessary for system management and public information, aimed at families, students and others. The main responsibility lies with the DIVESUP through SIES. Additionally, these bodies must collaborate and participate as much with the CSE as CNA.
- Licensing: Compulsory requirement for initial approval and subsequent monitoring of new institutions of higher education. This process lies exclusively with CSE and is undertaken for not less than six years and not more than eleven, until the institution acquires autonomy.
- Institutional accreditation: Voluntary process, conducted exclusively by the CNA, which is implemented through a combination of internal and external evaluation mechanisms; institutional quality assurance results are evaluated.
- Programme accreditation: A voluntary process of quality assessment of programmes delivered by autonomous institutions. In the case of education and medicine programmes it is a compulsory process. Programme accreditation can be driven by the CNA as well as by the AA.

Though accreditation is voluntary for institutions as well as for the programmes, with the exception of medicine and education, public funding policies allocate resources only to accredited institutions. In the universities' case, there are five areas within which they can be evaluated and accredited: institutional management; undergraduate teaching; research; postgraduate and community relationships, with the first two being compulsory.

Institutions can be accredited for a maximum of seven years if they achieve successfully criteria established by the law as well as those more specific requirements of CNA. If institutions do not achieve the requirements, they are accredited for fewer years and must implement recommendations during the period preceding the next accreditation. It is possible for a decision to be made not to accredit an institution, and to set out requirements that must be resolved in a period of two years, after which institutions can apply again for accreditation.

Chapter Seven analyses outcomes from the higher education system in different dimensions, including quality assessment and accreditation. It is of interest to examine whether the new

regulations and national system of quality assurance is protecting all students, regardless of the type of institutions they attend, such that the instruction received is via programmes and institutions that guarantee the quality of their studies and professions.

6.7 Policies and mechanisms of student enrolment

The selection test for students of higher education has undergone three changes since its inception. From 1850-to-1967, the national university selection test was called *Bachillerato de Humanidades*, from 1967-to-2003 its name was the *Prueba de Aptitud Académica (PAA)*, and since 2003 it has been known as the *Prueba de Selección Universitaria (PSU)*. The Bachillerato was established in 1850 by the Universidad de Chile, as a compulsory requirement for being enrolled in that institution. This process was maintained until 1966, a period in which there were important changes in the educational system, especially in terms of access. Changes were introduced in the conditions and requirements of the test: such as the introduction of a new writing test and the utilization of scores, that influenced the selection of students, as well as in the test application and administration. For example, in 1881, women were granted access to higher education, and the test was established and conducted in different parts of the country, congruent with the policy of founding branch universities by the Universidad de Chile and Universidad Técnica del Estado in 1966.

At the same time, the test was accepted as a requirement for enrolment by other universities in Chile, for example, Pontificia Universidad Católica de Chile which started to require the test implemented by the Universidad de Chile in 1898. Similarly, Universidad de Concepción introduced the enrolment test when it was founded in 1919. With the creation of the Chilean Universities Consejo de Rectores (Council of Rectors, equivalent to Vice Chancellors elsewhere) in 1954, all institutions belonging to this group were required to conduct the national university selection test. The current university selection test, modified in 2003, includes mandatory minimum content aligned with the curriculum framework for secondary school established by the Ministry of Education. It comprises two mandatory tests, Communication-Language and Mathematics, plus two elective tests, History-Social Science and Science. Administered by the University of Chile, this is the official requirement for entry to the CRUCH Universities, each of which defines the weighting of each test and the

importance it attaches to the marks obtained in secondary education. Private universities and institutions such as CFTs and IPs are not required to seek or select students according to the score obtained. However students accessing public instruments of student aid, for example the State Guarantee Student Loan Program described previously in the current chapter, can only enter universities (public or private) if they have taken the test and obtained a minimum of 475 points (out of 850). In the case of CFTs and IPs the test is not a requirement; policy stipulates that students should at least have a graduation score of greater than 5.2 in high school. Additionally, in 2011, eight universities not belonging to the CRUCH group adopted the PSU entry requirement, bringing to 33 the number of universities engaged in the process.

Questions raised about the inequity of the PSU test, concerning the poor performance of students from lower socioeconomic groups and municipal high schools, (as discussed further in chapter seven), led to the inclusion in 2013 of a new variable in the application and selection system, namely the ranking of secondary school grades. The mechanism gives additional points to students who graduate from secondary education with a top rank average of the last three years' grades from the institution where they studied. Regardless of the results of the PSU test selection, outstanding students get an additional bonus that increases their score for applying to enter a university.

6.8. Conclusions

In all fields of human endeavour, the diverse mechanisms of social evolution are changing and adapting to new scenarios and challenges. With more complex expectations and purposes, higher education systems and universities have become what they are today. Several models and mechanisms of development have been implemented around the world, with each nation adopting that model which most closely aligns with the national vision and which is determined by the distinctive social, political, and economic conditions in each country.

An understanding of the sciences, arts and humanities, the necessity to provide new knowledge for human development, understanding and responding to the challenges of the

immediate environment, at national and global levels, the formation of the labour force, and the intellectual development of young people, are among the many challenges that systems and universities seek to address.

In the context of the above, the higher education system and institutions in Chile have transitioned through the years exhibiting various purposes, models and outcomes. Beginning with education as an instrument developed exclusively for the elite, and incorporating private providers since its inception, the institutions and the system have been slowly taking shape. The early twentieth century social demands and new models of development saw the universities responding to the demand for recruitment and training of new sectors of society, largely emerging professionals and politicians who would go on to participate actively in shaping the destiny of the country. As in many societies, the human capital model also inspired the growth of education and universities in Chile, in the same way that the role of the market has shaped the direction of higher education. Nevertheless, it was not until the return to democracy in the 1990s, at a time when the participation of Chilean society in higher education has been growing considerably, that there has begun to develop more strongly, both by government and families, a concept of higher education as an instrument of mobility and greater social equity. Thus is seen the emergence of new and different institutions: vertically, ie from technical institutions to universities, as well as horizontally throughout the country.

The beginning of the 21st century has seen the implementation of new policies for quality assurance and public funding to ensure equity in the system, with many such policies currently going through the process of implementation. Access to higher education has increased considerably, with funding mechanisms facilitating access by lower socio-economic sectors and also incentivising some institutions to attract these groups. However, the outcomes have not been commensurate with governmental objectives. Evidence of the latter are ongoing student demonstrations, by both secondary and university students, appealing for greater equity and quality in education. It was this form of student action in 2014/15 that prompted changes in the government program for the president, Michelle

Bachelet, and suggested further transformations are likely in the Chilean educational system at all levels.

In Chapter Seven, the outcomes obtained for higher education in Chile in various dimensions are discussed, and the extent to which the university system does or does not promote social equity and development opportunities for the most disadvantaged socio-economic groups is critically examined.

CHAPTER SEVEN:

OUTCOMES AND PERFORMANCE OF THE HIGHER EDUCATION SYSTEM IN CHILE

The previous chapter described and analysed the emergence of higher education in the world, traversing the diverse models adopted by different nations and focusing on the particular pattern of evolution in Chile. Although originating in the first half of the twentieth century with a range of purposes, providing greater and better opportunities for young people through higher education developed as a stronger purpose of both of nations and universities. Chile too followed this pattern; however improved equity of access, and opportunities for historically disadvantaged sectors, notably those which had been excluded from higher education, really began to achieve traction in the early 1990's, with the return to democracy.

From the point of view of the university as an agent of social change, this chapter analyses the outcomes and performance of the higher education system in Chile. First the extent to which the university selection test has made it possible to increase student Access is examined. Second, the evolution of participation rates for the various socioeconomic quintiles is explored. The academic performance of graduates and their access to the labour market is then analysed. The impact on institutions of funding policies and the national system of quality assurance is critically examined. Finally, the evolution and outcomes of student activism, towards the development of a fairer education system, are described and analysed.

7.1. Levels of enrolment in the tertiary education system in Chile

7.1.1 Evolution of secondary students

The national university selection test (PSU), is the first hurdle that secondary students need to overcome in order to enrol in the university (Espinoza, 2007). Since 1967, when it started

to be called “Prueba de Aptitud Académica”, the number of students annually registered for taking the examination has grown by a factor of nine, from 30,763 in 1967 to 285,000 in 2010. The annual cohort includes students who are completing their secondary studies in that year and older students who finished their secondary schooling within the previous two years or more; many of these older students taking the test for the second time. The chart below shows the evolution of student registration in the national university selection test.

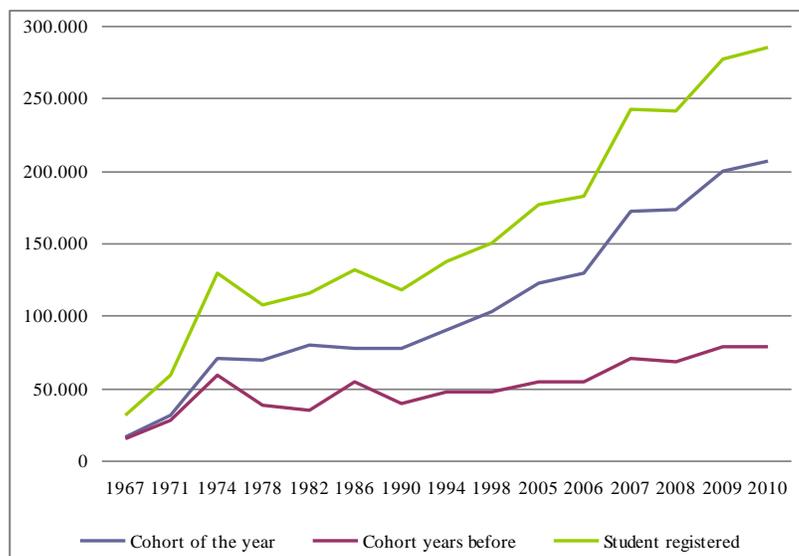


Figure 7.1: Evolution of student registration for the national university selection test. Source: Drawn by the Author from (DEMRE, 2011)

The growth experienced in the demand for access to the higher education is evident, measured by the number of students registered for the national university selection test. However, this growth was generated primarily by students who had graduated from secondary schooling during the same year as the test. Since 1990, there has been a growing gap between the number of students enrolled for the test who had graduated that same year, and students taking the test again after having previously graduated from secondary education. Although the educational reform was introduced in 1981, the growth of private universities became increasingly important after 1990. It is important to assess the number of students who finish secondary schooling in a certain year who are registered for the test. Based on data obtained for the five-year period 2007-2011, there were 268,169 students who graduated from-secondary education in 2007; 247,765 in 2008 and 264,682 in 2009. Thus, a

significant proportion of students who graduate, register for the national university selection test.

Regarding the secondary school origin of the students registered, data from seven years (2004 to 2010) indicates that students come from different types of schools having various funding options. The chart in Figure 6.2 below shows the proportion of students registered for the national university selection test from 2004 to 2010. The graphs shows that students come from different types of secondary school, including those with private funding, those completely funded by the government and those secondary schools with a mixed funding model, i.e. partly funded by the government and household resources.

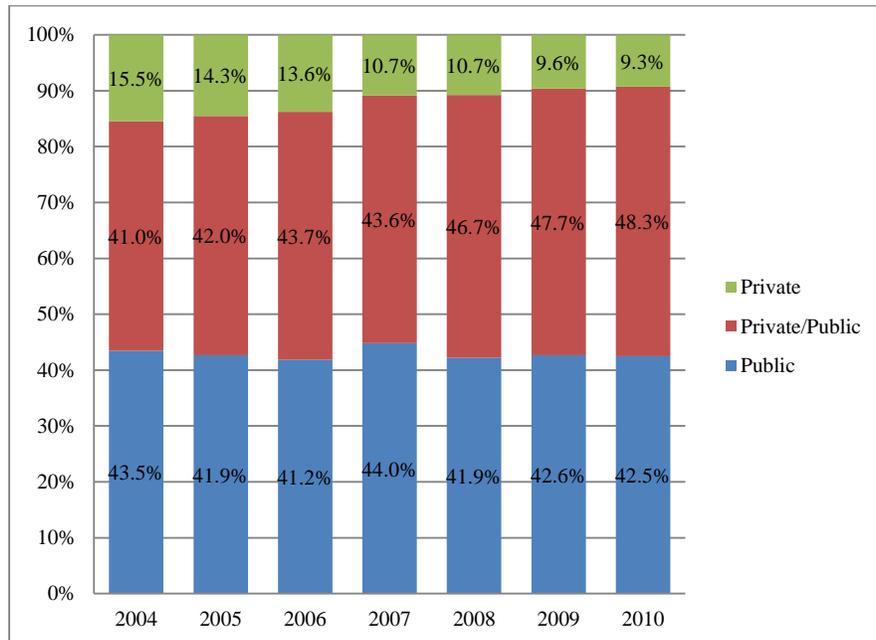


Figure 7.2: Distribution of students taking PSU³ according type of school
 Source: Compiled by the Author from (DEMRE, 2011)

Students graduated from public secondary schools maintained their proportion at between 42 and 45 percent; students from subsidized secondary schools rose from 41 percent to 48.3 percent, whereas those from private schools dropped from 15.5 percent in 2004 to 9.3 percent

³ National university selection test

in 2010. While the DEMRE⁴ fact book does not include the socioeconomic origin of the students, previous studies have demonstrated that there is a relationship between the type of school and socioeconomic origin. Those who are in the first and second quintiles are strongly concentrated in public schools; 79.9 percent of the students belonging to the first quintile are in public schools; as are 67 percent of those coming from the second quintile. By contrast those students from upper socioeconomic groups (the fifth quintile) are mostly concentrated in subsidised and private schools; 49.4 percent of these students attend private schools and 31.8 percent attend subsidised schools (Vargas & Peirano, 2002). Using data from Figure 7.1 and the percentage apportionments from Figure 7.2, it can be calculated that the significant growth of those registered to take the national university selection test is propelled mainly by students concentrated in lower socioeconomic groups. In absolute terms, the number of students registering for the PSU from private schools remained essentially static between 2004 and 2010, with the increase in student numbers being from public schools accounting for 41 percent of the growth, and those from subsidised schools accounting for 59 percent of the growth. This trend was reinforced in 2006 when the government decided to award free tests for those coming from public and subsidized secondary schools⁵.

Once students are registered to take the test, which often occurs within the first semester of each year, they typically take up this option within the last 30 days of the year in different places throughout the country. The chart in Figure 7.3 below shows the relationship between students registered and those who finally sit the test.

As evident from Figure 7.3, between 1967 and 2006, there was little difference between students registered and those who finally took the test, (over 95 percent). However in 1974 the ratio dropped to 80 percent which could be explained in part by the political situation that the country was experiencing, one year after the military coup. Following that year, the ratio remained at over 95 percent until 2006, when it decreased to 87 percent, and then remained steady at 86 percent until 2010. The drop in those taking the test since 2006, although not high, might be explained by the government decision made in that year,

⁴ Institution that administrates the test

⁵Taking the test has a cost of US\$100 approximately.

regarding funding the test for a number of students coming from public and subsidized secondary schools. In addition, it explains the growth of 20 percent in the number of students taking the test in 2006 compared with 2005.



Figure 7.3: Comparison between registered students and students who took PSU
Source: Compiled by the Author from (DEMRE, 2011)

Considering the gap between those registered and those who sat the test, over the period 1975 to 2006, it is of interest to examine the yearly averages. While this average figure is 6,500 students, it rose to near 30,000 in 2006. Thus, it can be deduced from the 2006 figures that 24,000 additional students registered, funded with public resources but these students did not take the test. This cost the government more than US\$1,000,000 million dollars per annum (for a total of \$US5,000,000).

7.1.2 Scores obtained according to type of secondary school

An examination of the test scores reveals a range from 200 to 850 points in each test. There are two compulsory tests, Communication-Language and Mathematics, and two optional, History-Social Science and Science, that students take depending on their choice of programme. Every university establishes its own requirements; some universities give more weight to mathematics than other subjects. For some institutions the average scores may be

more important than the fact that students completed secondary schooling with certain grade averages. An analysis of the scores obtained by the students over seven years was conducted by comparing the average scores between mathematics and languages in the compulsory test. The data, shown in Table 7.1, includes all students who took the test in a particular year.

Table 7.1: Number of students by PSU scores ranges and type of secondary school.

		less than200	200 - 449	450 - 599	600 - 849	Sstandar Average	Deviation
	Private	1	2.776	9.772	11.353	582,3	104,0
	Subsidized	11	20.546	32.167	10.245	498,4	98,9
2004	Public	14	28.576	29.295	7.615	473,2	106,2
	Private	0	1.826	9.438	13.504	600,6	93,8
	Subsidized	8	28.272	51.932	14.542	501,6	94,1
2007	Public	4	37.825	42.813	8.674	472,8	94,8
	Private	0	1.509	8.724	14.806	611,4	94,1
	Subsidized	7	35.894	67.215	18.870	502,1	94,9
2010	Public	4	43.595	48.535	10.426	472,3	96,6

Source: Compiled by the Author from (DEMRE, 2011)

(Note that numbers are in Chilean format, where 1.000 = 1,000, and 100,0 = 100.0)

As can be observed in table 7.1, there is a direct relationship between the type of secondary school and average PSU scores obtained, and that relationship has been maintained throughout the years under examination. In 2004, the average score of students from public schools was 473.2, and in 2010 it was 472.3. By contrast, students coming from private schools obtained the highest scores with the average rising from 582.3 in 2004 to 611.4 in 2010. Comparing the range of scores: students from private schools were strongly concentrated within the 600-849 range; students from government-subsidized schools, were concentrated in the 450-599 range; and those from public schools were concentrated in the 200-449 and 450-599 ranges. In 2010, 42.5 percent of students coming from public schools obtained less than 449 points, which meant they could not be enrolled in any university within the purview of the Consejo de Rectores (CRUCH); 47 percent obtained more than 450 and less than 599 points. These scores reveal that 90 percent of these students obtained scores lower than 600 points. Of those students from government-subsidized school, in 2010, 29.4 percent did not achieve 450 points, and 55.1 percent scored between 450 and 599 points; the remaining 15.5 percent achieved more than 600 points. Conversely, of the students from

privately funded schools, only six percent did not achieve the score required for applying to a CRUCH University, and 59.1 percent obtained more than 600 points. Thus, 94 percent of the students from private schools could be enrolled in a CRUCH university.

In summary, the probability of being enrolled into a CRUCH university for students coming from public secondary schools is 55.7 percent. For those who graduated from a government subsidized secondary school, the percentage rises to 70.6 percent; and for those coming from private secondary schools the probability is 94 percent.

7.1.3 Evolution of applications and enrolment

Once students know their test scores, they begin the application process, which occurs typically at the beginning of the year. From 2004 to 2010, between 66 percent and 68 percent of students who took the national university selection test obtained more than the minimum score required for applying. Nevertheless, each year fewer students apply to a publicly funded university. The chart in Figure 7.4 below shows the trend since 1967.

In 1967, 100 percent of students who took the national university selection test, applied for acceptance, and this percentage remained constant at about 79 percent until 1975. The percentage dropped in 1978, but remained over 75 percent, which could be explained in part by the political situation at that time. For the remaining scores 25 percent were not high enough for university application. In 1982, one year after the educational reforms, this percentage declined drastically to 50 percent. The decline continued, though at a slower rate, to 35 percent in 2010. It is necessary to consider the information explained earlier, namely that on average 67 percent of students who take the test achieve a score sufficient for applying to a CRUCH university. After the 1981 reforms, with the privatization of the system, it was possible to be enrolled in a private institution, either without having taken the test or without assigning any importance to the score obtained. Nevertheless, CRUCH universities enrolled their students based on the scores obtained in the test, and likewise many private institutions gave these scores increasing importance.

Following a student application, each institution is publically informed of who and with what score a student has been accepted into each discipline.

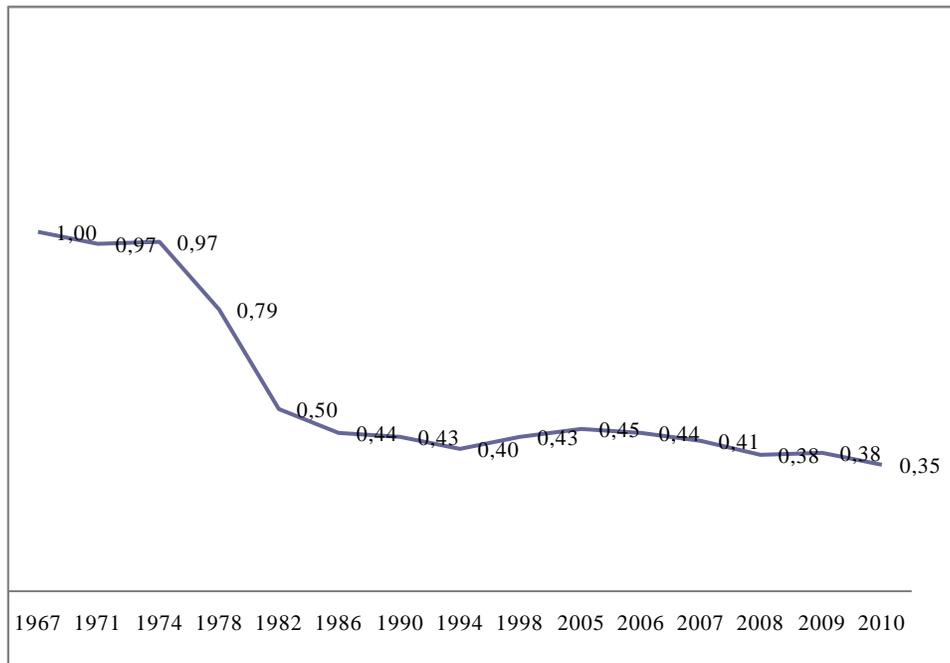


Figure 7.4: Trend in applications to enrol in publicly funded (CRUCH) universities. The vertical scale indicates the fraction of students sitting the PSU in that year who then applied to enrol in CRUCH universities. Source: Compiled by the Author from (DEMRE, 2011)

The percentage of students who finally enrol in a CRUCH University regardless of those who took the national university selection test, is shown in Figure 7.5. Figure 7.5 shows the proportion of students each year who enrolled in a CRUCH university. In 1967, the probability of being enrolled into a CRUCH university was 71 percent, but currently the likelihood is approximately 20 percent. The conclusion might be drawn from these trends that despite the significant growth of the university system, the demand for enrolment in a university is much greater than the supply, and the probability of being enrolled has declined over time. However, many CRUCH universities have not filled their vacancies leading to an alternative conclusion that students are preferring private institutions, thereby undermining the supposition that only students with resources and low national selection test scores go directly to private universities.

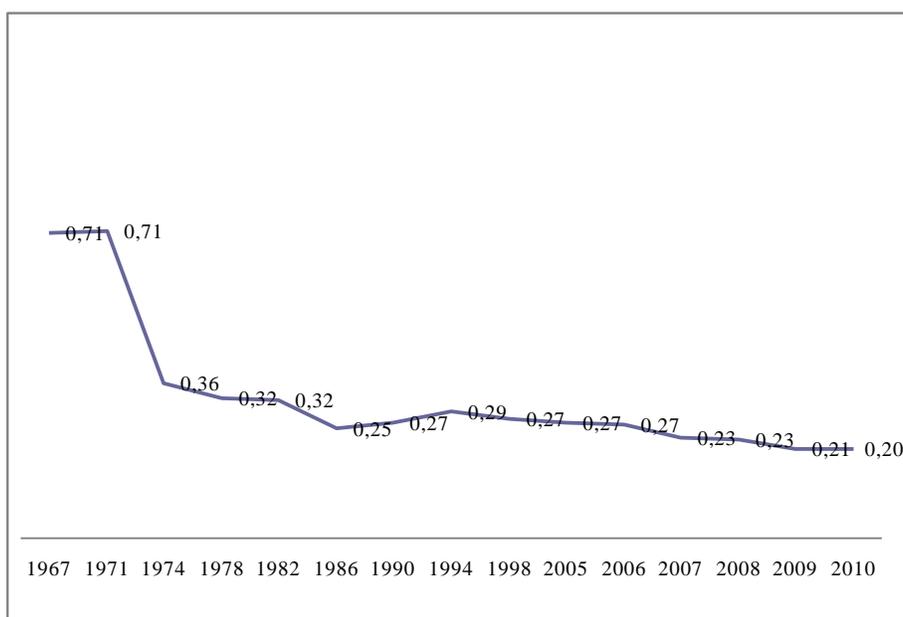


Figure 7.5: Proportion of students enrolling in CRUCH universities in each year.
Source: Compiled by the Author from (DEMRE, 2011)

7.1.4 Enrolment by CRUCH institutions, scores in PSU and secondary school of origin

In order to address the question of university preferences, DEMRE data was analysed for six enrolment cohorts, for the period 2005-to-2010. The analysis recorded the type of secondary school of origin of the new university students and the average scores in the PSU for mathematics and language, the disciplines in which the students enrolled. In general, the distribution of students enrolled according to their secondary school of origin did not vary considerably over the six-year period. In an attempt to provide an overview, Figure 7.6 shows the average number of students enrolled by each institution belonging to the CRUCH group, according to their secondary school of origin.

The outcomes from these national figures reveal that 37 percent came from public schools, 46 percent from subsidized schools and 17 percent from private schools. However, these students were strongly concentrated in two universities, Pontificia Universidad Catolica and the Universidad de Chile, both located in the Santiago metropolitan area. Both institutions combined enrol 50 percent of the all students from private secondary schools enrolled in CRUCH universities.

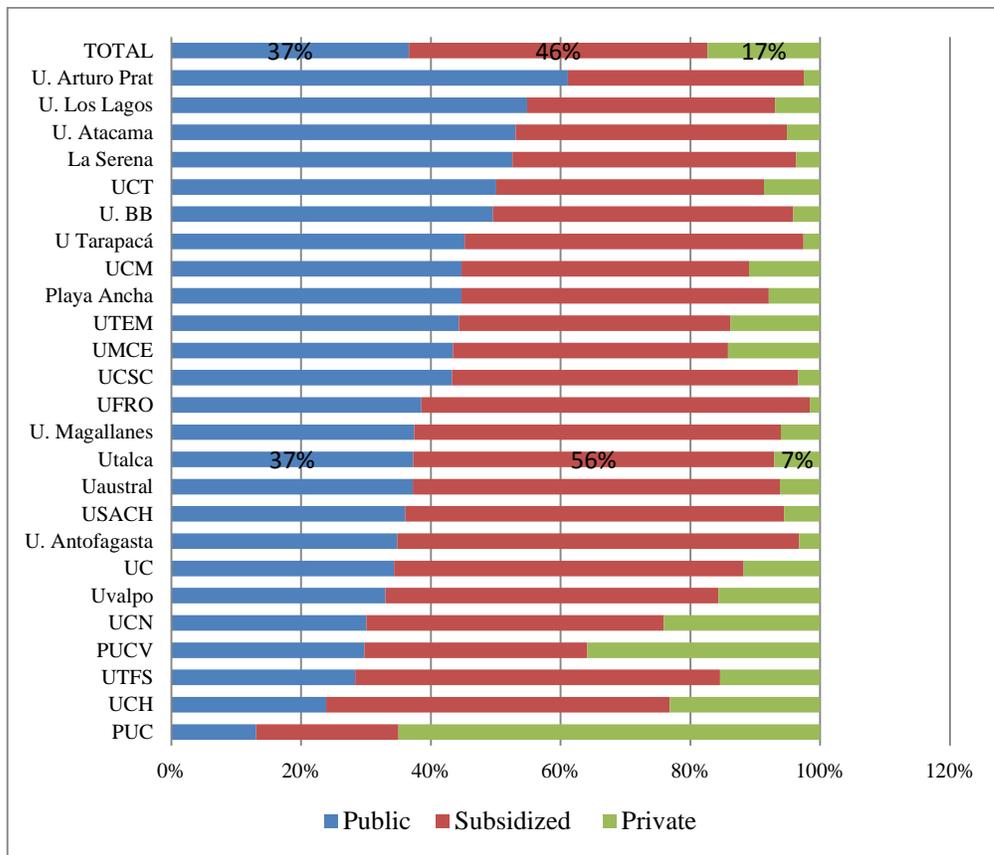


Figure 7.6: Percentage of students enrolled in CRUCH universities by secondary school of origin; schools are characterised by their source of funding – public, government-subsidised, or private.
 Source: Compiled by the Author from (DEMRE, 2011)

The composition of students enrolled in the Pontificia Universidad Católica de Chile reveal that 65 percent came from private secondary institutions and only 13 percent from public secondary institutions. Nevertheless, within this concentration, there are regional universities with a significant proportion of students coming from private secondary schools: for example, Universidad Católica de Valparaíso, with 36 percent; Universidad Católica del Norte, with 24 percent, and the University of Valparaíso with 16 percent. Complementing these percentages, the majority of these regional institutions enrol the majority of their students from public or subsidized schools.

7.2. Participation rates and their evolution by type of higher education institution

7.2.1 Evolution of participation rates

Chile has experienced an enormous growth in its higher education system. The change was driven largely by the adoption of a ‘market’ model encouraging private universities, and the introduction of a system of student fees and loans. These changes resulted in Chile’s existing international position as one of the countries with more private resources invested in higher education than other comparative nations (J. J. Brunner et al., 2005; PNUD, 2005).

In 1935, Chile had 6,283 students participating in higher education, representing 1.4 percent of the cohort group. In 1974 participation rates rose to 144,523 students, representing 16.4 percent of the cohort (Levy, 1986). This growth trend was interrupted between 1974 and 1981 revealing a participation rate of 10.2 percent. As Gonzalez & Aedo notes, “The military coup had an effect in higher education, decreasing participation rates from 11.8 percent in 1973 to 7.5 percent in the early 80’s. In qualitative terms, the control of the institutions and social sciences was reduced, transferring to independent research centres” (Gonzalez & Aedo, 2004, p. 65). After the 1981 reforms, and the creation of private institutions, participation rates as well as the number of students rose considerably.

From this date forward, with the introduction of private universities, the government anticipated a greater growth in the number of institutions, the number of students, and in participation rates. However, such growth started to be shaped, paradoxically not before 1990, with the recovery of the democracy. The graph in Figure 7.7 below shows the number of students participating in higher education between 1935 and 2010, and as discussed previously, the number of students tripled after 1990.

In 1981, 118,000 students attended higher education institutions in Chile and were distributed across two state universities, the Universidad de Chile and the Universidad Técnica del Estado, as well as six private universities. The latter six, established as non-profit organizations and recognized by the state as public institutions, were eligible to receive

public funding. All eight universities, both public and non-profit private, were organized within the Consejo de Rectores (Council of Rectors) of the Chilean Universities (CRUCH).

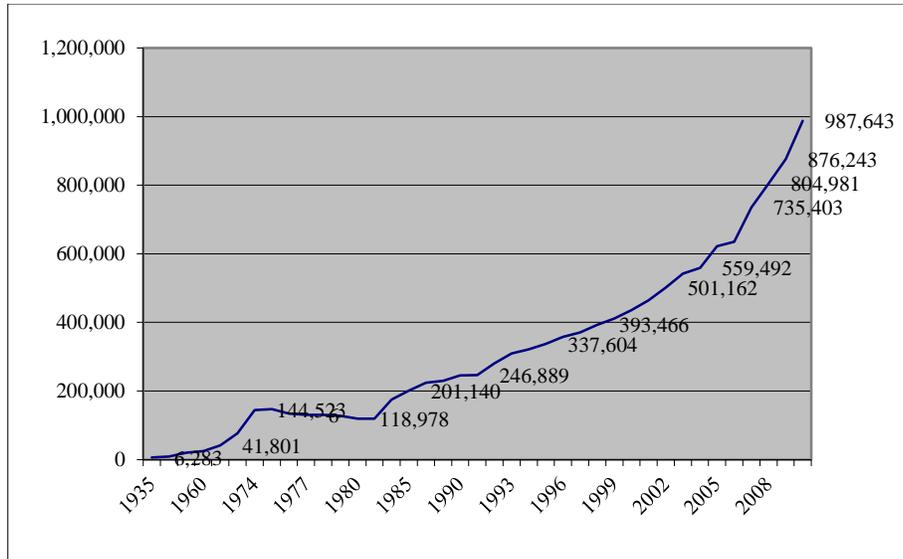


Figure 7.7: Evolution of students in higher education.
Source: (Levy, 1986; MINEDUC, 2011a)

The reforms, as explained earlier, divided higher education into different levels, professional and technical, and allowed the foundation of private universities without public funding and outside the orbit of the CRUCH group. This organization of institutions gave rise to a system with technical institutions, private universities and public universities. In 1990, still under the military government, the constitutional Education Act (Educación, 1990), was passed. It recognized different levels of higher education; that is, universities, professional institutes and technical training centres. Universities were given approval to award technical diplomas, professional and academic degrees, such as Bachelors, Masters and Doctorates. Professional institutes were approved to award technical diplomas and professional degrees but the latter were distinct from academic degrees. And, finally, technical training centres were given approval to award technical diplomas. Using the *International Standard Classification of Education* (Unesco, 1997), universities offer programs level 5A and 6; professional institutes offer programs level 5A and 5B and technical training centres offer programs level 5B. In summary:

- Level 6 programmes are tertiary programmes which lead to the award of an advanced research qualification. The programmes are therefore devoted to advanced study and original research and are not based on course-work only. They typically require the submission of a thesis or dissertation of publishable quality which is the product of original research and represents a significant contribution to knowledge. They prepares graduates for faculty posts in institutions offering Level 5A programmes, as well as research posts in government, industry, etc. These are typically postgraduate programmes.
- Level 5A programmes are tertiary programmes that are predominantly based on theory and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements. These are typically degrees.
- Level 5B programmes are practically oriented/occupationally specific and mainly designed for participants to acquire the practical skills, and know-how needed for employment in a particular occupation or trade or class of occupations or trades - the successful completion of which usually provides the participants with a labour-market relevant qualification.

The graph in Figure 7.8 below shows the distribution of students by type of institution between 1983 and 2010.

As can be observed, the growth of higher education coincided with the advent of democratic government i.e. after 1990. The number of students within public universities has subsequently grown more slowly than the number of students in private universities, and in 2010, the private student numbers exceeded those enrolled in public universities. In terms of technical education supplied by professional institutes and technical training centres, there was significant growth between 1981 and 1992, resulting in the graduation of 42 percent of all higher education students during that period. The following years saw a considerable

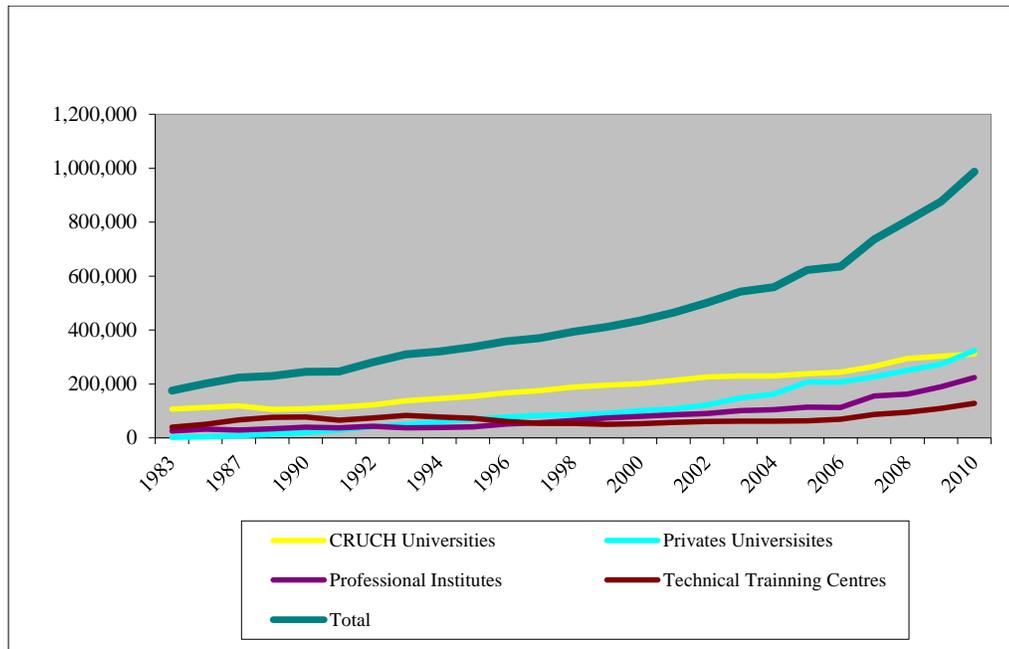


Figure 7.8: Evolution of students in higher education by type of institution 1983-2010. Source: MINEDUC 2011.

decline in technical education which amounted to 29 percent in 2006 with 183,000 students attending that type of higher education. This decline in student numbers shows the expectation of families seeking access to universities, rather than technical education, accompanied by the social prestige of degree level 5A qualifications over 5B. A United Nations Program Development report states “This progressive demand in part responds to the growth experienced by secondary education, but also to the expectation of families about study in a university, as a social mobility driver” (PNUD, 2005, p. 18). Furthermore lack of governmental support for this type of tertiary instruction, which changed after 2006 as explained later on this chapter. In policy terms the desire of families to obtain a university level degree was reinforced by the lack of financial support for students undertaking a technical programme.

In Chile, those with eight years of education, (including primary education), receive four times less salary or income than those who have attended seventeen years of study (CASEN

2006). Whereas in countries such as Germany and Italy, which have similar participation rates, the income gap between those having upper secondary education and those having tertiary education is less than two times in the case of Germany, and almost two times in the case of Italy (OECD, 2008).

From 2007 onwards, it is possible to identify a significant change in the growth of higher education, with this growth concentrated mainly among students in private universities, professional institutes and technical training centres. As has been explained, an important element in driving this growth is attributed to the new funding system implemented by government, where a student loan is allocated by the private market but guaranteed by the government (explained in depth later in this chapter). With that policy, the number of students attending higher education rose 34 percent over a three-year period; 42 percent attended private universities, 43 percent were in professional institutes, 48 percent in technical training centres, but only 17 percent enrolled in CRUCH Universities.

Participation rates of the cohort group are considered by measuring gross participation and net participation rates. According to traditional measures of participation rates in education, the gross participation rate refers to all students in higher education divided by the total age group cohort between 18 and 24 years of age. The net participation rate refers to all students attending higher education between 18 and 24 years of age, divided by all inhabitants of the same age group (Mideplan, 2009). Thus, the gross participation rate in Chile in 1981 was 10.2 percent and 15.6 percent in 1990, rising to 22.7 percent in 1994 and increasing again to 39.7 percent in 2009. Regarding the net participation rate, this increased from 12.8 percent in 1990, to 29.1 percent in 2009.(Mideplan, 2009)

7.2.2 Evolution of students and participation rates by socioeconomic group

In accordance with the Chilean Government's stated commitment to quality and equity, the question arises: "To what extent has this growth benefited lower socioeconomic groups?" The following table shows participation rates by socioeconomic group between 1990 and 2009:

Table 7.2: Evolution of participation rates in Higher Education by quintile of income

Quintile	1990	1996	1998	2000	2003	2006	2009	2011
I	3.8%	6.9%	7.3%	8.1%	12.4%	17.3%	20.3%	26.9%
II	6.5%	12.6%	11.7%	15.3%	19.1%	22.5%	27.3%	34.2%
III	10.8%	18.4%	20.9%	28.4%	32.1%	32.1%	33.2%	41.4%
IV	20.4%	30.7%	37.0%	43.0%	48.4%	49.2%	48.3%	56.6%
V	37.7%	60.6%	71.2%	80.2%	94.7%	80.4%	82.7%	88.5%
National	14.0%	24.3%	27.3%	30.4%	37.5%	37.7%	39.7%	47.1%

Source: Calculated by the Author from (D. S. MIDEPLAN, 2011)

Throughout the 20-year period 1990-2011, participation rates have grown more than three times, from 14 percent of the cohort group in 1990 to 47.1 percent in 2011. When classified according to socioeconomic groups, the students in the fifth quintile have achieved the highest participation rates. The distribution of rates whereby the upper group have retained the highest rates whereas the lower quintiles have maintained the lowest rates has persisted, but the spread has narrowed. Over the past 20 years, participation rates have grown in an inverse relationship to the socioeconomic classification, with the first quintile growing 7.1 times; the second 5.2 times; the third 3.8 times; the fourth quintile growing 2.7times;; and the fifth, (that is the upper socioeconomic group) by 2.3 times. This corresponds with governmental statements, supporting the provision of greater opportunities for the lower socioeconomic groups.

Thus, there has been an improvement in participation rates, especially for lower socioeconomic groups, and yet a significant gap remains between lower and upper quintiles. While 89 percent of the fifth quintile is participating in higher education, the participation rate for the first quintile is only 27 percent, more than three times less than the fifth quintile percentage.

The next question concerns the type of institution that students attend. As demonstrated earlier, the Chilean higher education system, shaped by the 1981 reforms, recognizes public

universities, private universities and technical institutes. The technical institutes are developed as so-called Professional Institutes and Technical Training Centres, but they effectively did not receive public funding. Table 7.3 below shows the distribution of students attending higher education in those institutions that receive public funding, i.e. CRUCH institutions:

Table 7.3: Socioeconomic distribution of students attending CRUCH universities as a percentage of all students for that quintile in higher education

Quintile	1990	1996	1998	2000	2003	2006	2009	2011
I	54%	62%	58%	55%	45%	50%	37%	33.5%
II	47%	61%	53%	49%	52%	44%	35%	29.4%
III	47%	62%	51%	55%	47%	41%	33%	27.5%
IV	46%	50%	51%	47%	46%	40%	37%	29.4%
V	53%	54%	48%	47%	43%	36%	33%	30.7%
National	49%	56%	50%	49%	46%	40%	34%	29.8%

Source: Calculated by the Author from CASEN (D. S. MIDEPLAN, 2011)

In 1990, 49 percent of the students in higher education belonged to CRUCH universities. That proportion rose to 56 percent in 1996, but has subsequently decreased to 34 percent in 2009 and 29.8 percent in 2011. These changes can be explained by the considerable growth experienced by the private system, displacing public institutions in terms of the quantity of students. When it comes to the distribution by socioeconomic group, the situation has not changed considerably, and interestingly, public institutions enrol fewer students from lower socioeconomic groups. Whereas 54 percent and 47 percent of students in higher education coming from the first and second quintiles respectively in 1990 studied in the public system, the figures in 2009 show that 37 percent of the first quintile and 35 percent of the second quintile attend public universities. Within the private system, consisting of private universities and technical institutions, it has been possible to obtain data only since 2003, because, before that date, the national socioeconomic survey, divided between subsidized and non-subsidized higher education, did not record the distribution within the private

system. Thus, with available data, the distribution of the socioeconomic groups in the private system is shown in table 7.4:

Table 7.4: Distribution of students in the private Higher Education system, according to their socioeconomic situation, as a percentage of all students for that quintile in higher education

Quintile	Institution	1990	2003	2006	2009	2011
I	University	18.2%	19.5%	21.3%	24.5%	29.4%
	PI	0.0%	20.7%	21.8%	31.4%	31.4%
	TTC	28.0%	14.4%	6.7%	7.0%	5.7%
II	University	25.1%	13.4%	22.1%	27.9%	34.1%
	PI	0.0%	22.6%	26.3%	31.7%	30.7%
	TTC	27.9%	12.4%	7.5%	5.5%	5.8%
III	University	27.3%	19.1%	23.4%	30.9%	38.0%
	PI	0.0%	28.9%	28.9%	31.3%	29.4%
	TTC	26.1%	9.2%	7.1%	5.1%	5.1%
IV	University	29.4%	25.5%	32.4%	34.7%	40.8%
	PI	0.0%	24.0%	22.8%	24.3%	25.4%
	TTC	24.2%	4.2%	4.8%	4.1%	4.3%
V	University	35.7%	38.5%	42.5%	50.4%	50.5%
	PI	0.0%	15.6%	17.2%	12.2%	16.0%
	TTC	11.6%	3.0%	4.3%	4.7%	2.8%

Source: Calculated by the Author from CASEN (D. S. MIDEPLAN, 2011)

In 1990, 54 percent of the students coming from the first quintile attended public institutions with 46 percent attending universities and other institutions in the private system. The distribution in the latter category was 18.2 percent in private universities and 28 percent in technical programmes. Over recent years, the private system has been increasing its share of higher education. This trend has been reinforced since 2006-2007, with the advent of student loans, aimed at funding students in private universities. These funds are managed by the Chilean banking system and sponsored by the government. The government-sponsored loans go to less well-off groups who could not meet the requirements established by the banks for loans aimed to support higher education costs. The loan process has made it much easier for students from lower and medium socioeconomic groups to participate in technical education as well as facilitating greater participation by these groups at the university level.

Nevertheless, the greatest growth and participation in university education remains strongly concentrated in the upper socioeconomic groups.

7.2.3 Evolution of socioeconomic group within the higher education institutions

To this point, the growth of higher education in Chile has been examined by the number of students and the type of institution, as well as participation rates according to socioeconomic group and type of institution. Although participation rates for lower and medium socioeconomic groups have increased they remain far below the participation rates observed among the upper quintile groups. The private system contains more students, from both low and high socioeconomic quintiles with table 7.5 below showing the distribution of students attending private universities since 1998.

Table 7.5: Distribution of students in private universities by socioeconomic group

	1998	2000	2003	2006	2009	2011
I	4%	5.4%	4.8%	5.7%	6.5%	8.0%
II	9%	11.5%	5.7%	8.8%	11.6%	14.1%
III	16%	18.0%	12.7%	13.4%	15.0%	18.2%
IV	27%	27.9%	24.3%	28.1%	21.8%	25.0%
V	43%	37.0%	52.5%	43.9%	45.2%	34.7%
Total	100%	100%	100%	100%	100%	100%

Source: Calculated by the Author from CASEN (D. S. MIDEPLAN, 2011)

In 2010 the data indicate that the number of students attending private universities is greater than those attending CRUCH institutions. In fact, in that year, there were 310,890 students in CRUCH institutions, versus 676,753 in the private sector, composed of 323,843 in private universities, 224,339 in professional institutes and 128,571 in technical training centres (SIES, 2011). Tables 7.3 and 7.4 reveal that in 2011 30 percent of students in higher education from the 5th quintile attended CRUCH universities, compared to 50 percent who were private university students and thus it can be seen that there were approximately 67 percent more students from the highest upper socioeconomic groups enrolled in private universities than in the public system. Table 7.9 illustrates the distribution of students by socioeconomic group in each type of institution in 2011.

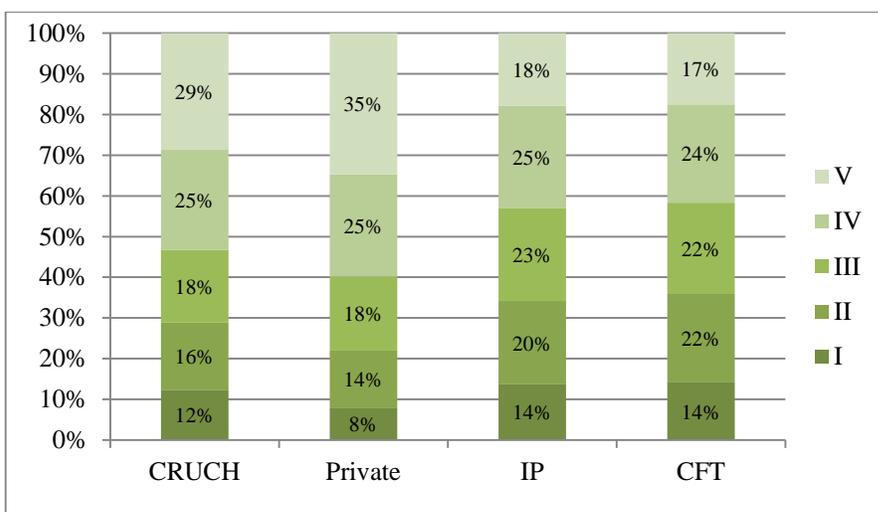


Figure 7.9: Distribution of students by quintile of income in each type of institution 2011
 Source: Calculated by the Author from CASEN (D. S. MIDEPLAN, 2011)

As can be seen private universities maintain the highest proportion of students from the most affluent quintiles, more so than other institutions, followed by CRUCH universities. Similarly both types of institutions comprise fewer students from quintiles one and two than IP and CFT. While in the CRUCH group, of all students attending these institutions 28 percent belong to quintile one and two (12 percent and 16 percent respectively); for private universities, the figure is 22 percent (8 percent and 14 percent for first and second quintiles respectively). IP and CFT institutions exhibit a very similar distribution, concentrating more students from the first and second quintiles; 34 percent in the case of IP and 36 percent in the case of CFTs.

7.2.4 Regional distribution of higher education participation rates

Chile is divided into 15 regions, including the creation of two new regions in 2005. There are main campuses of CRUCH universities in all regions except in the sixth and the eleventh regions. In these two regions, there are branches of CRUCH universities, with the Universidad Técnica Federico Santa María in the sixth region, and in the eleventh there is a branch of Universidad Austral. Although those two regions do not possess their own public

universities, they do host branches of larger universities, and in that respect it is reasonable to assert that there are public universities distributed throughout the country.

Regarding the overall distribution of private higher education institutions, there are 37 private universities, 45 professional institutes and 115 technical training centres, totalling 197 institutions. Branches of private institutions are distributed throughout the country, with private universities alone accounting for more than 100 of these. Therefore, the higher education system has been shaped in all regions by private and public institutions of all kinds.

Using data available for CRUCH universities and enrolment intakes spanning 2004 to 2010 it is possible to identify the regional character of those universities, measured by the number of students enrolled whose origin is from within the same region as the main university campus. The regional CRUCH universities enrol a substantial concentration of students coming from the same region. In fact for 17 of the 25 universities more than 70 percent of their students were from the same region over the period 2004 to 2010. The Universidad Austral, from 2004 to 2007, enrolled more than 70 percent local students, but the region in which the students were domiciled was divided into two leading to an apparent drop of 40 percent from 2008 forward. It can be seen that for the CRUCH universities from Valparaíso (i.e. the fifth region), plus Universidad Católica del Norte (in the second region) more than 40 percent of their enrolment comes from other regions. In the case of Universidad Católica de Valparaíso (PUCV), 59.7 percent of the students have been enrolled from the fifth region, a further 13 percent from the metropolitan area of Santiago, and 9.8 percent from the sixth region. The Universidad Técnica Federico Santa María, enrolls 35.5 percent of its students from the fifth region, 24 percent coming from Santiago and 17.5 percent from region eight.

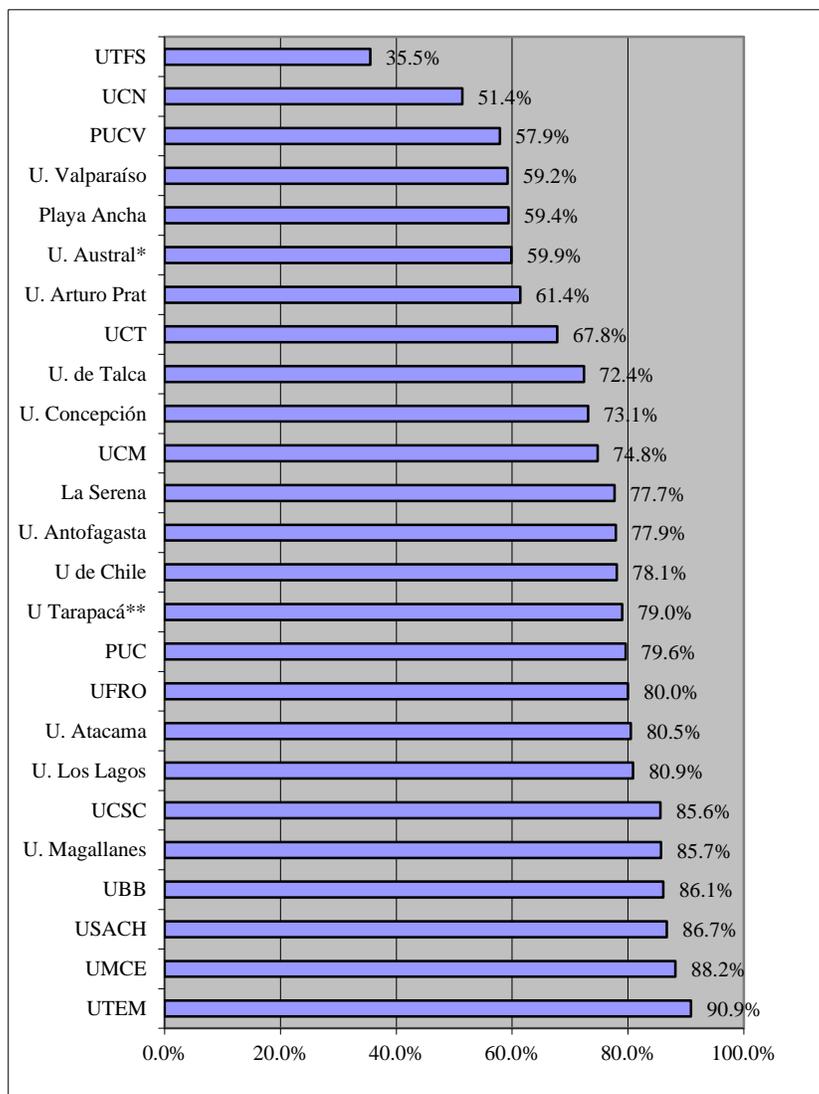


Figure 7.10: Average percentage of students enrolled by CRUCH universities coming from the region of the main university campus (2004-2010).
Source: Compiled by the Author from (DEMRE, 2011).

Having established that CRUCH universities are spread throughout the country, as well as private universities, professional institutes and technical training centres, a task of particular relevance for this thesis is to examine participation rates by region. For the purpose of considering trends and conducting analysis, the administrative division of Chile is taken to be that existing prior to the creation of the two new regions. The first region, for example, was divided into two, the Region of Tarapaca and Arica y Parinacota Region, and from the tenth region, Los Rios was created from the Region of Los Lago. For this thesis the division

into 13 regions of Chile has been maintained in order to preserve continuity and comparability of data over time.

Using data from the National Socioeconomic Survey, the table below identifies participation rates by region since 1990 to 2011 as follow:

Table 7.6.: Participation rates in higher education by region 1990-2011

Region	1990	2000	2006	2011
I	13.9%	28.8%	33.7%	41.3%
II	16.1%	31.6%	43.9%	35.5%
III	6.8%	18.0%	29.7%	30.8%
IV	12.1%	30.5%	29.7%	40.7%
V	20.2%	31.8%	41.9%	58.7%
VI	5.3%	22.3%	31.3%	44.1%
VII	6.6%	21.6%	26.7%	34.0%
VIII	10.4%	29.9%	38.8%	44.5%
IX	9.6%	28.2%	28.4%	37.3%
X	9.9%	20.1%	30.9%	37.2%
XI	2.1%	19.4%	27.2%	31.8%
XII	7.4%	32.9%	53.1%	62.6%
R.M.	17.7%	35.1%	41.8%	52.5%
Total	14.0%	30.4%	37.7%	47.1%

Source: Calculated by the author from CASEN (D. S. MIDEPLAN, 2011)

Higher education in the regions has undergone significant development; campuses of private institutions can be found throughout the country, and CRUCH universities are represented in all but the Sixth and the Aisen regions. However, the government program of President Bachelet in 2014 anticipated the creation of state universities and technical training centres in both regions.

Despite growth in the national participation rate in higher education by about 45 percent at the national level, this is mainly supported by growth in the larger regions, ie Valparaiso (58.7 percent), Concepcion (44.5 percent) and the Metropolitan area (52.5 percent), where the largest number of both private and CRUCH institutions are situated. In the first of these, ie Valparaiso there are four CRUCH universities; in Concepcion three, and in Santiago five.

The latter group includes the largest, oldest institutions with the highest levels of resources and university accreditation. Also notable is the fact that in the Second region (Antofagasta) participation actually fell over 2006, settling at a level comparable to that of the seventh Maule region (this is discussed in detail in the case study), the third region and the Aisen region, with participation rates of around 35 percent. The latter, at the southern tip of Chile, is explained by geographical remoteness, difficulty of access and a low population compared with other regions. For these reasons, as has already been mentioned, the creation of an institution of higher education institutions by the state has been proposed to overcome the evident reluctance of private providers to settle in the area.

The foregoing gives rise to questions which relate to the focus of this thesis. The first question that arises is “To what extent is growth in higher education in the regions with the highest participation rates benefiting lower socioeconomic sectors?” and further, “What factors could explain the lower participation rates observed in the second and seventh regions?” A critical examination of these issues follows.

In the case of the metropolitan area of Santiago, there are 6,061,185 inhabitants, representing 40 percent of the total population of Chile (Subdere, 2014). The metropolitan area constitutes one of the regions with the highest rates of participation in higher education. According to CASEN 2011, and as shown in the previous table 7.5, by the year 2011 participation had already exceeded the 50 percent mark. In terms of participation by socioeconomic group, the following table shows the evolution between 2003 and 2011:

Table 7.7: Participation rates in higher education by quintile in Metropolitan Region 2003-2011

Institution/ Quintile	2003					2011				
	I	II	III	IV	V	I	II	III	IV	V
CRUCH	4,2%	6,9%	11,4%	16,9%	34,5%	5,5%	7,1%	7,6%	11,7%	24,0%
Private U.	3,6%	3,6%	6,9%	14,3%	45,9%	8,1%	12,0%	17,6%	26,1%	51,5%
IP	2,9%	4,5%	9,0%	11,8%	15,6%	8,3%	11,9%	15,0%	18,4%	17,1%
CFT	2,2%	3,5%	2,3%	1,9%	2,8%	0,2%	1,4%	2,2%	3,1%	2,9%
Total	13,0%	18,5%	29,6%	44,9%	98,8%	22,1%	32,5%	42,5%	59,3%	95,5%

Source: Calculated from the Author from CASEN (D. S. MIDEPLAN, 2011)

Clearly the participation rates of quintiles I and II, and also III, increased significantly between 2003 and 2011. Notably, the participation rate of the fifth quintile in 2003 already exceeded 95 percent.

Despite the growth in participation levels in higher education, the situation in the metropolitan region resembles that pertaining at the national level, ie although quintiles I and II have progressed strongly, there remains a significant gap between participation rates for these quintiles and that of the fifth quintile. This gap applies for the fourth quintile as well, which is very important. While the first quintile reached a level of participation of 22 percent in 2011, the fifth exceeds 95 percent, a gap greater than four times; a difference of three times applies between the fifth and the second quintile.

Interestingly, the figures show that the CRUCH universities are not the institutions that have supported the growth in participation in higher education in Chile. In 2003, of the 13 percent participation by the first quintile 32 percent attended CRUCH universities, while in 2011 (when 22 percent of the first quintile was participating), only 25 percent of the group chose to attend CRUCH universities, with the remaining 73 percent choosing private universities and professional institutes. A similar situation pertains for the second and third quintiles.

With regard to the fourth and fifth quintiles, participation in the CRUCH universities decreased, also in favour of private universities and professional institutes. However in the case of the fifth quintile, the decline in participation in the CRUCH universities is mainly explained by a shift to private universities. While in 2003 the participation of this group was already significant in private universities (45.9 percent), by 2011 it increased to over 50 percent reducing participation at CRUCH universities from 34 percent to 24 percent. Thus the group with the greater resources can be seen to have moved from traditional universities to private universities between 2003 and 2011.

7.3. Academic performance of the Chilean higher education system (drop out and completion time)

According to the United Nations Development Program (PNUD, 2005), in higher education, equity means non-discrimination in access rather than guaranteed access for the whole population. A major focus for governmental efforts has been improving access to the system, especially by allocating loans and scholarships for students with academic credentials from the lower socioeconomic groups. Public authorities have declared that unaffordability should not be a rationale for excluding good students from the system. Even though relevant criteria may exist for facilitating equal opportunities through financing mechanisms, it is essential that other elements are examined in addressing the issue of equity in higher education. For example, it is necessary to consider the teaching-learning process and higher education outcomes, as well as the changing parameters of the system and their implications for both process and outcomes. (PNUD, 2005). As Donoso & Cansino (2007) have suggested, the inclusion of new socioeconomic groups represents a major challenge for public policy, since many of these students are the first generation of their families to enter higher education, and as a consequence they lack the cultural capital of the “university world”. Conversely, their needs and aspirations based on different cultural and social traditions are “unknown” by the tertiary institutions in which they are applying to enrol.

The current section analyzes the academic outcomes achieved by this new group of students in higher education over the 10-year period, 2000-2010. Using available data from a variety of secondary information sources it is possible to examine three important variables, namely: how many of those who gained access dropped out during the first or second year of their higher education programs; how many of these students completed their programs; and how many years did they need to complete the courses in which they were enrolled. Finally, this chapter analyzes trends in the employment of professionals over this same 10-year period.

7.3.1 Retention rates

Retention rates are analyzed herein as the number of students of a determinate cohort that take courses according to the annual schedule, divided by the number of students in the whole

cohort. Those students who drop out or do not take courses are eliminated. The retention rate figure represents the percentage of students that continue their studies within a higher education institution (CNE, 2011).

Using data from The Ministry of Education, specifically Futuro Laboral, (Mineduc, 2011b), first and second year retention rates are shown below for the 2008 enrolment cohort. Universities (both private and CRUCH) provide data for 97 programs; Professional Institutes provide data for 45 programs and the Technical Training Centers, 24 programs.

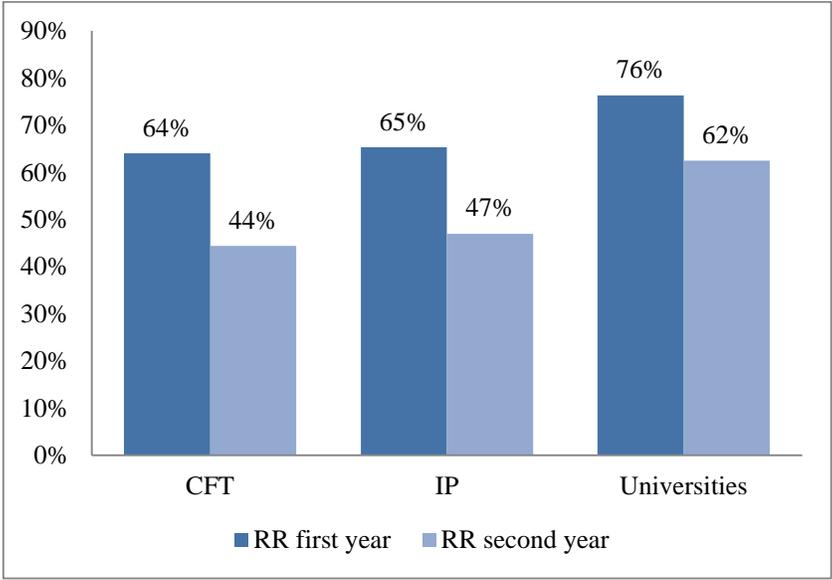


Figure 7.11: Retention rates of cohort 2008, by level of higher education.
Source: Calculated by the Author from Futuro Laboral (Mineduc, 2011b)

In order to establish a benchmark in retention rates, the results recorded by the Consejo Superior de Educación have been examined. These data identify the first, second and third year retention rates for each form of higher education and for cohorts 2004, 2005 and 2006. The retention rates are illustrated in Table 7.8.

Table 7.8: Retention rates by type of institution cohorts 2004-2005-2006

Type of institution	Cohort	Retention rates		
		First year	Second year	Third year
Universities	2004	79%	68%	60%
	2005	80%	68%	
	2006	82%		
Professional Institutes	2004	62%	47%	40%
	2005	60%	45%	
	2006	52%		
Technical Training Centre	2004	67%	53%	48%
	2005	52%	40%	
	2006	62%		

Source: Calculated by the Author from Indices database (CNE, 2012)

When comparing data shown in Figure 7.11 with that recorded in Table 7.8 by type of higher education institution, it is possible to observe a drop in the retention rates for CFT, from 67 percent in 2004 to 62 percent in the case of cohort 2006, and a slight recuperation for the 2008 cohort. According to the Consejo Nacional de Educación (CNE, 2011), in 2005 the TTC enrolled 33,815 students, with 17,584 continuing on to the second year. In 2006, that is, in the second year of their studies, 60 percent of them dropped out, which means 7,033 students (fewer than half) continued to the third year. Therefore, by 2007 only 20 percent of the students who initially enrolled in Technical Training Centers remained in the system. For Professional Institutes, in the same enrollment year, (2005), 51,043 students were enrolled, of which 30,626 remained or were enrolled in the second year with 22,969 continuing to the third year. In others words only 45 percent of students who initially enrolled in Professional Institutes continued on into the third year of their studies.

The retention rates were comparatively better in the universities, although first-year retention fell between 2005 and 2008, from 80 percent to 76 percent. In 2005, 105,887 students were enrolled in the first year of university (both private and CRUCH universities), dropping to 84,710 in the second year and 57,603 in the third year. This means that only 54 percent of the students who originally enrolled in 2005 were still studying in the third year of their university education. Futuro Laboral (www.futurolaboral.cl), reports that for the 2008

student cohort there were significant differences in retention between private and public (CRUCH) universities (Table 7.9).

Table 7.9: Retention rates by type of university, cohort of enrolment 2008

	Retention rates			
	First yr	Sd.	Second yr	Sd
Public Universities	86%	8,5%	78%	12.3%
Private Universities	77%	10,2%	63%	13.0%

Source: Calculated by the Author from Futuro Laboral (Mineduc, 2011b).

When comparing first and second year enrolment it becomes evident that CRUCH universities retain more students than private universities. Research conducted by the Economics Department of the Universidad de Chile (Microdatos, 2008), identified three main reasons for students dropping out of university during the first year. This study concluded that economic problems, academic performance and the lack of vocational clarity among the students could explain an important proportion of those dropping out. Moreover, these three dimensions reinforce the gap in retention rates between CRUCH and private universities. As previously explained, the participation of lower socioeconomic groups in higher education has grown significantly over the past two decades, and even though government has increased loans and provided scholarships in CRUCH universities, these groups face high opportunity costs when studying and not working, with obvious examples being accommodation and transport costs. In the case of private universities, where students have less access to cheaper loans and scholarships, the impact on students from low socioeconomic groups explains at least in part, a greater drop-out rate than from CRUCH universities.

In terms of academic performance, many private universities enroll students without an academic requirement such as scores recorded in the PSU. Although this test is a compulsory requirement in the CRUCH universities, other tertiary institutions continue enrolling students with low scores and relatively weak academic backgrounds. Finally, vocational clarity can

be described as confusion among students as to their future careers and the relevance of the courses in which they have enrolled. This confusion or lack of vocational direction could be explained as being enrolled in a program with lower PSU requirement scores, or lacking information at the time of application and enrolment. These three factors, financial problems, low test scores and poor academic preparation, and confusion about vocation, are more prevalent among students in private universities and in lower socioeconomic groups.

7.3.2 *Completion time*

Completion times refer to the actual time that it takes students to complete the educational programs in which they have enrolled. Even though significant difficulties exist in the availability of statistical information in Chile, thereby making it difficult to obtain reliable historical data (OECD & IBRD, 2009; Zapata & Tejada, 2010), there are some studies that provide an approximation of completion times. In more recent years, universities and the federal government, through the Ministry of Education, have started to collect and analyze this kind of data.

One study estimated the percentage of students completing their tertiary education within the official time frame (González, 2006). Five cohorts of enrolments were selected, from 1998 to 2002, revealing that on average 8.6 percent of the students completed their programs within the official time frame. For the 1998 cohort, the national average was 7.9 percent, improving slightly to 9.4 percent for the 2002 cohort. For students enrolled in 2002, only 9.4 percent of them completed their studies within the allocated time. Comparing CRUCH and private universities, Gonzalez identifies CRUCH universities as having a minor advantage. The 1998 cohort of private universities recorded 5.4 percent of their students graduating on time, while the CRUCH universities achieved 8.9 percent. For the 2002 cohort, the rate was 7.6 percent for the private universities compared with 10.4 percent for those in the CRUCH group.

The Ministry of Education through Futuro Laboral, generates information about 44 undergraduate programs taught in public as well as private institutions. Although not all programs offered in the country are considered, and many institutions do not report all data,

the information is considered important and can give a good approximation as shown in the following table:

Table 7.10: Completion times for graduates in 2009, measured with reference to the official completion time.

Type of institution	Graduates to 2009		
	Average completion time	Standard Deviation	Number of programmes
Universities	1.35	0.21	339
CRUCH Universities	1.36	0.22	238
Private Universities	1.33	0.19	101
Professional Institutes (IP)	1.35	0.21	31
Technical Training Centres (CFT)	1.42	0.16	33

Source: Calculated by the Author from www.futurolaboral.cl (Mineduc, 2011b)

It can be concluded that in the universities, both private and public (CRUCH), students who graduated in 2009 took 35 percent more time than the official time-frame to complete their studies. The percentage was slightly greater in CRUCH universities where studies lasted 36 percent longer than the official time frame.

In terms of curriculum planning, the official time frame needed for completion of undergraduate programs level 5B and 5A (Unesco, 1997) is longer in Chile when compared with OECD countries. The differences are even greater when comparisons are made with actual completion times. In Germany for example programs of level 5A are obtained in six or seven semesters; in Finland the time-frame is set at seven semesters. By comparison the duration in Chile varies from 8-to-12 semesters. When these official time-frames are considered alongside actual completion times as outlined in this chapter, it means that a program of 12 semesters on average will require 16 semesters for actual completion.

The regulations in Chile state that there are 18 programs of Level 5A that can only be supplied by universities, either private or public. These Level 5A programs include: law, architecture, biochemistry, dentistry, agronomy, civil engineering, business, forestry engineering, medical

doctor, veterinary medicine, psychology, pharmacy chemical, primary teaching, secondary teaching, special education, childhood education, journalism and social work. The data base of the Ministry of Education contains summary information about 14 of these programs. Despite data limitations it is possible to construct a comparative profile estimating actual completion times for significant professional programs. This comparative profile is shown in table 7.11:

Table 7.11: Completion time in semesters by program for graduates in 2009

	Nominal time	Real Time	Ratio	Cases
Law	10,53	18,15	1,73	1.383
Architecture	11,83	16,78	1,42	867
Dentistry	11,75	14,08	1,20	268
Agronomy	10,22	16,49	1,61	687
Civil Engineering	12,00	16,76	1,40	629
Medicine	13,82	15,15	1,10	900
Veterinary	10,33	17,07	1,66	537
Psychology	10,77	13,75	1,28	2.237
Chemical Sciences and Pharmacy	10,80	16,88	1,23	272
Primary School Teacher	9,14	10,41	1,15	4.715
Special Education	9,40	11,10	1,18	639
Early Childhood Education	8,82	11,12	1,26	1.418
Journalism	10,24	13,69	1,34	965
Social Work	9,87	12,17	1,23	792

Source: Calculated by the Author from (Mineduc, 2011b)

In addition, a recent study by the Ministry of Education (Rolando, Salamanca, & Rubilar, 2010), examined those who graduated in 2007 in the 18 programs that can only be taught by universities and considered the same indicators included in table 7.11 above (which relates to those graduating in 2009). With 25,666 cases considered for those who graduated in 2007, and 16,309 cases for those who graduated in 2009, it is possible to observe an overall trend toward greater time required for the successful completion of programs. In 2007, the highest ratio is recorded by Forestry Engineering, which on average required 70 percent more than the nominal time estimated (the data for that program is not available in table 7.11). The

second highest ratio was law, with 1,838 cases in 2007 showing an indicator of 1.6 which increased for those graduating in 2009, with the highest ratio in that year of 1.73 based on 1,383 cases in the sample. The third highest ratio in 2007 was Veterinary Medicine with 1.66, which was maintained through 2009 with 1.64. The veterinary program takes around 65 percent more than the nominal time frame to complete. On the other hand, programs that were completed in closer to the nominal time in 2007 were medicine (1.1), primary school teaching (1.16) and dentistry (1.17). In 2009 the situation remained relatively constant with the lowest rate being medicine (1.1), primary school teaching (1.15), special education (1.18) and dentistry (1.2).

7.4. Graduation and employment performance

7.4.1 Graduation

Thus far this chapter has examined dropout rates as well as actual completion times in higher education in Chile. In order to continue the analysis of academic performance, it is necessary to analyze information regarding the students who enroll and successfully complete their programs. In the first section of this current chapter the retention rates for the first, second and third academic years were analysed. Nevertheless, many programs, and especially those registered as Level 5A programs, have a longer completion time. Thus, it is important to know what happens to those students who continue within the system after the third year and finally complete their programs. As discussed earlier, there is a problem with the availability of data. Nevertheless there are some studies that provide information such as dropout rates in higher education in Latin America (González, 2006) or estimates made by the Ministry of Education. In addition, data from the Universidad Católica del Maule will be analyzed as a case study to provide additional insights. According to the figures provided by González, on average from 1998 to 2002, the efficiency in completion rates, including both private and CRUCH universities was 46.3 percent; the lowest score was obtained by recently-established private universities with 37.5 percent, whereas the CRUCH universities achieved 50 percent. This is shown in table 7.12:

Table 7.12: Graduation rates in Chile 1998-2002.

Type of institution	Percentage by year					
	1998	1999	2000	2001	2002	Avg.
VCC Universities	46.1	48.3	49.4	50.3	56	50
Private Universities	26.7	32.2	43.3	42.5	42.3	37.4
System	39.1	42.9	48.9	49.9	50.7	46.3

Source: (González, 2006, p. 122) *Note that VCC= CRUCH Universities*

The Ministry of Education estimation of graduation rates is near 48 percent (Cruchaga, 2012). In order to provide additional information on completion rates, data from the Universidad Católica del Maule will be analyzed in depth. The question concerns the graduation rates in 2007/2008 and can be phrased as follows: what percentage of students graduating by 2007/2008 were enrolled during the period 1992 to 2002? Table 7.13 summarizes these rates.

Table 7.13: Graduation rates for 2007 and 2008: Universidad Católica del Maule (UCM).

Year of enrolment	to 2007	to 2008	Gap
1992	69%	69%	-
1993	65%	65%	-
1994	69%	69%	-
1995	68%	69%	1%
1996	68%	69%	1%
1997	57%	60%	3%
1998	49%	53%	4%
1999	47%	52%	5%
2000	45%	50%	5%
2001	33%	44%	11%
2002		40%	-

Source: Calculated by the Author from UCM data.

The above table shows that in 2007, of all the students admitted to the UCM in 1992, 69 percent had graduated (in any previous year). By 2008, the situation remains the same, therefore there were no more graduates in 2007-2008, indicating that all students of cohort

1992 had left and therefore the difference (31 percent) were students that did not complete their studies. Similarly, in 2007, 68 percent of students that enrolled in 1995 had graduated; by 2008 the rate increased to 69 percent, indicating there was a small percentage (1 percent) that took 12 to 13 years to complete their undergraduate studies. Whereas from cohorts 1998, 1999 and 2000, by 2008 between 50 percent and 53 percent of students had graduated, (ie between nine and twelve years after initiating studies). Data indicates that a very low percentage remain in the University, implying that the graduation rate has declined from the 69 percent reached in previous cohorts.

Considering the time-to-graduation analyzed in the previous section, Table 7.11 shows that in Agronomy did in Civil Engineering respectively, students take an average 60 percent and 40 percent more than the nominal time to complete their studies, (ie close to eight years). The UCM created both degrees in 1998, which at that time accounted for 22 percent of all the students admitted. Given the above, for the analysis of graduation rate, in UCM it is considered that rate was stable until 2000 at close to 50 percent. For subsequent enrolment cohorts the closing date for analysis in the table (2008), meant there were still students at the University, and so graduation time could not be measured for these cohorts. Thus, considering the study conducted by Gonzalez, the estimation of the Ministry of Education and data exposed in the UCM records, it seems reasonable to estimate the completion rates at around 50 percent.

In an international overview, OCDE countries have an average completion rate of 70 percent (OCDE, 2010) for tertiary type A programs, supplied in Chile mostly by the universities. This figure locates Chile far away of countries such as Switzerland and Netherlands (72%), Germany (67%), Denmark (82%) among many others. Nevertheless, and as has been discussed earlier, rigorous data is not available for calculating this indicator, and even though it may be possible to estimate, it is not reasonable to conclude that Chile is more efficient in this matter than other countries.

7.4.2 Employment

Despite the dropout rate experienced within the Chilean higher education system, the quantity of graduates has grown considerably. In absolute terms, the number of graduates in the entire Chilean higher education system has grown almost three times, from 35,771 graduating in 1999 to 105,168 in 2009. The chart in Figure 7.12 tracks these trends by type of higher education institution.

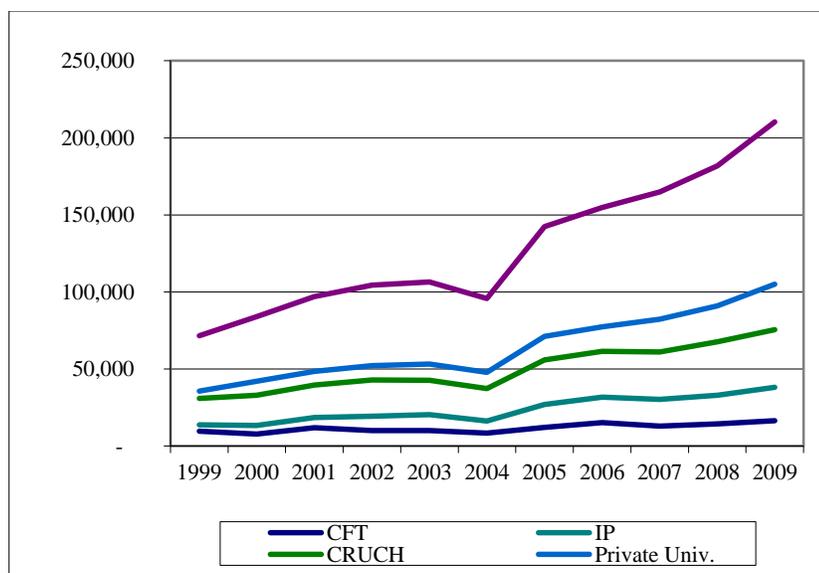


Figure 7.12: Evolution of graduates by type of Higher Education institution.
Source: Calculated by the Author from (SIES, 2011)

The highest number of graduates come from the CRUCH universities, with 37,362 in 2009, followed by private universities with 29,595 students graduating in the same period. Nevertheless, the highest growth rate has been experienced by private universities, expanding from 4,832 in 1999 to 29,595 in 2009, which is effectively a 6.12 times increase in the number of graduates over the ten-year period. The private universities are followed by professional institutes with 5.3 times as many graduates, from 4,089 in 1999 to 21,661 in 2009. CRUCH universities and technical training centres take the third and fourth places, growing 2.18 and 1.7 times respectively. Thus, it is possible to observe a significant growth in the number of professionals graduating from universities, both public and private, and from professional institutes and technical training centres. This growth rate has the potential to create unemployment among professionals or those holding technical positions if commensurate job opportunities are not created.

Data from the Ministry of Education records the probability of finding a suitable employment position in the first and second years following graduation, along with the salary levels. Table 7.14 shows the probability of finding employment within the first year after graduation for the cohort of those graduating from 2005 to 2008:

Table 7.14: Probability of finding employment within the first year after graduation.

	Cohort 2005		Cohort 2006		Cohort 2007		Cohort 2008	
	Avrg.	Sd.	Avrg.	Sd.	Avrg.	Sd.	Avrg.	Sd.
Universities	0.83	0.13	0.84	0.15	0.84	0.12	0.81	0.14
CFT	0.63	0.17	0.68	0.16	0.67	0.16	0.66	0.17
IP	0.70	0.15	0.73	0.14	0.75	0.16	0.73	0.15
National Average	0.76	0.17	0.78	0.15	0.79	0.15	0.76	0.16

Source: Calculated by the Author, from Futuro Laboral (Mineduc, 2011b)

The national average probability of finding employment the first year after graduation varied from 0.76 to 0.79. The highest ratio was achieved by universities, either private or public, and the lowest percentage by Technical Training Centres. By analysing the cases included in the sample, it is possible to observe that many universities supply 5-B programs (Unesco, 1997), competing with CFT, but the graduates of the university programmes show, in many cases, better probabilities of finding a job in the first year following graduation. For example, the level 5-B program “Mechanical Technician” is supplied by both universities and technical training centres, but for the 2005 graduation cohort, the university graduates achieve a 95 percent employment rate versus those of technical training centres that only achieved 71 percent. The same situation occurred for a program called “Technician in Chemistry”, for which of those graduating from universities, 83 percent found a job within the first year after graduation compared to 74 percent for those graduating from CFTs. In some cases, the percentages increase for cohorts in 2006, but in general the situation is considerably better for the graduates of universities. As discussed previously, the confidence that Chilean society has in university education over technical education is strengthened by this employment data. As outlined in previous sections, to 2009, seven percent of the students in higher education within technical training centres came from the first quintile,

5.5 percent from the second and 5.1 percent from the third, representing the lowest participation rates in the system. However, CFTs had a higher proportion of students coming from lower socioeconomic groups than universities. According to a national socioeconomic survey (D. S. MIDEPLAN, 2011), to 2009, 37 percent of CFT students came from the first and second socioeconomic quintile, versus 27 percent in CRUCH universities and 20.5 percent in private universities. Those graduating from CFTs are predominantly from lower socioeconomic quintiles and face higher unemployment rates. At the very least it appears to be more difficult for these graduates to find an employment position than those who hold a similar qualification from a university.

When the data analysis focuses on the second year after graduation it reveals the increased probability of employment for graduates from the entire system. A summary of this data is outlined in table 7.15 below.

Table 7.15: Probability of finding employment within the second year after graduation

	Cohort 2005		Cohort 2006		Cohort 2007	
	Avrg.	Sd.	Avrg.	Sd.	Avrg.	Sd.
Universities	0.89	0.09	0.89	0.09	0.87	0.11
CFT	0.71	0.15	0.75	0.15	0.71	0.13
IP	0.80	0.13	0.80	0.12	0.77	0.13
National Average	0.83	0.13	0.84	0.13	0.82	0.13

Source: Calculated by the Author, from Futuro Laboral (Mineduc, 2011b)

Although the universities continue to record the highest probability of graduates finding a job, major growth is observed for CFTs and IPs. For the 2005 cohort, the probability of finding a job grew nine points for CFT's and 10 points for IP's; therefore the 2005 cohort achieves 71 percent probability of finding employment within two years after graduation for those graduating from a CFT and 80 percent for those from a IP, compared to 89 percent for graduates of universities. For cohorts 2006 and 2007, the figures remain between 0.71 and 0.75 for CFTs and between 0.77 and 0.8 in the case of IP's.

Although there remains a clearly higher social value in holding a university degree or other qualification, graduates of CFTs and IPs have increasingly better chances of finding employment within their field of study. Notwithstanding the above, the remaining percentage (ie those that cannot find employment two years after graduation) is not trivial. In 2007 there were more than 30,000 graduates from IPs and CFTs, so based on the figures shown in-table 7.14 this would mean over 6,000 graduates were unable to find jobs. This situation affects to a great extent graduates from lower socioeconomic quintiles, frustrating their aspirations and those of their families, who believed that education would be their social mobility driver.

7.5. Outcomes of funding policies and implementation mechanisms

As was described in Chapter Six, higher education in Chile is funded partly by contributions from the state and partly by families through the payment of fees, which in turn can be financed either with their own resources or through loans and grants received from the state and also from the private sector. In this section the outcomes of funding policies in higher education in Chile are analysed in accordance with the main focus of this thesis; namely, to what extent have these policies strengthened equity in the system, thereby providing real opportunity and success in higher education for students from lower socioeconomic sectors.

7.5.1 Public funding

7.5.1.1 Public direct allocation (AFD)

The state provides both supply-side and demand-side funding policy instruments. It has implemented mechanisms to provide direct funding to universities based on historical performance, and it also allocates funds through scholarships and loans to students; the latter student-focused allocations have grown exponentially, and for some years the benefit of these has been extended beyond the CRUCH Universities to other institutions.

The Public Direct Allocation (AFD) funding mechanism, despite since 2006 being largely overtaken by funding scholarships and loans, remains one of the most important sources of funding received exclusively by CRUCH Universities. Between 1992 and 2013 PDA funding grew in total by 72.8percent, with different trends characterising each university, as shown in Figure 7.13.

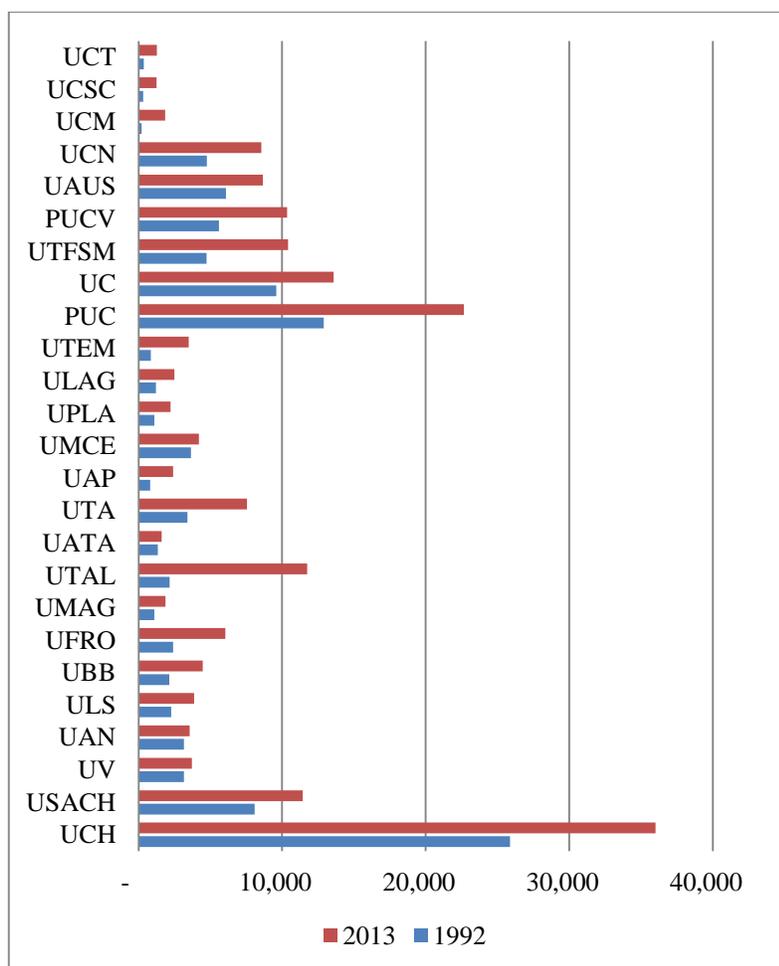


Figure 7.13: Public Direct Allocation by CRUCH university 1992 and 2013
 Source: Author from (Mineduc, 2013b) ⁶

Ten of the 25 universities experienced lower than average growth, because the fund allocation mechanism makes universities compete in terms of performance indicators and since the annual amount to be distributed is fixed, universities with above-average performance grow their allocation at the expense of poorer-performing institutions.

Indeed, according to the Ministry of Education (2013b), the two institutions with the fastest growth in AFD funding are Universidad de Talca (UTAL) and Universidad Católica del Maule (UCM), both located in the seventh region. In 1992, UCM received Ch\$ 208 million

⁶ Chilean Pesos to 2013

while UTAL received Ch\$ 2,149 million. The first has had an increase of more than 8 times, reaching \$ 1,855 million for 2013. For the UTAL, growth has increased by 4.5 times, from \$ 2,149 to \$ 11,746 million in 2013. While the difference in AFD funding to these two institutions has declined in 20 years, UTAL’s funding remains 6 times greater than that of UCM.

In 2012, (according to the data from each institution), considering the criterion of publications for example, both institutions had the following data and indicators.

Table 7.16: Data and some indicators used for PDA allocation in 2012

	Students	FTE	Publications	Publication /FTE
UCM	5,430	261	41	0,157
UTAL	7,221	325	162	0,498

Source: Calculated by author from (Mineduc, 2013b)

Analysing the variable component of 5 percent of the AFD, the impact for an additional publication is four times lower for UCM than for UTAL. That is, keeping everything constant, if UCM had generated one additional publication, the additional funding attracted would have been ChM\$ 608, while for UTAL one additional publication would increase their allocation by ChM\$ 2,754. Now, the situation in terms of per- student funding is not very different, as shown in the graph in Figure 7.14.

By taking a simple overview of the Figure 7.14 it is easy to observe the enormous gap that existed among universities, with only nine of the 25 CRUCH Universities receiving over the national average. As an example, in the case of the Universidad Catolica del Maule (UCM), the institution with the highest growth in AFD funding over 18 years, UCM still remains one of the country’s institutions having the lowest allocation per student. Thus, it is important to recognize the insignificance of the variable proportion (five percent) that should enable universities to improve their position. That small percentage of funding makes it almost

impossible to converge the AFD funding of smaller or newer institutions with bigger or older institutions which receive much higher funding levels within the 95 percent of AFD.

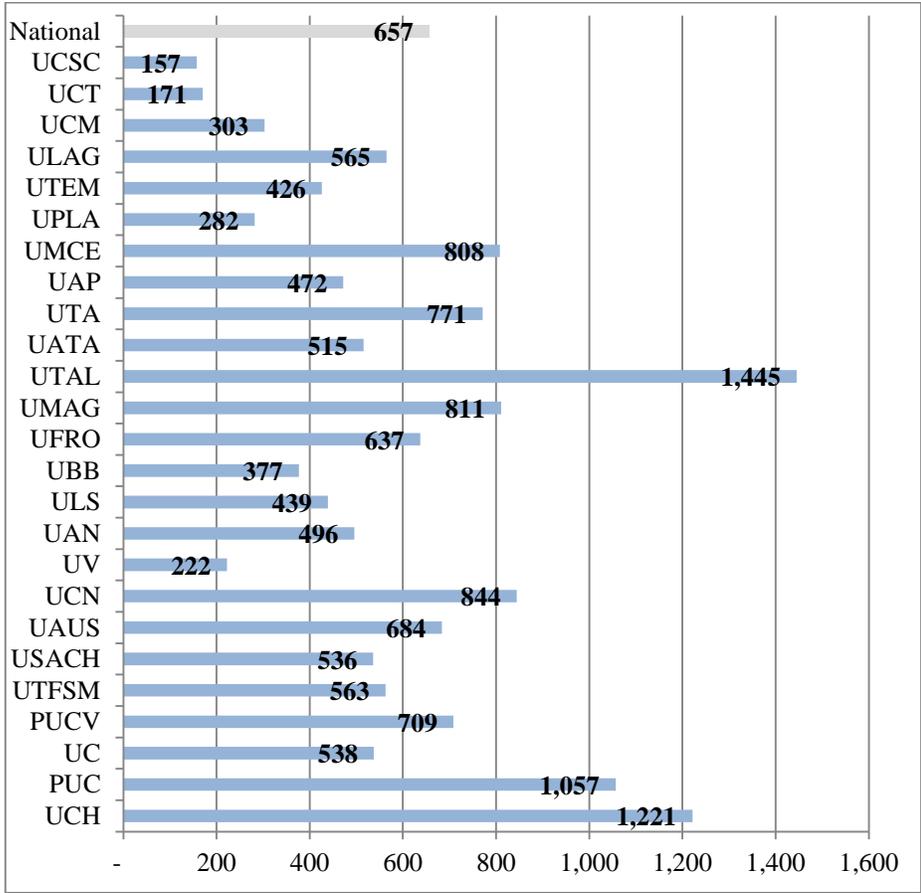


Figure 7.14: Public direct allocation by student and institution in 2010
 Source: Calculated by the Author from Mineduc (2013b)

Turning to the national goal of equity, until 2011, with the creation of the Basal Performance Fund (see Chapter 6), there was no mechanism of public funding connecting institutions serving lower socioeconomic groups. Consider the case of the Universidad de Talca, which has remained through the years as one of the universities with a high AFD allocation per student. As was explained previously in this Chapter, the Universidad de Talca enrolls more than 50 percent of its students from public schools, which means they come from the lower income quintiles. At the other end of the AFD funding spectrum, the Universidad de Chile and Pontificia Universidad Catolica del Chile, who receive a very high allocation by AFD, enrol mostly students from the higher socioeconomic groups.

Nevertheless, the gap between institutions and the low impact that the variable five percent provides show that the mechanisms of funding have implication for the strategies and policies of the institutions (Liefner, 2003). In fact, the introduction of the indicators in the AFD five percent variable drove the CRUCH institutions to design and implement strategies to impact those indicators. Obviously the starting point was unequal, but the strategies have driven a substantial increase in the number of equivalent full time academics holding PhDs (including providing institutional funding to faculty in order to enable them to achieve those doctoral degrees), as well as growth in the number of publications indexed in the Web of Science and Scielo. Many institutions award extra salary to their academics for every publication. In the case of UCM, in 2012 the bonus amounted to almost US\$1,000 per ISI publication, and an important increment was available to staff competing for research grants from the National Commission of Science and Technology. All of these strategies are related to the PDA indicators. In 2000, academics from the CRUCH universities achieved 1,746 publications, (ISI +Scielo/3), tripling the number of publications in ten years, as shown in Figure 7.15.

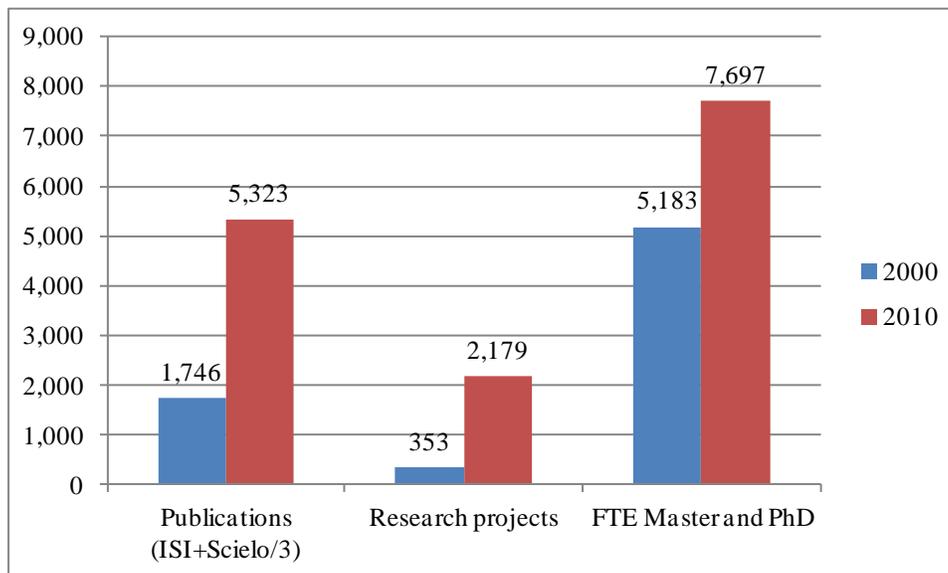


Figure 7.15: Growth of publications, research grants and academics holding Master and PhD qualifications within the CRUCH universities.
Source: Calculated by the Author from (CNE, 2012; SIES, 2012)

Research grants and academic qualifications have grown considerably, as has academic productivity. In 2000, 0.33 publications were produced per academic holding a Masters or PhD qualification, increasing to 0.7 in 2010, more than double the output. In the same way, the qualifications of the academics grew from 47 percent of all academics with Masters or PhD degrees, to 58 percent in 2010. Thus, even though there are inequities in the PDA between CRUCH institutions, the variable component introduced in 1990 started to have an effect on the scientific capacity of those universities, driving changes within the institutions regarding human resource development, and the encouragement of research activities and publications, with consequential effects on national-regional development and teaching-learning processes.

A number of key factors provide some insight into how the country has attempted to develop the scientific capacities of universities and other higher education institutions. In 2010 there were 5,255 FTE academic staff with a PhD qualification in Chile. Four thousand one hundred and forty-two [4,142 FTE] of those belonged to the CRUCH Universities (CNE, 2012). That meant 78 percent of all academics with PhD qualifications in the country in 2010 were working in a public university, and 1,044 or 20 percent belonged to private universities.

7.5.1.2 Public indirect allocation (AFI)

As noted in Chapter Six, this fund awards resources to all institutions of higher education who manage to attract students having the top 27,500 highest scores in the PSU. While not a major fund in terms of total public resources allocated to higher education, representing in 2010 and in subsequent years about 3 percent of the total, this instrument has remained and in 2013 increased by 10 percent compared to 2012, reaching Ch\$ 23.156 million. The supremacy maintained by the CRUCH universities within the system is clear. Nevertheless, a constant fall can be observed since the mid-1990s in favour of private universities, which have grown in terms of the number of students, overtaking CRUCH universities in 2010, yet the latter receive a much greater level of resources. From 2010-2013, the trend continues, as shown in the following table:

Table 7.17: Public Indirect Allocation (AFI) received by type of institution 2011-2013

	2011	2012	2013
CRUCH			
Universities	17,732	17,447	17,231
P. Universities	4,979	5,260	5,748
IP	82	65	82
TTC	40	27	24
	22,833	22,800	23,086

Source: Calculated by the Author from (Mineduc, 2013b)

The AFI funding to the CRUCH group of universities continues to decline but still remains more than three times greater than that received by private universities and comprises more than 70 percent of the total fund allocated. Nevertheless, within each group, (CRUCH and private universities), large differences occur. In the first group, with some minor variations, the supremacy of the Universidad de Chile (UCH) and the Pontificia Universidad Católica de Chile (PUC) is maintained; between 2010 and 2013 these two institutions account for 50 percent of national resources. Adding three others (the University of Santiago, Universidad Federico Santa María University of Concepción), these five universities account for over 80 percent of all resources.

In the case of private universities, seven of them account for about 90 percent of the funds received by such institutions. Notable are the Universidad Adolfo Ibañez, Universidad de Los Andes, Universidad del Desarrollo and Universidad Diego Portales; those receiving more funding than 20 CRUCH universities. This is evidence of the establishment of private institutions that have managed to position themselves within the strongest in the country, attracting students with high scores in the National University Selection Test (PSU).

As has been revealed in previous chapters, there is a direct relationship between the type of secondary school and PSU scores, and between type of school and socioeconomic status. Better schools obtain better PSU score because most of their students come from higher socioeconomic quintiles. Although the AFI aims to motivate universities to enrol the best secondary school students, the mechanism invariably favours institutions that attract students from the higher socioeconomics groups.

7.5.2 *Institutional Development Funding*

Being one of the instruments of public funding to universities and, for several years having included Private Universities, IP and CFT, the Mecesup program (included under this category of public instruments of funding) behaves relatively fairly, allocating many institutions funds for their development. However, this funding also creates an element of risk because institutions essentially receive once-only funding for initiatives that by definition need to be sustained on an ongoing basis. It is necessary therefore, to evaluate the outcomes of this fund over a longer time horizon, regarding equity in education and the impacts on those institutions that receive students from the lower socio-economic sectors.

The new *Basal Performance Fund*, included in the category of the Institutional Development Fund, is worthy of particular attention. This fund has been allocated since 2011 exclusively for the CRUCH universities. As explained in the previous chapter, the allocation mechanism, based on performance criteria, classifies universities into three groups: Universities with emphasis on teaching, research and doctoral programs; Universities with emphasis on teaching and targeted research and in the third category Universities with emphasis on teaching. During the year 2011 (to be implemented from 2012) the Basal Performance Fund allocated \$ 11,800 million Chilean pesos, growing by 29 percent the following year to \$ 15,555 million Chilean pesos (Mineduc, 2013a). Considering the number of students in each receiving institution, the distribution is shown in Figure 7.16.

The first four universities, from bottom to top, correspond to Group One, the second nine to Group Two and the final twelve to Group Three. As can be seen, considering the size of the university in terms of student numbers, there is considerable diversity among groups and institutions, from \$ 18,000 Chilean pesos per student to more than \$100,000. However, in absolute terms, (ie without considering the number of students), the largest amounts are given to the first group, excluding the Universidad Técnica Federico Santa Maria, which is receiving more resources via the AFI described in the previous section.

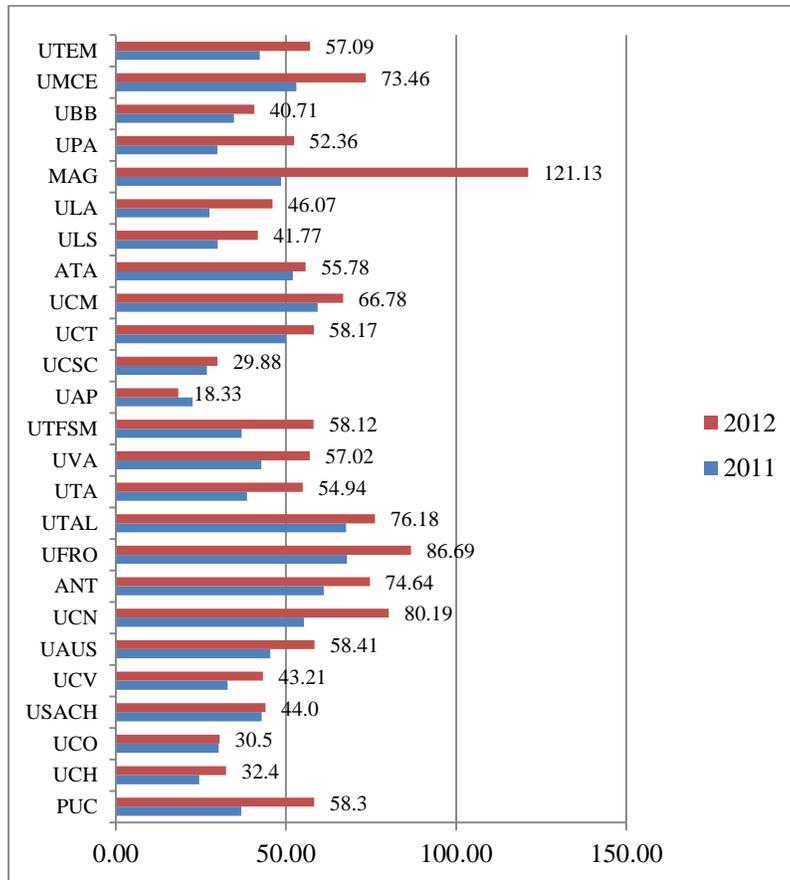


Figure 7.16: Distribution of Basal Performance Fund 2011-2012 per student for CRUCH universities (in thousands of Chilean pesos)
Source: Calculated by the Author from (Mineduc, 2013a)

So while the Basal Performance Fund is the first fund to consider students from lower quintiles as an indicator for the targeting of resource allocation, it is only directed to the category 3 institutions, which are arguably the least sophisticated, catering to undergraduate teaching without a significant research presence. Institutions that have achieved higher levels of research and graduate programs, with more highly-qualified academic staff, are not actively incentivised to enrol students from this sector of the population.

7.5.3 Loans and scholarships

As explained in Chapter Six, the resources for scholarships and loans have grown strongly since the year 2006, providing increasing financial support to students from institutions outside the CRUCH Universities with the creation of the State Guarantee Student Loans

Program (CAE). Although it is a relatively new program, the CAE has enabled access opportunities for the general population who cannot afford to pay for their education (Mundial, 2011). Between 2006 and 2010 the number of applications grew 245 percent, from 67,236 to 231,936 (Ingesa, 2012), with the highest number of applicants coming from the lower socioeconomic groups. In 2010, 45 percent and 20 percent of applicants were from the first and second socioeconomic quintiles respectively. Thus private universities, IP and CFT have benefited from this new funding mechanism, along with increasing the opportunities to continue tertiary studies for students in the lower socioeconomic quintiles. Nevertheless this new mechanism has apparently suffered from several problems identified by the World Bank (2011), such as:

- High risk of default. Loans are made by a private bank but underwritten by the higher education institution where the student is enrolled. When students complete their studies the state begins underwriting them in favour of the banks, in the event that as graduates do not find work or simply do not pay. The default rate is estimated at around 50 percent. For students who do repay the loan, the time taken can be as high as 20 years.
- High rate of interest on loans. Until 2011, the rate of interest on this long term loan was between five and six percent. From 2012 onward, and as a result of the student campaign that occurred during 2011, the rate has been limited to two percent.
- Problems of coordination between different student aid programs.

Although the World Bank report detected weaknesses in the program, and even though the program is enhancing opportunities for students from lower socioeconomic groups, the loan program suffers other problems that can affect equity and social benefits.

Risk of high indebtedness: Although one of the modifications to the CAE was to drop the loan interest rate from 5.6 percent to two percent per year, comparable with the traditional loans available only to students enrolled in the CRUCH Universities, the policy does not consider the future income of the students. Students enrolling in longer and more expensive

programs generating the potential for higher future incomes are treated in the same way as those studying professions with lower potential future incomes. Also, the loan scheme covers nominal standard fees established by the government for programs. In many cases a gap exists between the loan amount and the actual tuition fees charged by the higher education institution. Universities offer their own loan schemes recognising this difference. The gap must be covered by the student, often generating two long-term debts, one with a bank and the other with the university. For example, in 2010, 62.2 percent of the whole CAE (US\$150.000.000), was allocated to students from 11 private HEIs - five private universities, four professional institutes and two technical training centres. Apart from this concentration of funding, in the case of universities the loan funds cover an average of 73 percent of the actual fees charged by the institution (Ingresa, 2012). Therefore, the remaining part must be covered privately, by the household or another loan coming from the same institution with a non-regulated rate of interest.

Growth of professional unemployment: There are no criteria regarding the program in which the applicant for the loan will be enrolled. Currently, and as previously analysed in this chapter, many students from a variety of programs face a low probability of finding employment within two years of graduation. In many cases, the probability is less than 80 percent. For the program of History, for example, graduates have a 67 percent probability of finding employment within two years of graduation.

Social frustration: For many families, higher education is the means of upward social mobility. However, as shown, graduates of many programs face difficulties gaining employment. Moreover, programs with lower levels of employment typically provide lower levels of income. Thus, these students begin their professional life with a financial debt that must be paid during the next 15 to 20 years, and, compounded by the probability of not finding employment within their profession. The likely situation is frustration for the graduates and their families.

Higher risk of lower academic standards: Higher education institutions guarantee the loan during the study period at the level of 90 percent in the first year, 70 percent in the second,

and 60 percent until completion of the program. There are a number of implications for this graduated loan scheme for students. Some of these include the risk of students not being able to afford the higher proportion of their contribution and dropping out. In such cases students would have accumulated large debts without gaining the qualifications to obtain employment to pay off the debt. Furthermore, higher education institutions may be tempted to lower academic standards to ensure students pass their programmes as a form of guarantee on the loan repayment. Although there is no evidence to prove this proposition, HEIs will be tempted to manipulate the retention rate by lowering academic requirements, and some studies have suggested that there have been cases of private universities lowering the academic standards required to pass programs in order to minimise the failure of students and control the dropout rate (Leiva, 2011) .

7.5.4 Private expenditure

Even though it is possible to appreciate that there has been significant growth in the public student funding system, the country is still far from the OECD standard. According to different approaches to funding tertiary education (OECD, 2011a), Chile belongs to the group of countries with high levels of tuition fees but less-developed student support systems, such as exist in Japan and Korea, although those countries reach higher levels of income per capita and a more even distribution of income. In Chile, tuition fees for Type A programs are on average greater than US\$5,000 per year, with a GDP per capita in 2009 of US\$14,321 and a Gini coefficient of 0.49. Tuition fees in Korea are US\$5,300, and US\$4,600 in Japan, with a Gini coefficient of 0.31 and 0.329 for Korea and Japan respectively, which means that they have a more even income distribution than Chile. However, the major difference lies in the GDP per capita achieved by those countries, which is more than two times that of Chile (OECD, 2012b).

The government established reference fees for each HE institution and its programs in 2005 as the basis for providing financial aid to students. If institutions choose to charge higher fees than the reference fees, families must bridge the gap, and if they do not receive grants

or loans amounting to 100 percent of the reference fees they must support this component as well.

Analysing the available data, it can be shown that contradictions exist between the mechanism that determines the reference fees and the policy challenges this mechanism seeks to address. In a simple exercise, three programs have been selected from seven different universities; five belonging to the CRUCH group, and two private universities. Two programs have high operational and implementation costs, and students have a high probability of finding employment within the first year of graduation, (i.e. medicine and nursing). The third program, psychology, is of lower cost to deliver, and students graduating face lower probability of employment within a year of graduating, as well as facing lower salaries. Information from the National Education Council (CNE) shows that in the case of medicine, for example, the program is taught in 28 branches by 21 institutions, 12 being CRUCH universities, and the remainder private universities.

Table 7.18: Actual fees and reference fees for the program of Medicine supplied by six different universities, 2012

University	Institutional Accreditation	Yrs. of program accreditation	Annual fees Ch\$	Fees of reference Ch\$	GAP
U. Católica de Chile	5 areas -7 yr	7	5.280.000	3.639.642	1.640.358
U. de Chile	6 areas -7 yr	7	4.344.900	3.639.642	705.258
U. Católica del Maule	3 areas, 5 yrs	4	4.400.000	2.720.681	1.679.319
U. Austral	5 areas-6 yr	6	3.900.000	2.961.568	938.432
U. de Talca	4 areas-5 yr	2	4.614.400	3.639.642	974.758
U. Autonomía de Chile	3 areas-5 yr	2	4.368.000	2.926.800	1.441.200

Source : Calculated by the Author from (CNE; Ingres, 2012)

Table 7.18 shows the actual fees and reference fees for the program of Medicine supplied by six different universities in 2012. The highest reference fees are allocated to Pontificia Universidad Católica de Chile (PUC) and the University of Chile (UCH), both with the highest level of accreditation for the institution as well as for the program. Moreover, they

have the highest levels of academic qualifications, research grants, and publications. Therefore, it seems logical and congruent that the government gives a high reference fee. Nevertheless, in terms of actual fees charged to students, Pontificia Universidad Catolica de Chile is 20 percent more expensive than Universidad de Chile, both apparently having similar average operational costs, suggesting that PUC wishes to reflect in the price of the program that it is of better quality. In practical terms, if one student is enrolled in PUC, and applies for government aid, the aid will be allocated based on the reference fees. For example, if a student applies for CAE, the loan allocated will be CL\$3,639.642 (first loan), and the remaining amount (required because the universities are free to charge actual fees that are higher than the reference fees) will need to be covered by another loan or come directly from the family. Nevertheless, medicine seems particularly developed for upper socioeconomic groups, or the best students from the best public secondary schools (if students come from lower socioeconomic groups). The PSU score required is far above the standard scores. Also interesting is the difference between universities. For example, Universidad Austral has an institutional accreditation of five areas (the maximum possible) and of six years duration (indicating very high government confidence in quality). It has six years of accreditation for the medicine program as well. The government reference fee for that program is 22 percent less than for the medicine program taught by the Universidad de Talca, which has a lower level of both institutional and program accreditation. In addition, in 2012 Universidad de Talca was enrolling the fourth cohort of students, which means three years later it would have the first cohort of graduates. In the same way, Universidad Autonoma de Chile, which does not belong to the CRUCH group, has a higher reference fee than Universidad Católica del Maule. These institutions have a similar level of accreditation, but the program of medicine in UCM is accredited for twice as long as Universidad Autonoma. Moreover, in terms of academic staff qualifications up to 2011, Universidad Autonoma had 10 percent with PhD qualifications (CNE, 2012) compared to 22 percent at Universidad Católica del Maule. Further, only 21 percent of the academics in Universidad Autonoma have full time employment compared with more than 70 percent in the Universidad Católica del Maule.

A similar situation is observed for the program of nursing, wherein reference fees are higher for Universidad Santo Tomas than for the Universidad de Talca, even though the former has only three years' institutional accreditation and in only two of the five areas.

Turning to the program of psychology, this is supplied by 43 universities distributed throughout the country in 100 different branches, delivered only during the day. In addition, there are several special programs, provided mainly for those in employment, taught during the evening. These include 35 additional programs. In the regular daytime programs, there were 21,704 students; 5,326 of those were enrolled for their first year (CNE, 2012). According to the data of Futuro Laboral, graduate psychology students have a 76 percent probability of finding employment one year after graduation, and an average monthly salary for the first year of Ch\$503,000. This salary is lower than the CL\$802,000 for nursing and CL\$1,115,000 in the case of medicine. The data suggest that psychology is an oversupplied profession, but it remains attractive for universities due to the low operational and implementation cost. Nevertheless, from the point of view of student aid policies, the program of psychology has the same reference fees as nursing in Universidad Austral, which is a program with a 97 percent probability of finding employment within the first year after graduation. Also, for comparison, reference fees for psychology in PUC is only five percent less than for medicine at UCM.

Certainly, the establishment of reference fees allows the government to standardize the cost of programs and therefore the allocation of public funding, but several weaknesses arise regarding the policy goals of enhancing equity and social change. For example the mechanism used to determine the reference fees does not consider the socioeconomic background of students who regularly attend a particular program. While reference fees may be low, the gap between these and actual fees charged by institutions will be higher, thus students are not only acquiring a debt to the state but also to the institution in which they study. Similarly, institutions that receive large numbers of students with low cultural and social capital, should assume greater teaching costs, including mentoring programs, and better academic resources that give a similar professional formation to institutions with more resources with students enrolled who are better prepared. Additionally, while it is true the

CAE loan policy has begun to take into account the possible unemployment of professionals, suspending the payment of the loan under adverse circumstances, the interest continues to accrue and no distinction is made between high-salary and low-salary professions.

7.6. Accreditation and quality assessment

The development of quality assurance policy in higher education in Chile was described in Chapters Five and Six. Despite the progress noted in the form of regulations and structures, serious doubts arose regarding the effectiveness of the higher education system. The student movement in 2011 exposed the challenges faced by the tertiary sector in Chile.

Indeed, a major corruption scandal exposed the anomalies of the system in which the president of the Chilean National Accreditation Commission (CAN) was prosecuted and imprisoned for having given professional advice to universities receiving accreditation, which enabled students of these institutions to finance their studies through CAE loans. According to the indictment against the CNA president, he would have received between 2009 and 2013 about \$ 300 million Chilean pesos (nearly US\$600,000) in consulting fees from five universities seeking to be accredited. The newspapers headlined suspicions about the system (Guzmán, 2012) and the formalization of bribery and money laundering charges against former university rectors and the former president of the CNA (P. Muñoz, 2012). In addition to the immediate removal of the president of the agency responsible for ensuring the quality of the system, and the public uproar, the scandal encompassed the legal departments of several private universities, which created shell companies to lease property and other services to the university itself, thus allowing advantageous accounting for resources such that the institution did not violate the legal prohibition on profit that applies to institutions of higher education, (ie the shell companies allowed owners to withdraw profit from their universities).

Additionally, a university was closed for the first time - the Universidad del Mar - with more than 16,000 affected students distributed across campuses throughout the country, many of whom were relocated to other universities but many others of whom were unable to complete the program, being left with debt from loans used to finance their studies. Following

institutional restructuring, and in the face of much sharper public scrutiny, the situation of institutions that have been incorporated within the national system of quality assurance through institutional accreditation is as follows:

Table 7.19: Institutional accreditation status by type of institution

	N° of Institutions	Non Accredited	Accredited
CRUCH Universities	25	0	25
Privates Universities (1)	34	12	20
Professional Institutes (2)	41	8	20
Technical Training Centres	50	9	18
Total	150	29	83

Source : Author from (CNA, 2014; CNED, 2014)

As shown in the table above, all CRUCH universities have entered into the national system of quality assurance, with all of them achieving accreditation. Regarding private universities the situation is a little different; of 34 institutions, two are in the licensing process, 32 have participated in the accreditation process and 20 (63 percent) of them have achieved accreditation.

Regarding professional institutes and technical training centres, the situation is more or less similar to private universities. Many of these institutions are in the process of licensing or examination, and of those who have applied for accreditation there is a large percentage that have not been successful; (ie they have not attended to quality issues in the education of their students). In the particular case of universities, both public and private, considering the outcomes of the processes of institutional accreditation, in both compulsory and elective areas, as well as the number of years for which accreditation has been obtained, the situation is summarised in Figure 7.17:

		Yrs. Of Accreditation					
		2	3	4	5	6	7
Areas Accredited	5				1;1	6	2
	4			1;1	4;1	1	
	3		2	4	2;4		
	2	1;4	3	2;4	1		

Figure 7.17: Number of universities accredited considering areas and years of accreditation
Source: Author from (CNA, 2014)

In the figure the vertical axis shows the number of areas of accreditation: undergraduate teaching and institutional management (compulsory) and optional areas of research, postgraduate and external relationships. The horizontal axis shows the number of years of accreditation obtained. In black, are denoted the number of CRUCH institutions, and in red the number of private universities. For example, the maximum institutional accreditation that can be achieved is in five areas for seven years. In this situation there are only two universities, both CRUCH members, the Universidad de Chile and the Universidad Católica de Chile.

Likewise, at the second level, with all areas accredited but for a period of six years, there are six universities, all of them belonging to the CRUCH group. Considering five years of accreditation and at least one optional area accredited as a point of reference, seven further CRUCH institutions appear, (ie 15 of the 25 CRUCH universities have at least five years of accreditation and at least one optional area accredited). Applying the same criteria highlights the emergence of seven private universities: Universidad Diego Portales, de Los Andes, Alberto Hurtado, Finis Terrae, del Desarrollo, Adolfo Ibáñez y Universidad Autónoma de Chile. The latter however was one of the universities involved in the accreditation scandal of 2012, in which serious doubts were raised about the outcome of their accreditation (Rodríguez & Guerra, 2012). This situation affected student enrolment, which as shown later in Chapter 8 (case study), for the campus of the seventh region saw a decline from 1,745 students in 2012 to 1,180 in 2013.

In addition, and as was shown in earlier in this chapter, four private universities with high levels of accreditation have increasingly attracted public resources via indirect public

allocation (PIA) - funding granted by the state to those institutions that enrol students within the 27,500 highest scores in the university selection test (PSU).

Turning again to table 7.17, and considering accreditation of up to four years, and covering only the compulsory accreditation areas, there are three CRUCH universities, Universidad Católica de la Santísima Concepción, Universidad Metropolitana de Ciencias de la Educación and Universidad Arturo Prat. The latter university is owned by the state, regionally located, and has the lowest level of accreditation in the system, (ie two years accreditation and two areas of accreditation). Regarding the private universities, seven are classified under those criteria used previously, (ie up to four years accreditation and only in the compulsory áreas).

Given the above, even though the operation of the system has been in doubt, the CRUCH universities have demonstrated the installation of quality assurance processes in undergraduate teaching, institutional management, research and so on. Similarly, although a very small group, there exist private universities strongly positioned in the system, not only attracting students with high scores on the PSU but also showing the installation of quality processes in various areas, including research. Concern remains about the number of non-accredited universities, and the high percentage-reaching very low levels of accreditation, for which students are still able to access publicly-funded scholarships and loans.

Regarding professional institutes (IP) and technical training centres (CFT), even though many of them are in the licensing stage, there is a significant percentage of non-accredited institutions, and many that only reach two years accreditation. At the high-quality end of the spectrum, with more than five years of accreditation, are highlighted INACAP, DUOC belonging to the Universidad Católica de Chile, San Agustín of Talca, CEDUC belonging to the Universidad Católica del Norte, among others. It is necessary to consider that only in the last few years, with the incorporation of these institutions as beneficiaries of public funds to finance the fees of the students, as well making them eligible to receive resources for development through the Mecesup program, has technical education been driven and promoted. However more attention needs to be directed to the installation of quality

processes, since as already explained, this type of institution primarily serves low-income students.

7.7 Conclusions

The desire of families historically having fewer options for their children to access higher education has grown exponentially, measurable for example by the number of students who register for the PSU, the selection test for gaining access to CRUCH universities. Supported by grants from the government which make it possible to afford the test, the lower socioeconomic sectors have greatly increased enrolments in this test. Nevertheless, there is a major difference in numbers accepting the subsidy and signing up to take the test, and those who actually take it, which implies a significant loss of public resources.

Having taken the PSU, the results continue to demonstrate that this test comprises the first barrier and mechanism of segregation and inequity in the system. A direct relationship exists between socioeconomic background and scores achieved, defining who can or cannot access certain institutions and programs. Regardless of the program or institution that is accessible, students from public schools have about a 55 percent chance to enter a CRUCH university, those from private-subsidized schools 70 percent and those from private schools have chances exceeding 90 percent.

For public schools, almost half of students taking the PSU do not reach the minimum score to apply to a CRUCH university. The other half typically score fewer than 600 points; ie even for the 50 percent who may apply, the institution and the type of program that they can access is pre-defined.

With respect to subsidized secondary schools, even though students graduating from these are more likely to be able to access CRUCH universities, only 15 percent reach PSU scores of over 600 points, with the majority concentrated between 500 and 600 points; ie their choices are limited to certain institutions and programs. By contrast, for those from private schools, where almost everyone can apply to enter CRUCH universities, over 60 percent

achieve scores that allow them access to better institutions and programs. This is the group with real freedom to choose their destiny without barriers to what they "could be".

On average, between 60 percent and 70 percent of all those who take the PSU get a score equal to or greater than the minimum enabling them to apply to a CRUCH university. However only 35 percent actually apply to CRUCH universities, and 20 percent finally enter, proving that even when the PSU is taken, private institutions are capturing a large share of the enrolments. At private institutions, in many cases the PSU is only a requirement for entry without considering the scores. Considering only the CRUCH institutions, the group of universities of public character that use this test as a selection mechanism, the segregation of those accessing them is evident. Students from private schools focus their attention on a very small number of CRUCH universities. Two such universities alone, located in the metropolitan region, enrol more than 50 percent of all students from private schools enrolling in CRUCH universities. While there are institutions with a significant percentage of students from private schools, most enrol students from subsidized and public institutions, located primarily in the regions. The exception is in the region of Valparaíso, where three of the four universities (Universidad Católica de Valparaíso, Universidad Federico Santa María and Universidad de Valparaíso) have significant percentages of students from private schools, and percentages of students enrolled from public schools are lower than average. Likewise, the institutions of Valparaíso enrol more students than average from other regions, which is consistent with the prestige and trajectory of this city which has been declared by Unesco to be a "world heritage city".

The growth shown in students taking the PSU, enrolling or not in a CRUCH university, evidences the large growth experienced in the system towards a participation rate in higher education of close to 50 percent. The concurrent decline in applications to CRUCH universities demonstrates the strengthening role of the private system. As shown in the metropolitan region, amongst the regions with the highest rates of participation, as in the country as a whole, both private universities and professional institutes are supporting the massification process, particularly in the lower socio-economic sectors. Regarding the technical training centres, while having lower participation rates, their internal structure is

mainly formed by lower socioeconomic sectors; according to a Casen 2011 survey 58 percent of the students of technical training centres come from quintiles one, two and three.

Thus, universities of a public nature which have traditionally received financial support from the state and whose students have had access to more and better benefits are attracting less participation by students from the lower socio-economic sectors, being overtaken by private universities and professional institutes. Similarly, attraction of the fifth quintile to these CRUCH universities has also decreased; these students are shifting to private universities.

Turning to the academic performance of students, in the case of dropout rates, universities manage to retain the greatest number of students, followed by professional institutes and technical training centres. For universities, the CRUCH institutions achieve better indicators than private universities. This performance is consistent with the main causes of dropout identified (the PSU and student support), as CRUCH universities are institutions that both select students based on their PSU score, and that provide more and better mechanisms for student support. Additionally, private institutions (universities, professional institutes and technical training centres), which do not select students via the PSU, and as described possess greater numbers of vulnerable students, face the greatest dropout rates, ie the lowest socioeconomic sectors are exposed to a higher probability of not graduating and further having a financial debt due to loans obtained to access and engage in higher education.

In terms of time taken to complete studies, even though the theoretical duration of programs in an international context is higher in Chile, in real terms the situation is even worse, taking in some cases up to 70 percent longer than the nominal time to complete a qualification.

The increase in participation in higher education has also resulted in growth in the supply of professionals in Chile, and in many cases programs are beginning to show signs of oversupply, resulting in graduates having a low probability of finding a job either in the first or second year after completing studies.

In general terms, higher employment rates for graduates are exhibited by universities, followed by professional institutes and technical training centres. In the latter case a large proportion of students from lower quintiles complete the same qualification as those that might be obtained at a university, but their unemployment rates are higher, demonstrating the social value accorded a degree from a university as compared to a technical institution. Thus, again the lowest socioeconomic sectors have less chance of finding a job, either in the first or second year of completed studies.

The growth of the private sector in higher education in Chile, particularly in terms of attracting the lowest socioeconomic sectors, is mainly explained by public policies related to student financial aid, which have widely extended the benefits and opportunities historically given to traditional students of CRUCH universities. Despite this success, significant risks of sustainability of the funding system exist. Although it is the most vulnerable sectors who have accessed these benefits, they face higher dropout rates, longer graduation times, and additional debt, at the same time as facing reduced employment opportunities for graduates of some programs.

Similarly, the process of massification of professionals, as in other societies, necessarily has implications for wages and labour stability. Not only is the recovery of credit to provide these resources to other generations put at risk, but there is reduced opportunity given to new professionals to access better living standards, since they must, with lower pay, manage a financial burden that can last 20 years.

In addition to the impact on access resulting from widely available student financial aid in all sectors of the system, the traditional funding of CRUCH universities has also generated in this group institutions of different categories. While the direct public allocation (AFD), historically one of the most important funding instruments, has generated significant impact on science in CRUCH universities, its distribution is not consistent with the policy of greater equity, given the deviations from rationality evident in the resources received by different universities. Additionally, the newly created instruments such as the Basal Performance Fund continues to reinforce segregation, since the group that traditionally receives students from

the lowest quintiles is the only one incentivised by this instrument; meanwhile incentives based on research are reinforced for those institutions receiving the best students and those from the most affluent sectors.

Finally, although the country has moved to a national system of quality assurance, there is a very large number of institutions that achieve low levels of accreditation, comprising mainly private universities and professional institutes, who as already mentioned are enrolling many students from the most vulnerable sectors.

Likewise it is possible to appreciate how the higher education system in Chile remains segregated: CRUCH universities, elite institutions and institutions that concentrate on the lower socio-economic sectors; elite private universities which have strongly outperformed most CRUCH universities are attracting students with high access scores and exhibit high performance in quality accreditation; there is a significant proportion of private universities with large numbers of students from vulnerable sectors, with minimal accreditation levels, without access requirements, and with high dropout rates; as well as professional institutes with low levels of quality accreditation.

Having set out in this chapter a critical analysis at the national level, the next chapter analyses the role and effects of a university located in a region with low levels of participation in higher education, disadvantaged social indicators in relation to national averages, low levels of state support, i.e. within the group of CRUCH institutions that concentrate the biggest number of students from low socio-economic sectors. The university that is the subject of the next chapter nevertheless has shown good levels of quality and academic performance in terms of retention, graduation and levels of employment for their graduates. These attributes make a fitting case study from which to extend and deepen our understanding of the role of the university as an agent of social change in Chile.

CHAPTER EIGHT

CASE STUDY: UNIVERSIDAD CATOLICA DEL MAULE CHILE

Previous chapters have examined patterns of development in Chile, the evolution of education and higher education in an international context, and the outcomes of the system as a whole. Analyses of enrolment trends, participation rates, the teaching-learning process, the allocation of resources, and others matters have been undertaken to understand whether participation and performance in higher education has enhanced social mobility for students from lower socioeconomic quintiles. This provides new insights into the role of higher education as an agent of change in Chile. To be able to draw conclusions and provide recommendations for public policy-making at national, regional and local levels, this chapter undertakes an in-depth analysis of one case as a study higher education institution, the University Católica del Maule (UCM).

University Católica del Maule is one of 25 universities which comprise the Council of Rectors (CRUCH). These universities, traditionally subsidized by the state, can be further differentiated by, for example, the level of their research activity, or their geographical location, but particularly related to the focus of this study, the student demographic attending. Three broad groupings of institution can be identified – those receiving mostly students from private schools and higher socioeconomic strata, those with a high percentage of students from middle socioeconomic strata, and those institutions with a high concentration of students from socially vulnerable backgrounds. Students from lower socioeconomic quintiles in Chile have high aspirations for university study, and their families see university education as an engine for social mobility, to achieve a standard of living superior to their parents’.

For institutions serving a large proportion of vulnerable students, the level of resources received from the state would be expected to be consistent with the state policy of strengthening equity. Such a policy would give regional institutions effective tools and

mechanisms to enhance positive educational outcomes for students, and socioeconomic aspirations of their families. However, there is only a weak connection between the demographic profile of students and the resource allocations for universities.

Institutions with large proportions of students who come from backgrounds with social and academic deficiencies face a number of challenges allocating adequate resources to meet students' needs compared to institutions catering for better-prepared students. The quality and amount of resources universities invest to support students from disadvantaged backgrounds has important implications for their retention, progression, completion and access to employment opportunities after graduation.

University Católica del Maule is a private higher education corporation founded in 1991, initially as a branch of Pontificia Universidad Católica de Chile. It belongs to the Bishopric of Talca and by virtue of its public character it has been a member of the Vice-chancellors' Council of Chilean Universities since its foundation. Therefore, the selection of new students is regulated by the National University Selection Test, and the university is recognized by the state as a recipient of public funding, such as scholarships and loans for the students, and direct public allocation among other benefits pertaining to traditional universities.

The criteria for selecting UCM as a case includes the following:

- The institution is located in a region, and notably one of the poorest areas in Chile with low levels of human capital, income and socio- economic development.
- The institution was established within the period of democratic governments.
- It is an institution drawing more than 70 percent of the students from the local Maule Region, from lower socioeconomic quintiles and the majority of students have graduated from public secondary schools.
- Despite belonging to the CRUCH universities, and therefore being recognized by the state as a traditional university, UCM receives relatively low levels of public funding.

- It is an institution in which the researcher has had access to current and historical data.

The analysis of the case study presented in this chapter is divided into four parts:

- i. enrolments of students,
- ii. students' academic performance
- iii. the situation of graduates
- iv. an analysis of the resourcing and quality assessment of the University

The first three parts focus on two groups. The first groups consisted of students who attended the university before 2003, and comprise a sampled subset of the cohorts of enrolment in 1998-2001-2003. A sampling method has been chosen consistent with the availability of information, particularly the classification by socioeconomic group (quintile of income), where the information was extracted from written archives, classified and assigned to the student enrolled and randomly selected. Nevertheless, many of the students from each sample cohort could not be classified, as shown in each case in Table 8.1. The sampling was distributed by program according to the number of students enrolled, and randomly selected. A summary of each sample is provided in Table 8.1.

Table 8.1: Sample selected for cohort 1998-2001-2003

	1998	2001	2003
Student enrolled	778	822	870
N° of Cases	166	168	170
Percentage	21.3%	20.4%	19.5%
N° of Careers	11	12	13

Source: Calculated by the Author from UCM database

The second group comprised all students enrolled in cohorts 2005-to-2008. This group was considered worthy of separate identification because the socioeconomic classification was recorded for a significant proportion of students. The number of students at UCM classified by their socioeconomic quintile in the university databases has grown exponentially since

2005. From not having socioeconomic classification in non-electronic data in 2003, 68 percent were classified in electronic records in 2005, rising to 81 percent in 2013.

Data on graduates came from three main sources as outlined in Chapter Five. Although the sample of 23 graduates from the cohort groups 1998-2000-2003 is obviously quite small, it was not the primary source of information on its own. Three additional sources of information provided supplementary data that complemented this. The UCM Alumni community created in 2012 contains data and information on about 2,400 graduates, which relates to graduates' current employment, their type of employment contract (permanent or fixed-term), and the type of institution in which they currently work. This data yields a proxy to their current socioeconomic situation. Second, as part of the tasks of analysis and data collection in 2013 and early 2014, a survey was conducted of graduates in their first and fourth year after graduating from the university, which also provides important information for the purposes of this research. Third a data base developed by the Chilean Ministry of Education, has recently incorporated relevant performance indicators, broken down by program for UCM.

8.1. The Maule Region

Chile is divided into 15 regions including the Metropolitan Region, home of the country's capital Santiago. The Universidad Católica del Maule is located in the seventh region, also known as the Maule Region. The socio-economic development of the regions in Chile has been uneven and Maule region is one of the most disadvantaged. The National Socioeconomic Survey 2011 reported Maule Region's population to be 1,015,763, with 333,030 (or 32.8 percent) living in rural areas. With 32.8 percent, Maule has the highest proportion of rural population in the country, compared with the national percentage of 13 percent (D. S. MIDEPLAN, 2011). In addition, Maule also has a number of indicators that place the region as one of the most socioeconomically disadvantaged regions, such as having the lowest participation rates in higher education (34 percent) high levels of poverty, illiteracy, and percentage of the population belonging to quintiles one, two and three. Table 8.2 provides a statistical comparison between Maule region and the rest of the country.

Table 8.2: Socio-economic indicators by region according to CASEN 2011

	Population below poverty line	Illiteracy	Rate of rurality	% of population quintiles 1,2,3	Years of schooling
Tarapacá	13,1%	1,2%	4,8%	58,6%	11
Antofagasta	7,5%	1,1%	1,5%	48,0%	11,4
Copiapó	13,3%	2,6%	7,7%	57,9%	10,3
Coquimbo	15,3%	3,6%	18,8%	70,8%	10,2
Valparaíso	16,9%	2,3%	8,6%	66,8%	10,9
O Higgins	10,1%	5,5%	28,9%	69,0%	9,8
Maule	16,2%	7,1%	32,6%	76,0%	9
Bio Bio	21,5%	5,1%	16,2%	75,6%	9,8
Región Araucanía	22,9%	5,6%	32,1%	76,4%	9,3
Los Lagos	15,0%	4,5%	29,2%	71,4%	9,3
Aysén	9,8%	4,5%	13,9%	56,1%	9,9
Magallanes	5,8%	1,6%	2,2%	46,1%	10,8
Metropolitana	11,5%	1,9%	3,4%	56,8%	11,3
Los Ríos	17,5%	5,1%	31,0%	72,5%	9,7
Arica y Parinacota	15,7%	1,7%	8,3%	66,2%	11
Total	14,4%	3,3%	12,8%	64,3%	10,6

Source: Calculated by the Author from (D. S. MIDEPLAN, 2011)

Table 8.2 shows that Maule region has the lowest average number of years of schooling in the country (at nine years), the second-highest proportion of people classified socioeconomically within the bottom three quintile (76 percent), the highest rate of illiteracy, and the fourth-largest number of people living below the poverty line.

Of interest too is regional competitiveness, defined as “the potential capacity of the regional economic system to generate and keep in a sustained way, a per capita income growth for its population” (SUBDERE, MIDEPLAN, & INE, 2009, p. 7). Every year in Chile a “regional competitiveness index” is calculated for each region. The index is composed from an algorithm that combines dissimilar variables in an ordinate way, producing an indicator combining the main phenomena that can be linked with competitiveness. Variables include:

economic outcomes, companies, infrastructure, government, innovation, science and technology, natural resources and people. The competitiveness of a region is thus composed of a number of variables that should enhance competitiveness. Education, science and technology are considered particularly important factors within the matrix.

On this index of competitiveness, innovation, science & technology is defined as academic capacity and potential for innovation, key factors in improving productivity, economic growth and the competitiveness of each territory (OCDE, 2009). The education factor encompasses the levels of education and training of the population and the work force, as well as the health of the population (SUBDERE et al., 2009). In this respect the OEDC (OCDE, 2009) declares that the promotion of human capital development should also consider the regional dimension. In the 2008 regional competitiveness report (the latest available report) SUBDERE et al. (2009), identify three main groups of regions: first the most competitive Metropolitan Region and the Magallanes Region (in the southern extreme of Chile); second, in a medium position; Antofagasta, Valparaíso, Atacama, Bio-Bio, Aisen and Los Lagos; and finally the third group with worst outcomes, Tarapacá, O'Higgins, Maule and Araucania. Thus, observing current indicators as well as the capacity of the region to grow per capita income in a sustained way, the Maule Region faces enormous challenges achieving the level of development obtained in others regions in Chile. Consistent with this, Maule's higher education system, as will be demonstrated by this case study, faces equally enormous challenges given the socioeconomic status and educational preparation of students. Barriers must be overcome at all levels – first, being enrolled, second achieving graduation and finally facing a labour market in a difficult region, before achieving the desired social mobility.

8.2. Higher Education in The Maule Region

The Maule Region is significantly disadvantaged in higher education compared to the rest of the country. While in Chile participation rate in higher education reaches about 45 percent, Maule achieves 34 percent, the region with the lowest rate. While coverage is lower, enrolment has increased considerably in recent years, from 13,736 students in 2000 to 61,090

in 2013 (SIES, 2013a), consistent with the rising participation of students in higher education across the country during that period. While in 2000 the students of the Maule region accounted for three percent of all students in Chile, in 2013 the share rose to 5.4 percent. This fact indicates that even though the participation rate is relatively low, the region has also experienced high growth in participation, as shown in Table 8.3.

Table 8.3: Participation in higher education by income quintile and type of institution in Maule Region 2003-2011

Institution/Quintile	2003					2011					2003	2011
	I	II	III	IV	V	I	II	III	IV	V	Total	Total
CRUCH	3%	7%	19%	28%	43%	6%	10%	11%	14%	19%	14%	11%
Private U.	0%	1%	4%	11%	14%	8%	10%	10%	17%	36%	4%	13%
IP	1%	3%	5%	8%	6%	6%	7%	9%	17%	7%	4%	7%
CFT	1%	2%	4%	3%	1%	3%	3%	2%	2%	4%	2%	3%
Total	5%	13%	32%	50%	65%	26%	29%	32%	41%	77%	24%	34%

Source: Calculated by the Author from CASEN

The participation rate grew from 24 percent in 2003 to 34 percent in 2011. Analysing the data by income quintile and by type of institution reveals a large increase in the participation rate of the lower socioeconomic quintiles. While in 2003, five percent of the first quintile and 13 percent of the second quintile attended higher education, the figure rose to 26 percent for the first quintile and 29 percent for the second respectively in 2011. Similarly in 2003 the CRUCH universities were institutions where the majority of students were enrolled, the situation changed significantly in 2011 with growth in the participation rate coming from substantial growth in student numbers from lower socioeconomic quintiles enrolling in private universities. This led to a reversal of fortunes in 2011 when private universities accounted for 13 percent of the total participation rate, while CRUCH Universities needed 11 percent. At the same time there was strong growth in TTC and IP in the region, rising from 4 percent in 2003 to 7 percent in 2011.

The growth in the role of private institutions [university, IP and CFT] also reflected strongly in the participation rate of the lower socioeconomic quintiles' in private higher education institutions. Participation rates in the private universities rose from 0.3 percent and one percent for the first and second quintiles respectively, to 8 percent for the first quintile and 10 percent for the second quintile in 2011. A close examination of Table 8.3 reveals that growth in access to higher education in the Maule region has been generated mainly by private institutions [universities, IPs and CFTs], rather than the CRUCH universities.

Despite the growth in both the number of students and in participation rates in higher education, both at country level and at the regional level, there remains the possibility that numbers may fall in coming years given that a decrease in enrolment is observed in secondary education. While in 2004 there were 986,302 students at national level, in 2013 the figure decreased to 924,904 (about 8 percent), and in the Maule region enrolments decreased from 61,601 to 57,181 (Mineduc, 2013c), a fall of nearly 7 percent. Figure 8.1 provides a summary of the number of students in the Maule region by type of secondary school. This table shows that 48.2 percent of Maule high school students undertook their secondary education in municipal or public schools, compared with the national figure of 36.3 percent.

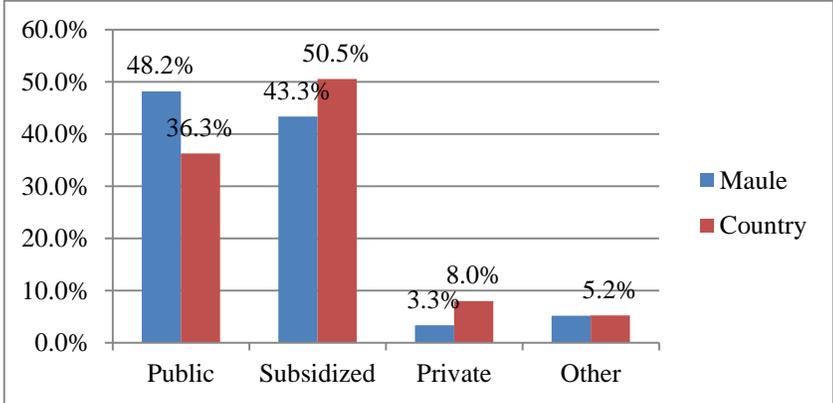


Figure 8.1: Distribution of students by type of secondary school in Maule's Region 2013
 Source: Calculated by the Author from (Mineduc, 2013c)

The growth experienced in demand for higher educational has greatly increased supply in terms of programs as well as institutions, nevertheless given the socioeconomic situation of

youth and their families particularly in Maule Region there are important challenges for the regional higher education system as well as for individual institutions.

Prior to the 1981 reforms, the region had branches (or colleges) of a number of national higher education institutions including the Technical State University, the University of Chile and the Catholic University of Chile. In the wake of the reforms, besides allowing the establishment of private universities and changes to financing policies as described in chapter six, branches of state universities in the regions began to merge and become autonomous. For the Maule region, the existing branches of the Technical State University and the Universidad de Chile were merged to become the University of Talca in 1981. Similarly, in the same year were founded the Universidad de Antofagasta, La Serena, Valparaíso, Universidad de la Frontera (in Temuco, capital of the ninth region), and Universidad de Magallanes in the extreme south. In 1982 in the First region Arica (fifteenth region) was founded the Universidad de Tarapacá, and later, Universidad de Playa Ancha and Universidad Metropolitana in 1985, Universidad del Bio-Bio in 1988, and finally Universidad de los Lagos and Universidad Tecnológica Metropolitana in 1993 (Cruz-Coke, 2004). Thus 16 state universities were created all of which formed the grouping known as the Council of Rectors (referred to as CRUCH universities throughout this thesis).

With respect to traditional private Universities, also belonging to the CRUCH grouping, there were six private universities having public-good characteristics and receiving government funding. All of these were located in regions with the exception of the Pontificia Universidad Católica de Chile in Santiago. The latter had created three branches in regions, in Temuco (Region IX), in Concepción (Region VIII) and in Talca (VII or Maule region). Since 1983, following the policy of regional autonomy and the foundation of regional universities, the Universidad Católica de Concepción was founded, and in 1991 the Universidad Católica de Temuco, and the Universidad Católica del Maule. This completed the group of twenty five universities that comprise the CRUCH group, sixteen of them belonging to the state and nine being private with public characteristics. Thus, by 1991, the seventh region of Maule had two universities, one public and one private for public purposes, both recipients of public resources and both Vice-chancellors Committee members.

The 20-year period 1991-2011 saw an exponential growth in higher education in Maule reaching 20 institutions in 2013 as shown in Table 8.2. (Note that these figures do not include the university which closed prior to 2013, Universidad del Mar):

Table 8.4: Higher Education Institution in Maule’s Region: 2013

VCC Universities	2
Branches of VCC Universities	0
Branches of Private Universities	5
Professional Institutes	7
Technical Training Centres	6
Total	20

Source: Calculated by the Author from (CNE, 2014)

Data from the Ministry of Education (2013), show that 15,029 students were enrolled in institutions of higher education in the Maule Region in 2013. This was a significant increase, reflecting national trends, comprising enrolment in Technical Training Centres and Professional Institutes, which together represented 62 percent of the enrolment year (26.7 percent CFT and 35 percent IP). Universities accounted for 38 percent of enrolments, of which 22 percent were in the two CRUCH universities, that is Universidad de Talca and Universidad Católica del Maule. The number of students enrolled in universities dropped abruptly by 11 percent between 2012 and 2013, due to closure of one institution, Universidad del Mar and due to a media scandal about possible corruption in the quality accreditation process of a second institution, the Universidad Autónoma de Chile. This situation became an emblematic case for higher education in Chile, since for the first time the Ministry of Education decided to close a private University (Universidad del Mar) without warranties of quality or future sustainability. The effects on enrolment are shown in the graph in Figure 8.2.

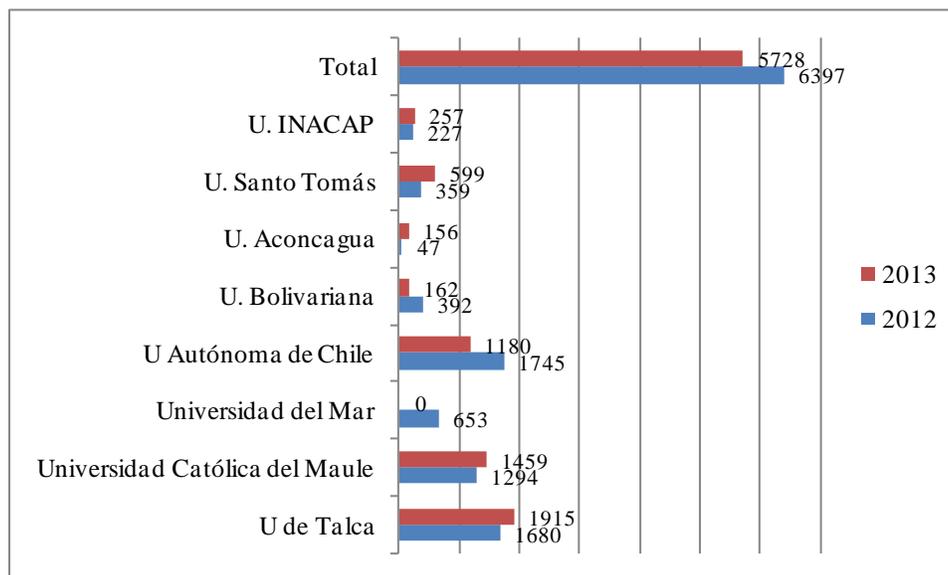


Figure 8.2: Enrolment in universities in the seventh region for 2012-2013
Source: Calculated by the Author from (CNE, 2014)

Enrolment in the private universities dropped abruptly. Universidad del Mar enrolment fell from 653 students in 2012 to zero in 2013, and Universidad Autónoma de Chile from 1,745 in 2012 to 1,180 in 2013. The dramatic case of Universidad del Mar deepened discussion regarding the quality of higher education and regulation of existing higher education institutions in the country. Despite the decline in university enrolment and the growth in enrolments in professional institutes and technical training centres, the overall participation of students in the universities was the largest recorded [Figure 8.3].

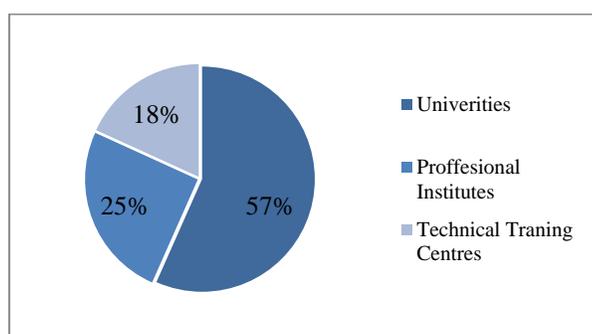


Figure 8.3: Distribution of students in the Maule Region by type of institution 2013
Source: Calculated by the Author from (CNE, 2014)

Almost 60 percent of the students in higher education in the Maule region were in universities, with a total of 25,895 students (CNED, 2014), 70 percent of whom come from within the region (Reich, 2011). The distribution of students amongst the universities in the Maule region is shown in Figure 8.4.

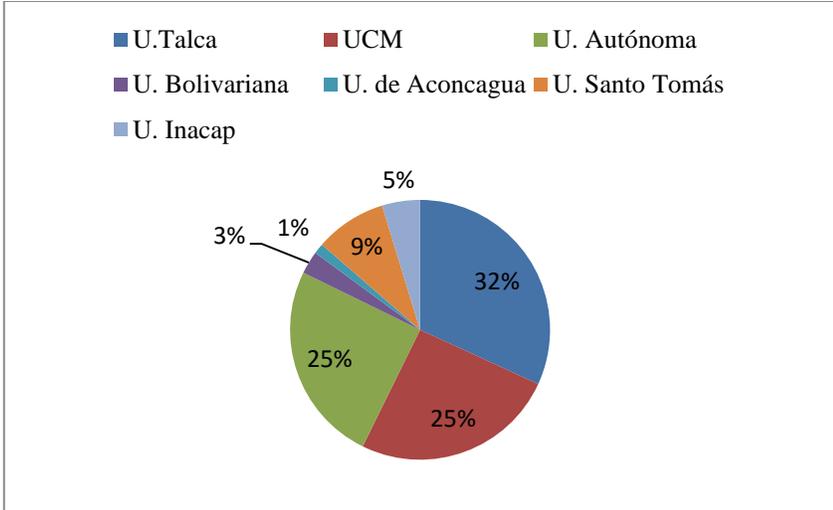


Figure 8.4: Participation of students in the universities of the Maule Region 2013
 Source: Author from (CNE, 2014) (Graph in file Base 2005-2014)

The CRUCH universities had the largest number of students (57 percent), led by Universidad de Talca (32 percent), followed by UCM (25 percent).

The primary driver for the rapid growth in higher education in the Maule region was competition. With growth in student numbers especially coming from lower socioeconomic quantiles, universities face increased challenges. Students from backgrounds characterized by lower academic, cultural and social skills demand more substantial injection of financial and other resources, as well as new ways of teaching to enhance students’ technical knowledge, and their cultural and social capital.

8.3. Enrolment of students in UCM

As a member of the CRUCH University grouping, the Universidad Católica del Maule (UCM) participates in the process of selecting students based on the University Selection Test. In order to develop a sufficiently broad view over time the enrolment trends for students between 1998 and 2008 were considered, divided into two groups A and B. Group A comprised enrolment cohorts 1998, 2001 and 2003. Given the number of students enrolled in those years, but recognising that data recording socioeconomic classification was available for only some students, sampling for Group A was based primarily on availability of socioeconomic classification data. The sample consisted of 166 students admitted in 1998; 174 for 2001 and 171 for the 2003 cohort.

The second group (Group B), with the availability of information about their socioeconomic classification allowed the incorporation of all students registered at UCM in 2005, 2006, 2007, 2008 and 2009. It should be noted that for the analysis of socioeconomic classification according to quintile of income enrolment the cohorts of 2006, 2007 and 2008 were considered, whereas for analysis of the type of secondary school of origin and PSU (University Selection Test) results all students admitted from 2005 to 2009 inclusive were considered. Figure 8.5 summarises the characteristics of the two sample groups:

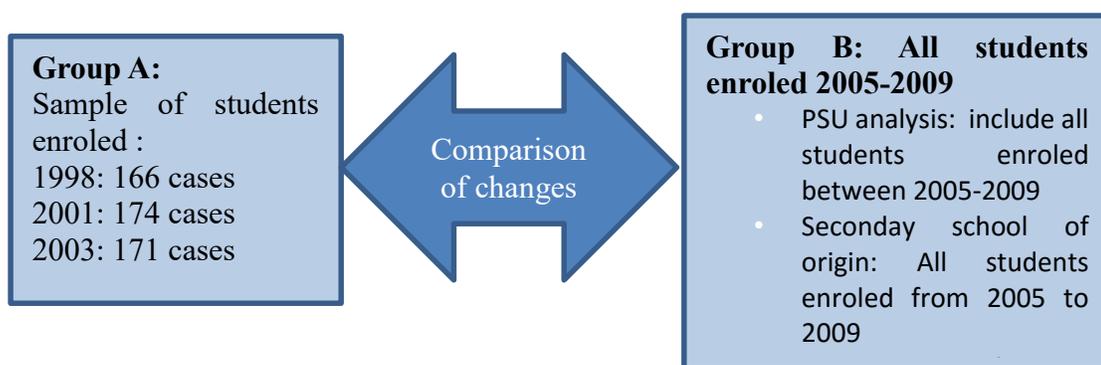


Figure 8.5: Student groups for the analysis of enrolment trends at UCM
Source: Developed by the Author from UCM data

The first UCM Case Study group to be analysed is Group A, which is highly concentrated in quintiles one and two, with these students comprising 71 percent in 1998, 76 percent in 2000 and 68 percent in 2003. Table 8.5 shows the distribution of Groups A students by socioeconomic quintiles.

Table 8.5: Student classification by quintile of income Group A: Enrolment cohorts 1998, 2001, 2003

Quintil	1998		2001		2003	
	%	N	%	N	%	N
Q1	47,0%	78	48%	83	44%	75
Q2	23,9%	40	28%	49	24%	41
Q3	16,2%	27	14%	24	21%	36
Q4	12,0%	20	10%	18	9%	16
Q5	0,9%	1	0%	0	2%	3
Total	100%	166	100%	174	100%	171

Source: Calculated by the Author from UCM data

The pattern of distribution of students at UCM reflects the national pattern in CRUCH universities with high proportions of students from lower quintiles who come mostly from public or publicly-subsidized secondary schools (Table 8.6).

Table 8.6: Composition of UCM students by type of secondary school: Sample 1998-2001-2003

Type of school	1998		2001		2003	
	%	N	%	N	%	N
Public	58%	96	46%	79	58%	98
Public - Private	37%	61	52%	91	41%	69
Private	5%	8	2%	4	2%	3

Source: Calculated by the Author from UCM data

Only a very small percentage of students came from private secondary schools. Nevertheless and in contrast to patterns previously discussed (see Chapter seven), regarding the low scores obtained by students from public schools in the National University Selection Test (PSU),

the average scores (in mathematics and language) of students enrolled in UCM were high, more than 600 points for each group (Table 8.7).

Table 8.7: Average score on NUST (Mathematics and Languages) by income: Sample 2001-2003

	PSU Average	
	2001	2003
Q1	611.5	613.5
Q2	623.4	607.5
Q3	657.8	627.0
Q4	625.6	602.2
Q5		682.8
NI	606.0	626.5
TOTAL	615.516	617.2

Source: Calculated by the Author from UCM data

Data on PSU average scores was not available for the 1998 cohort, and there was no data for students from the fifth quintile in 2001 since the sample did not include any students from the fifth quintile for that year and this group comprised a very low percentage in 2003.

Table 8.8 shows the high concentration of UCM Case Study Group B (2005 to 2008 enrolment cohorts), in the first and second quintile.

Table 8.8: Student classification by quintile of income, cohort of enrolment 2007-2008

	2006		2007		2008	
	N	%	N	%	N	%
Q1	347	33%	452	39%	520	48%
Q2	190	18%	203	17%	189	17%
Q3	152	15%	117	10%	130	12%
Q4	102	10%	138	12%	104	10%
Q5	63	6%	75	6%	47	4%
NI	187	18%	180	15%	100	9%
Total	1041	100%	1165	100%	1090	100%

Source: Calculated by the Author from UCM data

Comparing both groups A (Table 8.5) and B (Table 8.8.) shows that the proportion of students from quintiles one and two declined from 76 percent in 2001 period to 51 percent in 2006. The recovery in the proportion of students in the bottom two quintiles in 2007-2008 was consistent with the national trend which saw the greater government aid made available to students since 2007. Similarly, the number of students from the fourth and fifth quintile groups in the period 2006-2008 reversed the situation in 1998-2003 where there were almost no students from these quantile groups. Additionally, information provided by the UCM unit responsible for socioeconomic student evaluation in relation to government aid shows that students unclassified (NI) did not apply for scholarships or loans, probably because they did not require financial assistance and could reasonably be classified in the fourth or fifth quintile. An alternative interpretation could be that such students belong to lower socioeconomic groups but have benefited from grants provided to the working parents or from other sources; this is considered to be less likely than the former explanation.

The secondary school origins of Group A students admitted to UCM in the period 1998-2003 was predominantly public schools (comprising 58 percent in 2003) and subsidized schools (37 Percent), with only five percent of students from private schools (Table 8.6). This trend did not change significantly for Group B sample (Table 8.9) except for the growth in the proportion of students from subsidised schools which grew to 47 percent in 2009.

Table 8.9: Student classification by type of secondary school 2005-2009

Type of School	2005		2006		2007		2008		2009	
	%	N	%	N	%	N	%	N	%	N
Public	54%	529	54%	556	56%	638	48%	527	47%	500
Public Private funding	36%	353	38%	387	35%	402	43%	469	47%	490
Private	5%	52	5%	53	5%	60	5%	60	6%	58
NI	4%	38	3%	32	3%	36	4%	43	0%	5
Total	100%	972	100%	1028	100%	1136	100%	1099	100%	1053

Source: Calculated by the Author from UCM data

The increase in participation rates for students from lower socioeconomic quintiles at UCM reflects the regional and national trends. However, the trend towards greater incorporation of

fourth and fifth quintiles as well as students from private schools at UCM may be explained by the creation of a medical degree in 2004, a program that given the costs and academic requirements primarily attracts students from these socioeconomic groups.

It is also important to note the decline in the proportion of students from public secondary schools at UCM. This reflects the situation at national level where municipal or public schools are strongly losing their share of student enrolments, with numbers reducing by more than 500,000 students in the last ten years, while the public-private sector has attracted more than 379,000 students in the same period, which today represents 54 percent of all school students in the country (Herrera, 2014). This situation reflects dissatisfaction or lack of confidence in public school education by low-income families who see quality education outcomes for their children as a key to social mobility, and have lost trust in public schools to give their children access to better life opportunities in the long-term

The academic background of students at the point of enrolment measured by scores on the PSU show that at enrolment Group A students had an average score in mathematics and language of 615 points in 2001 and 617 in 2003 (Table 8.7), compared to Group B students with a range between 571 and 588 points in 2005 and 2009 respectively (Table 8.10). Analysis of data by secondary school of enrolment (it was not possible to break down PSU by quintile of income), shows that students from public schools achieve the lowest PSU scores compared with subsidised and private schools.

Table 8.10: Average score on PSU (Mathematics and Languages) of UCM students by type of secondary school, 2005-2009

	2005	2006	2007	2008	2009
Public	563.98	563.23	569.39	572.86	583.37
Public Private funding	577.03	573.69	576.22	578.17	588.76
Private	617.4	630.39	633.12	624.8	635.15
UCM Average PSU	571.48	571.02	575.03	577.99	588.31

Source: Calculated by Author from UCM data

The trend in lower PSU scores for UCM students indicates deliberate attempts to reduce the importance of selection scores in order to broaden the student catchment and increase access to higher education for marginalized groups from lower socioeconomic quantiles. This reflects the broader policy approach of UCM to reduce barriers to entry to higher education for students from vulnerable backgrounds with greater academic limitations and lower socio-cultural capital. However, this presents enormous challenges for the University at all levels, including curricula, programs of levelling skills for new students, enhancing academic skills among many others.

8.4. Academic performance

While it is important to increase access to higher education, this must be understood as simply the first step, with further challenges being to retain students, develop them and inculcate the skills and knowledge to enable them to improve their future living conditions, and ensure that all of this happens in a timely manner, whereby students complete their tertiary education in the time stipulated by the university. The following sub-sections analyse the academic performance of UCM students using three key indicators namely, dropout rate, completion time and graduation. We use the two sample groups: Group A, students admitted in 1998, 2001, and 2003); and Group B, students admitted from 2005-2009.

8.4.1 Retention and dropout

Retention rates, being the complementary opposite of dropout rates, represent the percentage of students that continue their studies within a higher education institution (CNE, 2011). Himel defines a dropout as “leaving a program before achieving graduation, considering time enough to rule out the possibility of the student re-entering” (Himel (2002). Using this definition, the rate of retention has been calculated by considering all students classified in university records as “eliminated” or “withdrawal” as having dropped out. Elimination relates to academic failure, and withdrawal refers to a student choosing to leave the university. In theory, a student may have withdrawn to carry on studying in another

institution, but no information is available to track students moving between institutions. This could overestimate the true dropout rate across the education system.

Based on the available information, and making reasonable assumptions about observed student behaviour, the retention rate is calculated by dividing the number of students enrolled in the subsequent academic year by all students enrolled in the year for which the calculation is being made. The gap constitutes the number of dropouts. Data from Group A allows an estimation of retention rates for first, second and third years (with exception of cohort 2003, that only includes second year retention).

Table 8.11: Retention rates by quintile of income for first, second and third year.

Quintil	Cohort 1998			Cohort 2001			Cohort 2003 (1)	
	1st year	2nd year	3rd year	1st year	2nd year	3rd year	1st year	2nd year
Q1	95%	82%	73%	88%	78%	73%	93%	84%
Q2	93%	89%	82%	83%	71%	63%	84%	81%
Q3	89%	89%	89%	92%	83%	75%	78%	59%
Q4	86%	79%	79%	100%	78%	67%	83%	75%
Q5	100%	100%	100%				100%	100%
NI	71%	69%	51%	93%	83%	76%	81%	77%
Total	86%	80%	70%	91%	80%	73%	85%	77%

Source: Calculated by Author from UCM data

Table 8.11 shows that overall retention rates in the first year range between 85 percent and 91 percent (ie dropout varies between 9 percent and 15 percent for first year students). While there is no standard for an acceptable level of dropout in Chile, national figures provide indications of what may be reasonable estimates. Retention rates examined in Chapter Seven of this thesis show that first year retention varies between 79 percent and 82 percent (Table 7.8) while retention rates in CRUCH Universities is 86 percent (Table 7.9). These estimates indicate that first year retention rates at UCM are much better than national averages.

Analysis by socioeconomic quintiles presented in Table 8.12 reveals that first year retention rates did not vary significantly across the different quintiles. However, in the period 2007-

2012 the bottom two quintiles performed generally better than the upper quintiles. A number of explanations could be postulated. First, the quality of students coming to UCM from vulnerable socioeconomic backgrounds may have improved over the years, which would be consistent with strong performance by students from quintiles 1 and 2. In the case of higher dropout rates for students from upper quintiles it could be that such students come to UCM in the first year from within the region, acquire university experience and then move to other institutions or programs with greater prestige. Another possible explanation could be that given the large number of students from lower quintiles, the teaching approach and institutional arrangement to accommodate these students at UCM, students from the upper quintiles find it much more difficult to adapt to university environment at UCM which reflects the values of people from lower socioeconomic backgrounds.

Table 8.12: First year retention, enrolment cohorts 2006-2012

	Cohort of Enrolment						
	2006	2007	2008	2009	2010	2011	2012
Q1	90%	95%	98%	96%	96%	90%	94%
Q2	94%	95%	95%	92%	89%	89%	90%
Q3	92%	96%	91%	94%	92%	80%	92%
Q4	96%	93%	92%	89%	82%	80%	95%
Q5	93%	95%	91%	90%	92%	84%	90%
NI	80%	11%	87%	87%	81%	76%	86%
Total	90%	94%	95%	94%	93%	87%	92%

Source: Calculated by the Author from UCM data

The drop in 2011 was the result of the national student strike which affected all CRUCH universities including UCM. Students occupied the university campus for almost four months advocating for government to introduce reform measures to enhance quality, not-for-profit universities and free tuition fees for everyone.

Despite the drop in the figures, particularly in 2011, overall high performance in terms of student retention is observed to be maintained over time, even though the admission of students with lower academic achievement has increased overtime, measured by the PSU score, as has admission of those from the lower quintiles.

At the national level, Ministry of Education (2012a) even though it is recognized that the student dropout rate needs more systematic analysis to clearly identify and explain the factors impacting on student retention. Some of these factors may be linked with parents' education, level of income, type of secondary school and PSU scores.

Similarly, as set out in Chapter Seven, the Economics Department of the Universidad de Chile (2008) identifies three main reasons for students dropping out during the first year: economic problems, academic performance and lack of vocational clarity.

In theoretical terms Frameworks for analysing drop-out rates can be classified into five approaches: Psychological, economic, sociological, organizational, and interaction (Sebastián Donoso & Schiefelbein, 2007; Himel, 2002). Each approach introduces different variables or dimensions influencing the likelihood of students dropping out. The psychological approach revolves around personal characteristics of the students that determine or differentiate between those that abandon their course and those who are persistent. The sociological approach considers external factors, which in addition to the psychological aspects can influence the dropout rate such as the relationship with their peers within the university, the learning environment, or support from the student's family. The economic perspective concentrates on cost-benefit analysis, where the perception of higher social and private benefits than the cost influences students' decisions to persist with their studies, assuming that the capacity to afford their studies significantly influence students' decision-making. The organizational approach considers features of higher education institutions that affect dropout rates, such as the support given by the institution to the students in the form of health services, sports and library facilities among others. The organisational approach places particular emphasis on quality of teaching and pedagogical practice, with special attention to active learning practices, which in addition to increasing student learning, affect students' departure decisions (Braxton, Jones, Hirschy, & Hartley, 2008). Thus the organizational perspective considers variables that are under institutional control and can be influenced by them. Finally the interaction approach describes the persistence of the student as a result of a longitudinal process of interaction between the

institution and the social integration of the student. This approach has been largely developed by Vicent Tinto, who recognizes as well two types of dropout, voluntary and involuntary. He explains this perspective as follows:

The process of dropout from college can be viewed as a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experiences in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in ways which lead to persistence and/or to varying forms of dropout (Tinto, 1975).

Given the approaches described above, the factors that explain dropout in Chile, either those mentioned by the Ministry of Education or derived from the study of the Universidad de Chile, mainly are framed under economic and sociological approaches. Besides elements of funding, socioeconomic variables and academic performance or vocational student clarity, both approaches have a common element, that the factors behind the dropout are external to the institution - that is, they relate the dropout rate to the students, their environment or to financing policies.

Now, in the case of the UCM, the profile of students enrolled could be expected to have high dropout rates, however the figures show the contrary, reaching high retention rates and partly demonstrating that student aid policies implemented by the government have managed to at least largely nullify economic factors. Nevertheless, through various mechanisms, UCM has recognized the increasing complexities of students and has implemented programs for support and levelling primarily in the first year, approaching dropping out from the perspective of the "interaction approach" proposed by Vincent Tinto, ie even though there are personal factors of the student, their social environment or trajectory, there are also key institutional elements to achieve student persistence, ie the institution shares responsibility for lowering drop-out rates.

8.4.2 Graduation

Continuing with the analysis of academic performance, an important element is to understand how many students who enrol at the university finally achieve graduation. Available information shows that on average between 40 percent and 55 percent of students complete

their tertiary studies, with the lowest rate being for technical institutions, followed by private universities and the highest rate for CHUCH universities (Cruchaga, 2012; González, 2006). National figures examined in this thesis provide quantitative information that indicate the dimensions of the phenomena, but do not describe the socioeconomic profile of graduates. Nevertheless, in addition to international studies, it is possible to infer that failure to graduate affects mainly the lower socioeconomic groups.

Table 8.13 shows graduation rates for sample Group A, students admitted to the university in the years 1998, 2001 and 2003.

Table 8.13: Graduation rates for the sample of students from the cohort 1998-2001-2003

	1998	2001	2003
Total Graduation	62%	64%	56%

Source: Calculated by the Author from UCM data

Sources of possible error in estimating graduation rates for these cohorts relate to standard sampling estimation limitations, but also to the length of time taken by many students to complete programs. The cut-off date for the table was the second half of 2010. If all students enrolled in each of the sample years 1998, 2001, and 2003 were given five years to complete their program, with cut off year of 2010, 53 percent of the 1998 cohort would have graduated by 2008, and by 2010 the figure rises to 62 percent. The 2003 admission cohort graduation rate is calculated as 56 percent, but it needs to be appreciated that even in 2010 some students were still enrolled at the university and not yet finished their studies

Table 8.14: Graduation rates by quintile of income for the sample of students from the Cohort 1998-2001-2003

	1998	2001	2003
Q1	65%	61%	59%
Q2	64%	58%	48%
Q3	79%	75%	52%
Q4	71%	56%	58%
Q5	100%	-----	100%

Source: Calculated by the Author from UCM data

An analysis of the graduation rates by socioeconomic quintiles show that the results are varied but there seems to be no relationship between income quintile and rate of graduation (Table 8.14). Additionally, it is necessary to consider that the greatest numbers of cases are concentrated in quintiles one, two and three, with quintiles four and five represented by very small numbers of students. For example, in 2001 the sample does not include any student in quintile five, and in 2003 only two cases were included. Graduation data up to August 2013 from Group B, comprising all students enrolled from 2005 to 2008 is summarised in Table 8.15.

Table 8.15: Graduated by quintile of income to August 2013, Group B Cohort of Enrolment 2005-2008

Quintile	Cohort of Enrolment			
	2005	2006	2007	2008
I	75%	59%	45%	38%
II	76%	68%	55%	27%
III	73%	61%	52%	32%
IV	76%	66%	63%	39%
V	46%	56%	56%	34%
Total Quintiles	75%	62%	51%	35%
Total Graduated (1)	65%	59%	48%	34%

Source: Calculated by the Author from UCM data
 (1) Consider all graduates from cohort of enrolment

By the cut-off date in the table above, August 2013, there is in theory sufficient time for all Group B students to have completed their programs. However, even considering only national-average figures, it is known that the time taken to graduate can be up to 40 percent more than the rated time. Therefore table 8.15 could be considered as representing realistic graduation rates for the 2005 cohort only, as from enrolment-years 2006 onwards, students would still be enrolled in the university and not yet completed their studies in 2013. The total graduation rate for the 2005 cohort is 65 percent.

It is relevant for the purposes of this thesis to examine more closely the graduation rates of the lowest quintiles. For the 2005 cohort for example, even though 65 percent of all students graduated, for quintiles one, two and three the rates were 75 percent 76 percent and 73 percent respectively. For the subsequent cohorts, as for Group A, no clear trend or correlation between socioeconomic status and graduation rate can be observed.

Two conclusions can be drawn from data presented in this section. First is that UCM has achieved higher graduation rates than national averages and, the second is that there is no relationship between socioeconomic status and the graduation rate, (ie any student entering UCM on average has the same chance of graduating, independent of socioeconomic background).

8.4.3 Completion Time

As well as being similar to access, dropout, and graduation, completion time is an important measure of quality and efficiency, as well as being a relevant equity indicator. In fact, those that achieve enrolment in higher education, persevere and achieve graduation should be able to do so in reasonable time, and their socioeconomic origin should not be a factor determining how long it takes to complete tertiary studies. This is a matter that affects the institution, government and students, raising the cost of graduating, increasing indebtedness, and delaying the beginning of professional life.

Analysis of completion times in Chapter Seven revealed that the ratio of actual time versus nominal time taken by students to complete a program was 1.35. That is, on average

completing a program in a university takes 35 percent more than the nominal time, a situation that is slightly better in private than in CRUCH universities (1.36 versus 1.33), and worst in Technical Training Centres (1.42).

The completion time for students at the Universidad Católica del Maule is better than other CRUCH and private universities in Chile. An analysis of the sample cohort (group A) who enrolled in 1998, 2001 and 2003 and graduated in 2009 is presented in the following section to illustrate.

Table 8.16: Completion time by quintile of income, based on sample of cohort of enrolment 1998-2001-2003

	1998		2001		2003	
	Average	n	Average	n	Average	n
Q1	1.21	35	1.09	24	1.06	28
Q2	1.20	18	1.18	13	1.06	13
Q3	1.15	15	1.16	9	1.00	7
Q4	1.20	10	1.32	5	1.05	7
Q5	0.90	1			1.00	1
NI	1.19	21	1.11	52	1.08	26
Total	1.19	100	1.13	103	1.06	82

Source: Calculated by the Author from UCM data

For the whole group of graduates from the cohort of enrolment 1998, which is near 69 percent, it took them, on average, 19 percent longer to complete their studies. For this cohort group, those coming from quintile one were delayed more than those from higher quintiles (21 percent). However, there was no significant gap. Table 8.16 also shows that total average completion time for all quintiles decreased for 2001 and 2003. This does not necessarily reflect an improvement of the situation, as it is necessary to consider that these data are calculated in 2009 for all those who had graduated at that time, and it is likely that some students were still finishing their programs, especially for the 2001 and 2003 enrolment cohort group. Data from enrolment cohort 2005 to 2008 (data taken to August 2013) can however complement the information and strengthen the conclusions.

Table 8.17: Completion time by quintile of income: Cohort Group B 2005-2008

	2005		2006		2007		2008	
	Average	N	Average	N	Average	N	Average	N
Q1	1.21	198	1.1	203	1.0	202	1.02	195
Q2	1.20	165	1.1	130	1.07	112	1.01	51
Q3	1.16	85	1.01	92	1.08	61	1.01	41
Q4	1.11	37	0.99	67	1.09	87	1.00	41
Q5	1.07	6	1.14	35	1.13	42	0.99	16
Total	1.20	491	1.12	527	1.07	504	1.01	344

Source: Calculated by the Author from UCM data

Table 8.17 corroborates the analysis presented on graduation rates that there is no significant relationship between completion time and socioeconomic status. For the 2005 cohort, for example, graduates from quintiles one, two and three take on average longer times than those from quintiles four and five. However for the 2006 and 2007 cohorts, students from the fifth quintile take on average longer than all other quintiles. The situation reverses again for the 2008 cohort and the higher the socioeconomic quintiles' completion time is better than the lower quintiles. This analysis shows that UCM performs better than the average for the Chilean higher education system despite the challenges the university faces on a number of fronts.

Although clear evidence of a direct correlation between time to graduation and socioeconomic status is not found, it is necessary to remember the preponderance of pedagogy students at UCM, where at the national level, in addition to low relative dropout rates, reaches good levels of completion time. (Table 7.11).

Moreover, independent of this institutional relationship, in nominal terms and from an international perspective, undergraduate programs in Chile are overly long, as explained in Chapter 8, becoming an extra barrier that vulnerable students must face, given the opportunity cost and direct costs of study this means to them, but even more generally the nominal time is on average hardly ever achieved and normally programs take an additional percentage of time, making the situation even more difficult for students in lower quintiles.

In this sense, even though the government has called on institutions to reduce the nominal duration of undergraduate programs, it has not made much progress; for example at UCM only the curricula of schools of education have been cut from 10 to 9 semesters.

8.4.4 Graduates and Employment

The employment situation of graduates has been analysed using three sources of information: a survey conducted by the author at the end of 2010, the data base of the UCM Alumni Community which served as the basis for a survey carried out by the Planning and Development Department of the UCM in late 2013 and early 2014, and information from the Ministry of Education.

8.4.4.1 Interview of graduates

The instrument adapted was developed by Florencia Torche in the context of her study of social mobility in Chile (Torche & Wornald, 2004). Initially an attempt was made to survey all graduates included in the sample 1998-2001-2003 by phone. However, the response rate was too small for meaningful analysis. Another approach was to contact sample Group A, students enrolled 1998, 2001 and 2003 who graduated to 2009. This group were surveyed in the form of an interview. The group interviewed ultimately comprised five graduates from the 1998 enrolment cohort, ten from the 2001 cohort, and eight graduates from the 2003 cohort.

The geographic origin of the group interviewed consisted of 21 from the seventh region: ten from Talca, the capital of the region, two from Curicó (provincial capital); two from Linares (provincial capital) and the remainder from smaller towns within the region such as San Clemente, Molina and Constitucion with less than 50,000 habitants, and two from rural areas. Regarding their secondary education, only one of them came from a private school, 11 from public schools and 11 from subsidised schools, with almost all of them declaring that their academic performance at secondary school was average of their class, and only two of them indicating they were amongst the best students.

Socioeconomically, 19 of them lived with parents when they were enrolled at UCM, and the same proportion declared that the main breadwinner was the father. In educational terms all but one of the cases the parents reached primary level or above. The most common educational level, for both mother and father, was secondary and technical level. In only two cases the father reached tertiary level. In terms of assets, in 19 cases parents had their own house and basic articles such as a television, washing machine, microwave etc. However classifying the level of their houses from 1 to 10, with 10 being the highest standard of house, half of them ranked their homes below 5, and only one considered that his house was level 10 (considering the level of standard of housing as one with higher levels of comfort and quality, level 10 being a house of a wealthy family). In one case, the parents had a second house as an investment for rent, and in only four cases did parents have any savings. In terms of occupation of the parents, most of them were workers, followed by owner-operators of their own small business, and only four of them had supervision roles overseeing other workers.

After graduation and with some years of employment, there were indications that the situation of those interviewed slowly diverged from their parents'. The obvious difference from their parents was that they had a professional career based on their university qualifications. Of the 23 cases, 19 have a formal employment contract (full-time permanent employment), 11 in the private sector and 8 in the public sector. The distribution of type of work between graduate participants and their parents (inter-generational mobility) is shown in Figure 8.6.

Similar to their parents, there remains a high concentration of employees in the private sector, followed by the public sector, self-employed and employer or business partner. Nevertheless, it is important to describe the type of work in each generation, with supervision of other workers being used as a proxy for level in the organisation.

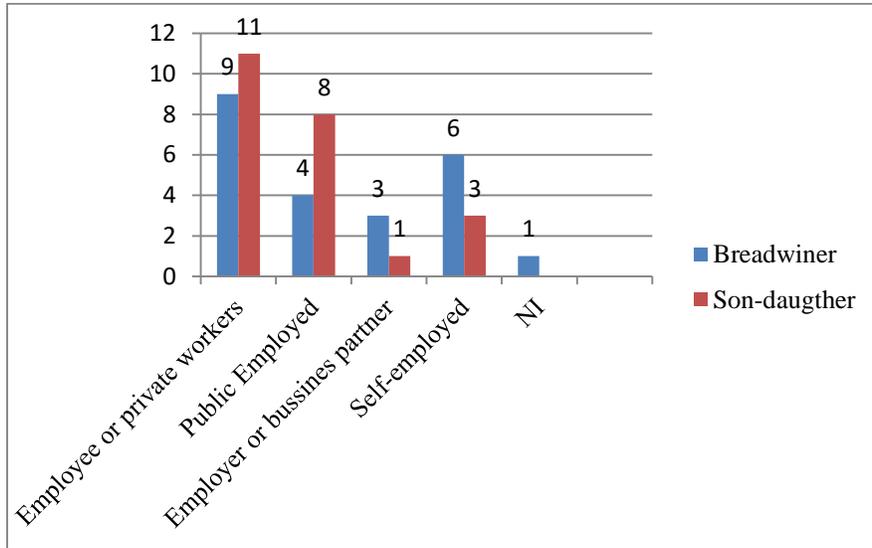


Figure 8.6.: Distribution of type of occupation between generations (parents and children)
 Source: Calculated by the Author from interview to 23 graduates

Table 8.18: Supervision of workers in their work by both generations

	Parent/Main Breadwinner	Son-daughter
Supervision of others	9	15
1-to-9	6	9
More than 10	2	6
NI	1	0

Source: Calculated by the Author from interview to 23 graduates

Regarding the parents' generation, breadwinners having a supervision role in their work (nine) typically supervised fewer than nine workers. The situation changed for the son-daughter generation after graduating from university, whereby 15 respondents reported that they had supervision roles in their current work and almost 40 percent of them oversee more than 10 workers.

Another important change between generations revealed in the survey is related to the size of the organizations they work for. While only four of the parents/main breadwinner worked for organizations having more than 100 employees, in the son-daughter generation 10 work

for such organisations. This is explained by the participation in the public sector, as well by the professions of graduates such as nurses, physical therapists and social workers.

Table 8.19: Size of the organization

	Parent/Manin Breadwinne	Son-daughter
Less than 10	5	4
10 to 100	5	7
More than 100	4	10
NI	9	2

Source: Calculated by the Author from interview to 23 graduates

In terms of assets owned by both generations, or access to financial markets, measured in terms of having a checking account, the situation is illustrated in Figure 8.7.

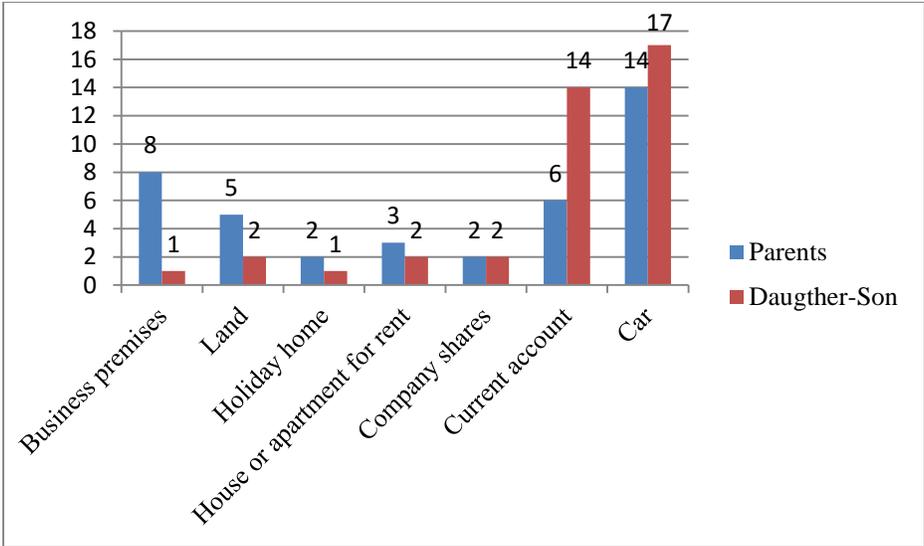


Figure 8.7: Assets owned by both generations
 Source: Calculated by the Author from interview to 23 graduates

Despite the short working period of the son-daughter generation, their ability to access finance or acquire assets is important. For example, 14 respondents reported that they already owned a car, two held shares in a company or a property for rent. Similarly access to a checking account or credit facilities at a bank reflected the perception of private banks towards the son-daughter generation possessing a university qualification and being a

professional in terms of expectations of future income. Likewise, reemphasising the short period of time in the labour market, graduates could foresee greater and earlier ownership of assets compared to their parents.

These findings indicate that there are changes in some socio-economic positions of the son-daughter generation compared to their parents. The son-daughter generation perceives a positive change in their housing level, working conditions measured by the level of stability in their work, as well as the type of work given both by the size of the organization and supervisory functions. Access to assets such as ownership of a car, shares in companies, land and property ownership are evidence of intergenerational social mobility produced primarily by the higher education levels of the son-daughter generation.

8.4.4.2 Ministry of Education

Data from the Ministry of Education (Mineduc, 2014) has recently been enhanced to incorporate 17 undergraduate programs from Universidad Católica del Maule, giving information such as probability of finding employment within the first year after graduation, the range of salary to fourth year after graduation among others. Table 8.20 provides a national picture to compare the position of UCM with other higher education institutions at the national level.

Table 8.20: Probability of finding employment within the first year after graduation updated to 2013

	Average	Number of programs
All Universities	82,0%	1126
CHUCH Universities	82,4%	676
Private Universities	78,4%	450
Universidad Católica del Maule	90,2%	17
PI	73,4%	304
CFT	67,0%	207

Source: Calculated by the Author from (Mineduc, 2014)

The probability of finding employment within the first year after graduation for all universities, including private and CHUCH institutions, was 82 percent. Universidad Católica del Maule performed much better than all universities and other higher education institutions with over 90 percent probability of graduates finding employment within the first year after graduation. Professional Institutes and Technical Training Centres have the worst outcomes with over 26-33 percent probability of not finding employment in the first year after graduation. Despite their popularity and perceived prestige graduates from private universities have a much lower average probability of finding employment in the first year of graduation than public universities.

Figure 8.8 provides results of more detailed analysis of the UCM outcomes by program or subject/professional areas.

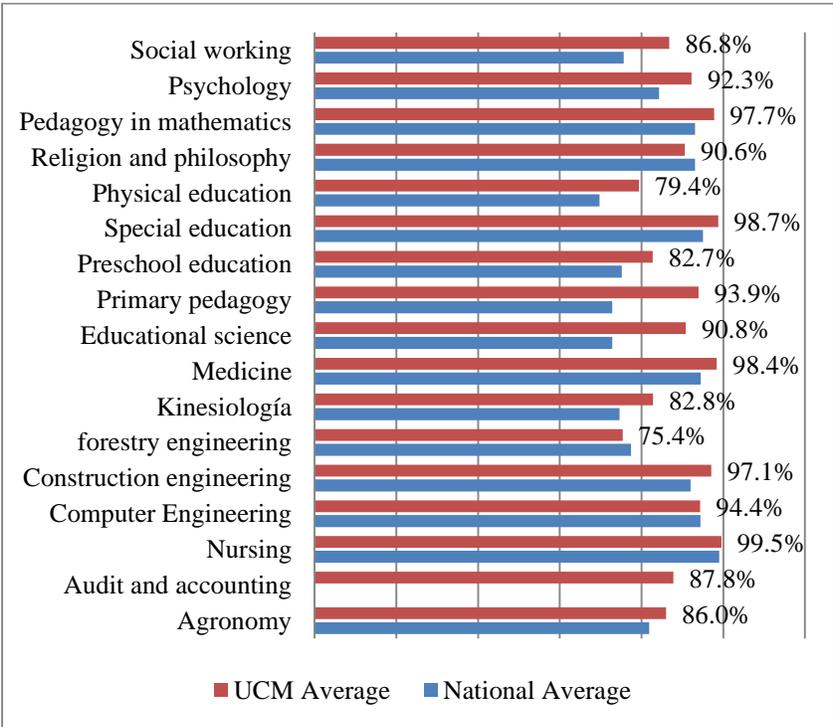


Figure 8.8: Probability of finding employment within the first year after graduation, UCM and national average by each program
 Source: Calculated by the Author from (Mineduc, 2014)

Figure 8.8 shows that overall graduates of UCM across all undergraduate programs have higher employment rates than the national average, with the exception of Forestry Engineering and Theology Education and Philosophy. However, the gap is not significant and both are programs with an annual enrolment of fewer than 10 students.

8.4.4.3 Alumni Survey

As part of the activities of the Planning and Development Office at UCM, the author in 2012 coordinated the implementation of a project funded by the Ministry of Education which aimed to implement a monitoring model tracking university graduates. From this, in 2014 a study was reported that followed up graduates at their first and fourth year after graduation, ie graduates of 2012 and 2009 respectively (Clasing et al., 2014). While the study pursued wider objectives, as a way to complement and obtain more information for the purposes of this thesis some questions concerning the social trajectory of graduates were included.

The sample was calculated using a stratified sampling by undergraduate program, and calculating an "n" sample with an error of estimation less than or equal to 10% with confidence of 95%. Now, since the number of surveys applied finally was less than the sample calculated for each program, the error is very high, therefore has no statistical validity, but it possible to add at the institutional level in which the sampling error is reduced. Thus, at the level of the University as a whole, cohort of graduates 2012 has an associated error of 4.8%, and the cohort sample 2009 has an error of 7.1%, both at 95% confidence.

Therefore at the level of undergraduate programs, data show only a trend, but added at the institutional level have statistical validity.

To start the implementation of the survey by telephone, a sample of 425 graduates from 2012 and 376 from 2009 were identified. Of those approached, survey responses finally obtained were 229 cases for 2012 and 129 cases for 2009 graduates. The first variable of interest relates to employment. Consistent with the analysis and using data from the Ministry of Education discussed in the previous section, UCM achieves a high graduate employment rate. For both cohorts the average employment rate is 94 percent, with the remaining 6 percent recorded as

5 percent unemployed and 1 percent inactive due to looking for work for the first time, as shown in Figure 8.9.

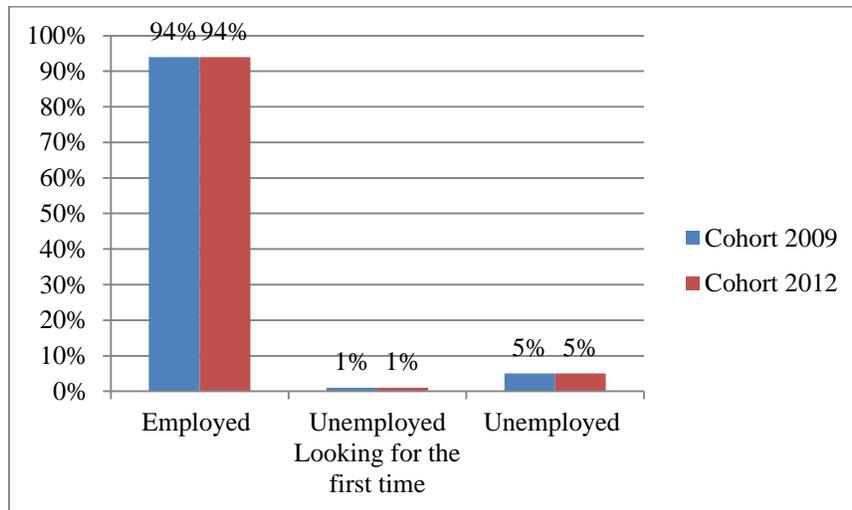


Figure 8.9: Labour situation of graduates
 Source: Calculated by the Author from (Clasing, Durán, & Chacón, 2014)

Most graduates report working as dependent employees, either in public or private organizations. There is no significant variation between those in the first and fourth year after graduation, as shown in Figure 8.10.

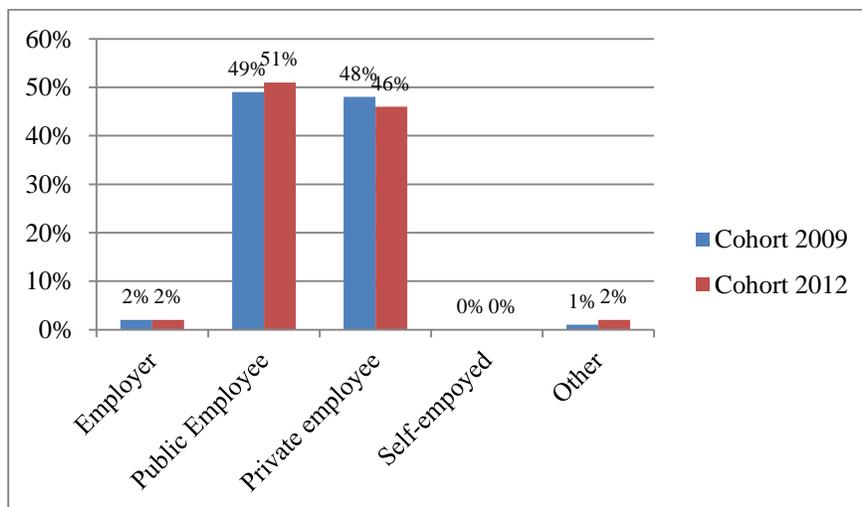


Figure 8.10: Type of employment of graduates
 Source: Calculated by the Author from (Clasing et al., 2014)

With respect to the nature of work within the organization, the large majority of graduates hold subordinate positions (Figure 8.11).

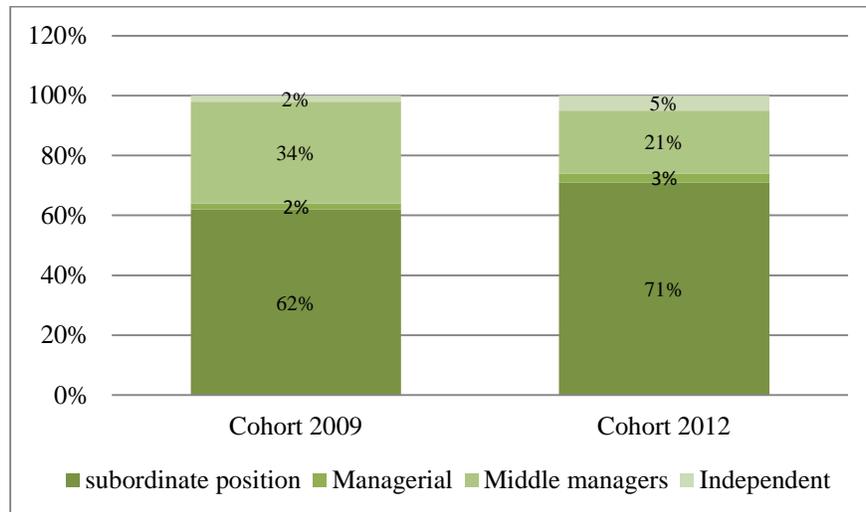


Figure 8.11: Work position within the organization of graduates in 2009 and 2012
 Source: Calculated by the Author from (Clasing et al., 2014)

Although the large majority of respondents reported occupying subordinate positions, the situation appears to change as they gain more experience. While 71 percent of graduates in their first year of work serve as subordinates (taking instructions and not supervising others), by the fourth year this figure drops to 62 percent, with those in middle positions increasing by 13 percent (from 21 percent to 34 percent). Although the figure is lower in terms of people working independently within the organization, this also decreased from five to two percent in the fourth year of employment. Thus, it is possible to observe these graduates move up the seniority ladder within their organizations. An important point to emphasize relates to gender differences. For both first-year and fourth-year graduates, the differences between men and women are significant, as shown in Figure 8.12.

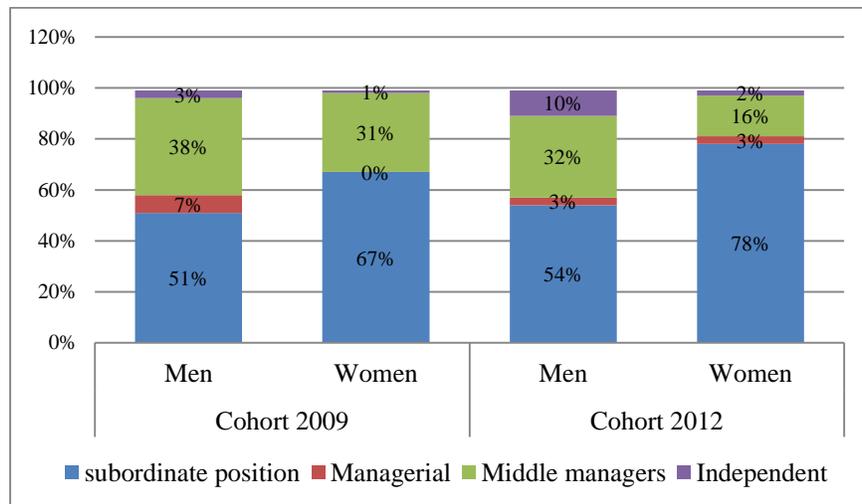


Figure 8.12: Work position within the organization of graduates in 2009 and 2012 by gender

Source: Calculated by the Author from (Clasing et al., 2014)

On a general level, the level of subordination decreases as working years increase, however the situation is more striking in the case of women. For women in the first year of work (cohort 2012), 78 percent have subordinate positions compared to 54 percent of men. By the fourth year of work greater gains have been made by women than men in relative terms, with those in subordinate roles decreasing nine percentage points for women and only three for men. The same situation is observed for the position of middle managers. During the first year of work only 16 percent of women are in managerial roles compared with 32 percent of men. By the fourth year of work there is strong growth of 31 percent for women compared with only six percent for men.

Another important variable considered in this study is monthly income after graduation. Figure 8.13 shows the distribution of monthly income for both cohorts.

For both cohorts the salaries are concentrated between \$300,000 and \$800,000 Chilean pesos, indicating that higher wage increases with the years of work are not achieved. However, for the 2009 cohort, 29 percent moved to the salary bands between \$800,000 and \$1,000,000 of Chilean pesos, consistent with changes in working positions discussed above.

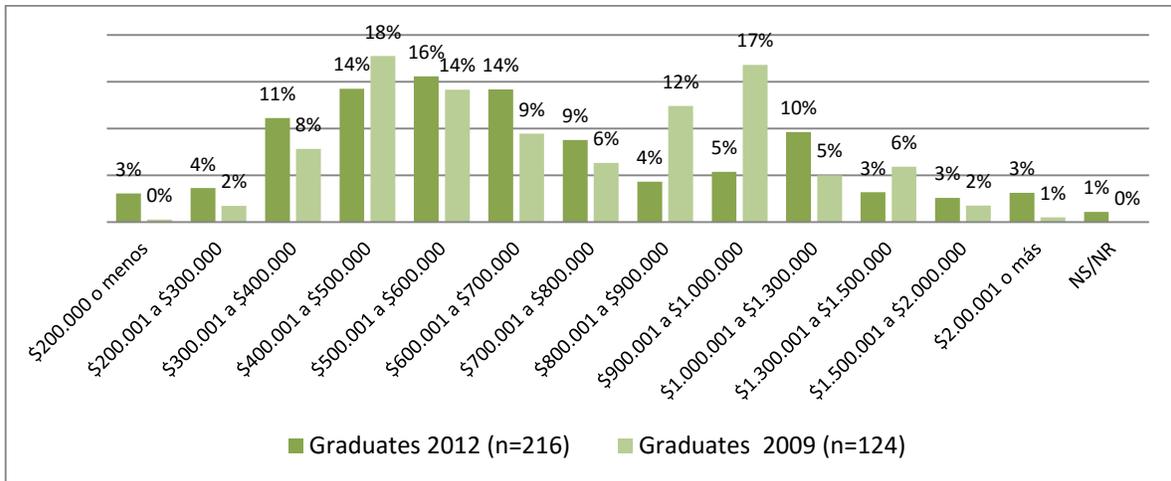


Figure 8.13: Distribution of salaries for graduates 2009 and 2012
 Source: Calculated by the Author from (Clasing et al., 2014)

When asked questions relating to their social trajectory, two thirds of respondents reported coming from families where parents' education level was secondary school or lower, and one third had parents who were graduates or had some experience of higher education. Likewise, most respondents stated that they belonged to the middle class and considered themselves to have advanced socially. Figure 8.14 shows the education of both father and mother for the two cohorts.

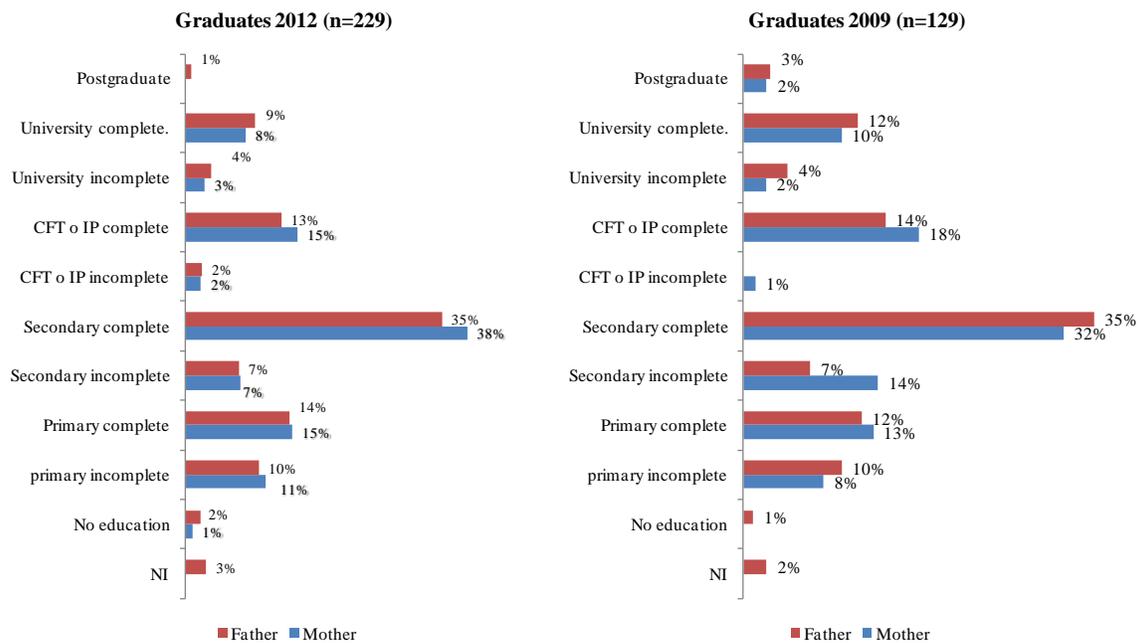


Figure 8.14: Educational level of father and mother to cohorts 2009 and 2012
 Source: Calculated by the Author from (Clasing et al., 2014)

The education level of the majority of parents in both cohorts was limited to secondary school or lower. Figure 8.15 shows the pattern of distribution of respondents' perceptions of their current situations and expected changes to their social class and home of origin.

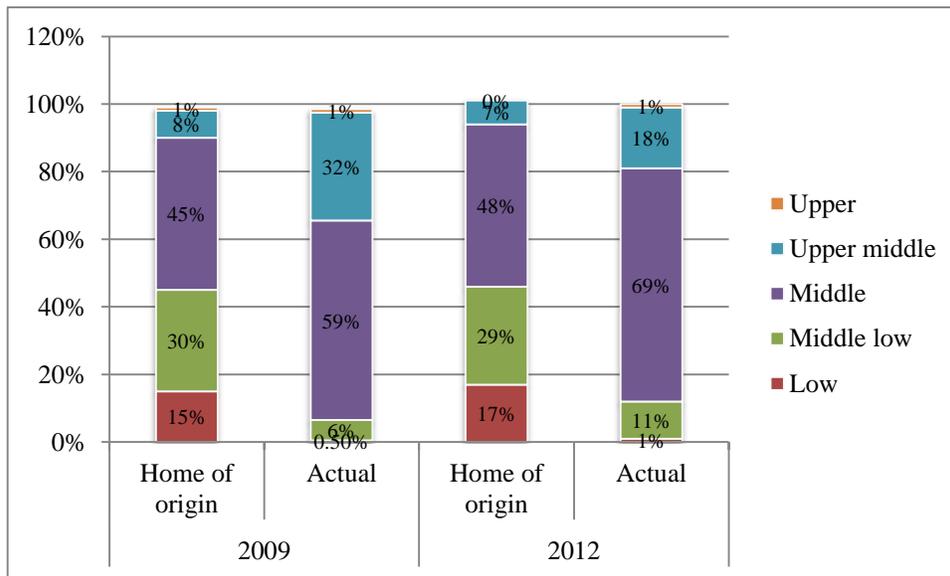


Figure 8.15: Changes in the social class of graduates in 2009 and 2012

Source: Calculated by the Author from (Clasing et al., 2014)

The graph in Figure 8.15 shows that 46 percent of students from both cohorts consider themselves to have come from the lower middle or lower class, another 46 percent from the middle class, 7 percent from the upper middle class and less than one percent from the upper class. For the cohort 2009, (ie four years after graduation), increased mobility is observed, with the number of respondents reporting their current status as lower and middle lower class decreasing from 45 percent in their original home situation to 6 percent in their current situation, and increasing identification with middle class and in particular upper middle class, which rises from 8 percent originally to 32 percent in the current situation. While change is less for the 2012 cohort, it is noteworthy that even only one year after graduation many identified with the higher socioeconomic classes. Identification with the lower middle and lower classes decreased from 45 percent to 12 percent; identification with the middle class increased from 48 percent to 69 percent; and again most significantly identification with the upper middle class increases strongly from 7 percent to 18 percent. These findings indicate

that obtaining higher education qualifications and gaining employment upon graduation significantly influenced the perceptions of graduates about the social class to which they belong despite the social class origins of their parents.

A final matter considered in the survey of graduates which is relevant to this thesis is the perception of respondents about life, first in general terms and secondly in areas such as health, wealth, and relationships. A question put was “All things considered, how satisfied are you with your life at this moment?” with responses solicited on a scale of 1-10 where 1 is very dissatisfied and 10 is very satisfied. Figure 8.16 shows that satisfaction with life increased during the years after graduation from 42 percent at year 1, to 53 percent at year 4.

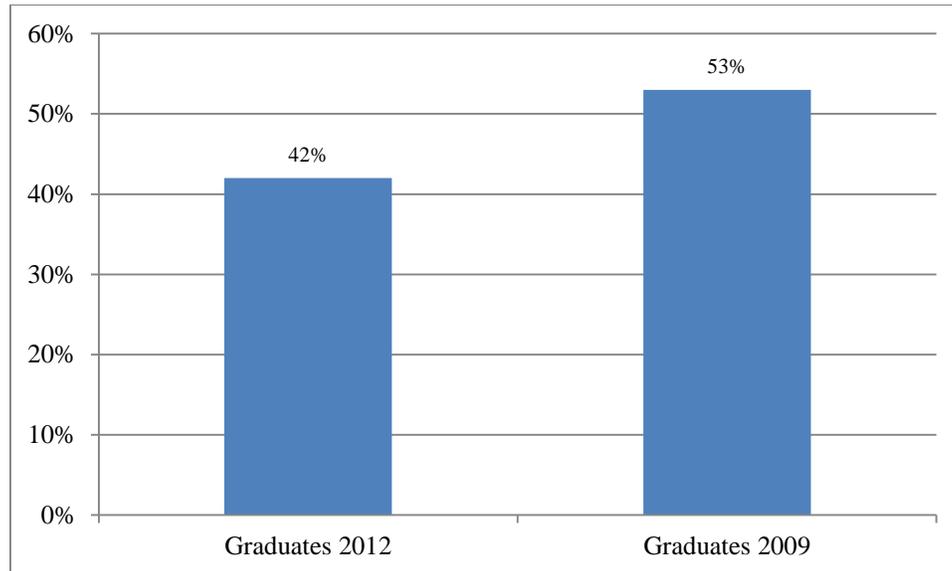


Figure 8.16: Percentage of graduates satisfied with their life
Source: Calculated by the Author from (Clasing et al., 2014)

A national socioeconomic survey by CASEN considered the same question, and on average 30.5 percent of Chileans declared themselves to be very satisfied with their life. Figure 8.17 shows the results of graduate survey, 2009 and 2012 cohorts.

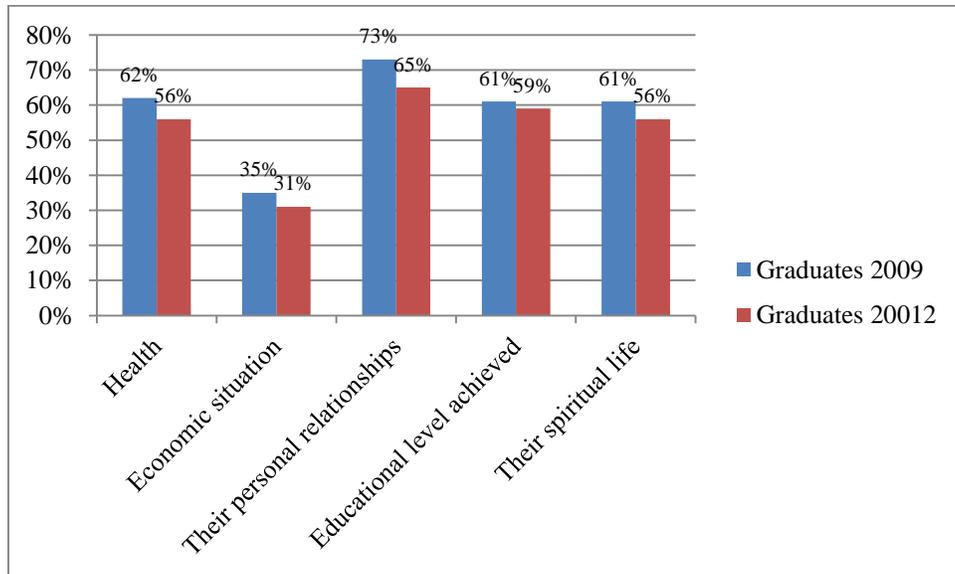


Figure 8.17: Percentage of graduates satisfied with aspect such as their health or economic situation.

Source: Calculated by the Author from (Clasing et al., 2014)

The 2009 graduate cohort reported higher levels of satisfaction in all areas assessed. The area of lowest satisfaction was the economic situation at 31 percent for 2012 graduates and 35 percent for 2009 graduates. These results are consistent with the analysis of remuneration presented above, which is relatively stable, increasing for only 20 percent of respondents between the first and fourth years of work; 2012 graduates achieving 10 percent compared with 29 percent for 2009 graduates.

The analysis from these three paths of enquiry suggest that graduates from the Catholic University of Maule have a high probability of securing employment after completing their studies, which is higher than the national average and also higher than other higher education institutions in Chile. Similarly, UCM graduates report better living conditions than their home of origin, a situation supported by access to better working conditions, characterised by the stability or accessibility of full-time work, and by better positions within the organizations in which they work. In terms of material assets, UCM graduates report better quality housing, access to car, and access to credit from financial institutions. These indicate that UCM graduates perceive that access to higher education and obtaining higher education qualifications positively impact on their capacity to ascend the social ladder, moving beyond

strata to which they belonged before entering university. The foregoing also had a positive impact on their perceptions about life, far surpassing the level of happiness reached by the average Chilean.

8.5. Resource Analysis at UCM

The main sources of financial resources for UCM, as for most traditional universities, are undergraduate student fees, which constitute 73.6 percent of the total income of the Institution. Table 8.21 shows the pattern of the major source of funding for UCM in 2009-2013.

Table 8.21: Sources of revenue of financing for UCM 2009-2013

	2009	2010	2011	2012	2013
Fiscal contributions	1,908,988	2,314,701	3,048,123	4,059,207	4,636,056
Fees	11,891,068	12,676,004	13,784,620	15,340,834	16,741,610
Other income	2,313,429	2,426,446	2,353,878	1,146,611	1,353,760
Total	16,113,485	17,417,151	19,186,621	20,546,652	22,731,426

Source: Calculated by the Author from UCM data

While the financial resources of UCM have increased by 41 percent from 16 billion Chilean pesos in 2009 to nearly 23 billion in 2013, the largest growth has been in student fees and the government's fiscal contribution. Government fiscal contributions have more than doubled, primarily due to growth in the AFD (Public Direct Allocation), UCM's success stems from obtaining two contracts for institutional development, and by the award of funds for two improvement plans, all falling under the Performance Agreement program of the Ministry of Education (Mecesup) in 2013. These funds are essentially seed funds for pilot programmes, which means the institution must find additional future funding from other sources to maintain the long-term sustainability of implemented changes. Student fees have grown in nominal terms (ie not considering inflation) by 41 percent, much higher than growth in the number of students at the University, which has increased by 12 percent (from 5,869 in 2009, 6,584 in 2013).

Figure 8.16 compares the income of UCM in relation to universities nationally, and particularly in relation to other CRUCH universities, using data from the Ministry of Education.

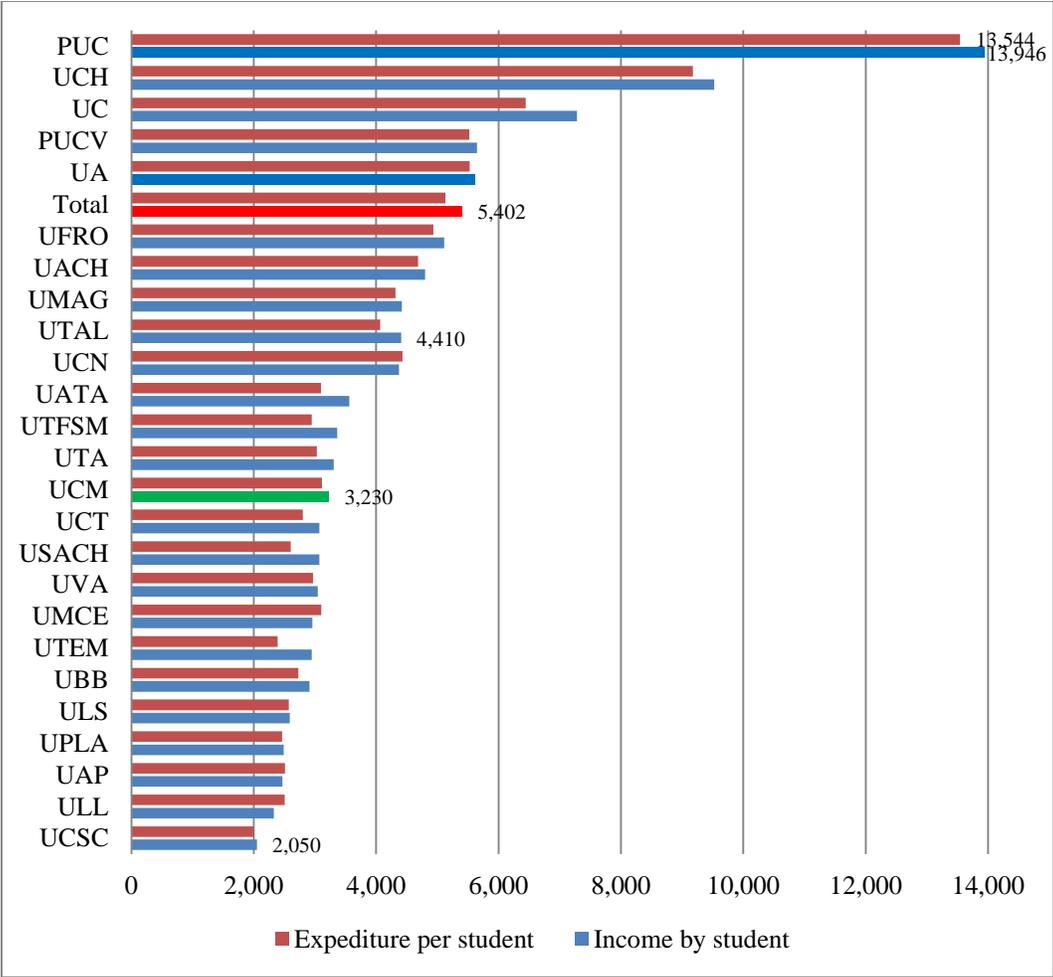


Figure 8.18: Revenues and costs by student for CRUCH 2013
 Source: Calculated by the Author from Mineduc, 2014

Considering all CRUCH universities, all operating revenues, and the total number of students (undergraduate and postgraduate), as well as costs and operating expenses, the chart in Figure 8.18 shows the distribution of income per student among institutions. While at the PUC (Pontificia Universidad Católica del Chile) income per student reaches nearly 14 million Chilean pesos, UCM it is only 3 million and the national average is 5.4 million.

The government treats public and private CRUCH universities the same. While at the PUC the average cost per student is 13 million Chilean pesos (all expenses divided by the number of students), at UCM is only slightly over three million. These figures include all revenues, costs and expenses, ie research, business community relationships and in some cases additional revenue from patents. Taking all these into account, the differences in per-student funding between institutions are considerable.

Resources available to the University to develop academic activities, particularly academic staff and teaching/learning infrastructure are very important. Figure 8.19 shows academic staff resources, both in number and in growth of qualification levels, full-time equivalent (FTE) academic staff growth at UCM.

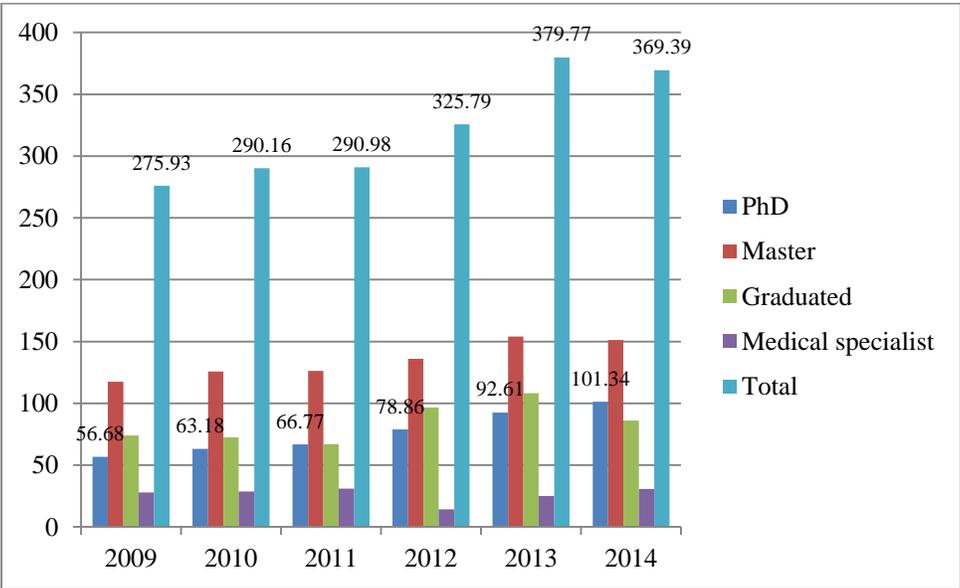


Figure 8.19: Evolution of equivalent full-time academic staff
 Source: Calculated by the Author from UCM data

The FTE academic staff has grown by 33 percent since 2009, from nearly 276 FTE to 369 in 2014. In terms of qualifications, growth in PhD-qualified staff is evident from 57 in 2009 to 101 in 2014, followed by staff who have a masters degree or medical specialties. The developments described in terms of academic staff and their qualifications, places UCM in an important position at national level, resulting in increased direct government funding

(AFD) due to the component of the formula reflecting academic staffing levels. Although not important for other institutions, the growth experienced by UCM, alongside the University of Talca, has been most important within CRUCH institutions. Consistent with growth of academic staff resources both in number and in level of qualification, the ratio of students per FTE academic staff has also increased (Figure 8.20). This is evidence of a steady increase in the ratio of academics and students and thus a better service in the teaching-learning process, but also the institutional definition of addressing most strongly areas such as research, and community relations.

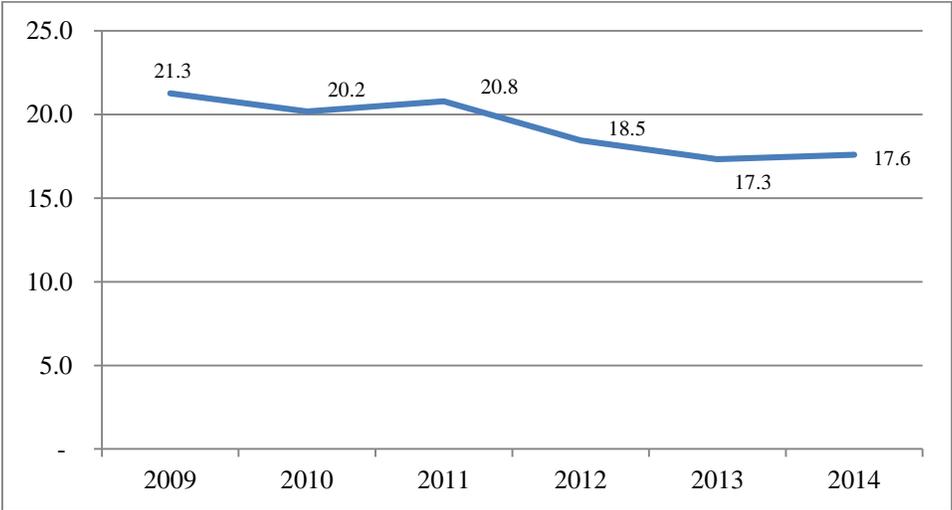


Figure 8.20: Ratio students by academic FTE
 Source: Calculated by the Author from UCM data

Information from the Ministry of Education was used to compare student-staff ratios at UCM with three other Chilean higher education institutions of varying sizes: one large with significant revenues and operating margins (PUC); one medium institution with sufficient income and surplus for reinvestment and development (University of Talca – UTAL), and one smaller institution with tight margins (UCSC) similar to and UCM (Figure 8.21).

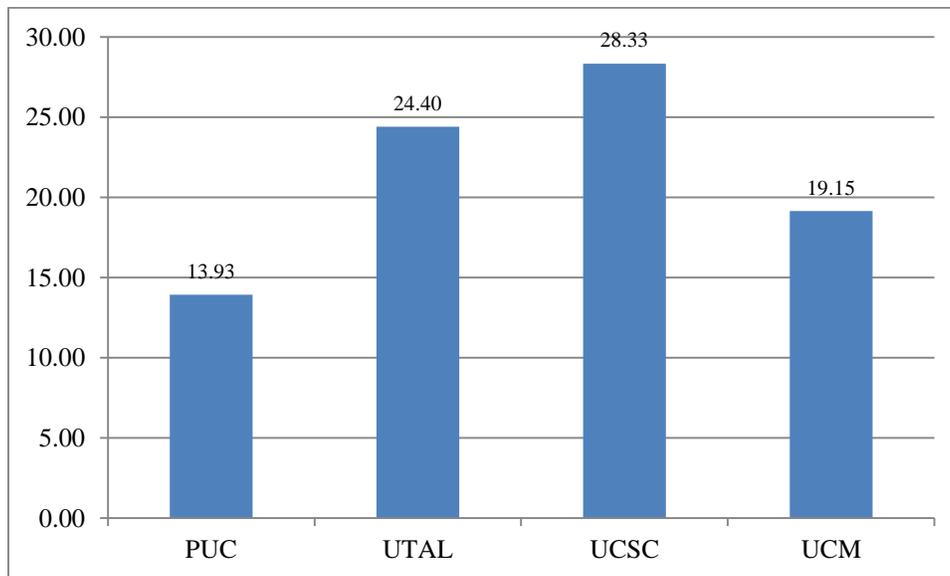


Figure 8.21: Ratio students by academic FTE for four universities
 Source: Calculated by the Author from Mineduc, 2014

PUC came up with lowest student-staff ratio, followed by the UCM, UTAL and finally UCSC. UCM has shown significant academic staff development, seeking closer attention and better learning for students as well as increased research activity. By correlating income (from all sources) and expenses, it can be seen that UCM is supporting operating costs not funded for their institutional category, putting at risk the availability of resources to continue growing or to withstand possible future financial threats, such as a drop in student enrolments, student demonstrations, among others. Likewise, given the increased competition both regionally and nationally, institutions are constantly at risk of their top-rated academic staff receiving better offers from other institutions. Given the resources available at UCM, it is difficult to compete with much better resourced universities to retain top quality staff. Another important element affecting teaching and learning is the infrastructure and facilities for laboratories, libraries, classrooms, etc., sufficient in quantity and quality. The growth of UCM in terms of students at its two campuses in the region (Curico and Talca) has challenged the maintenance of infrastructure to keep the learning and teaching environment at the highest possible standard. This is likely to be further accentuated by growth on the university's two campuses at Talca and Curico. Figure 8.22 shows the growth of student numbers on the two campuses.

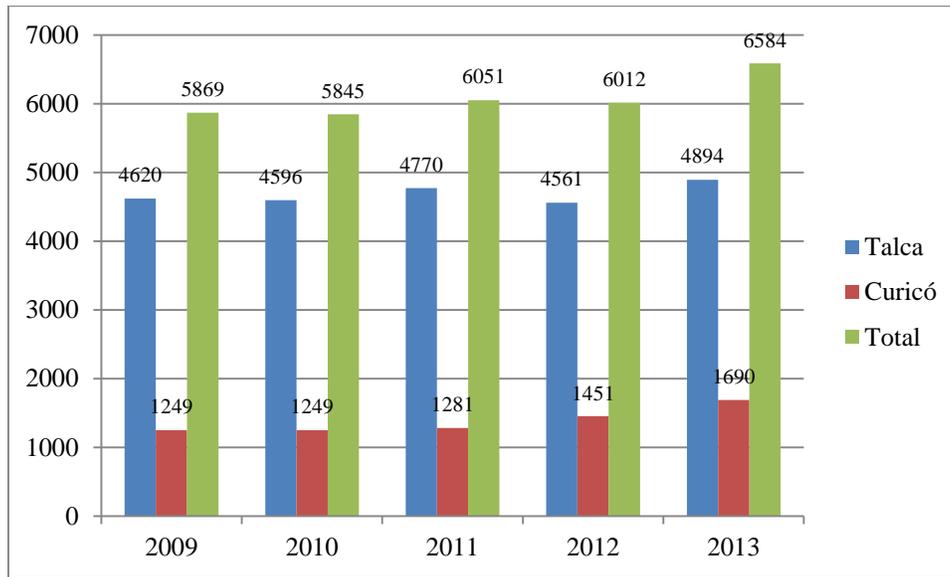


Figure 8.22: Evolution of undergraduate students by Campus Talca-Curicó
Source: Calculated by the Author from UCM data

The highest growth in students, arising mainly from the introduction of new programmes, has occurred in Curico (51.5 percent) with steady growth at the main campus in Talca (6 percent). Growth is anticipated to continue through 2015 and 2016 in Curico as well as in Talca as recently-introduced undergraduate programs fill year by year. The combination of favourable student-staff ratios, expansion in subject offerings and multi-campus development, the construction of major infrastructure projects, both in Talca and Curico including an Autonomous Learning Building in Talca (2,800 m²) and a building that houses a library, classrooms and study spaces in Curico (3,492 m²), both aimed largely at independent work by students, together with the strategic objective of constantly improving the processes of teaching and learning, have increased the number of square meters of campus facilities per student (Figure 8.23).

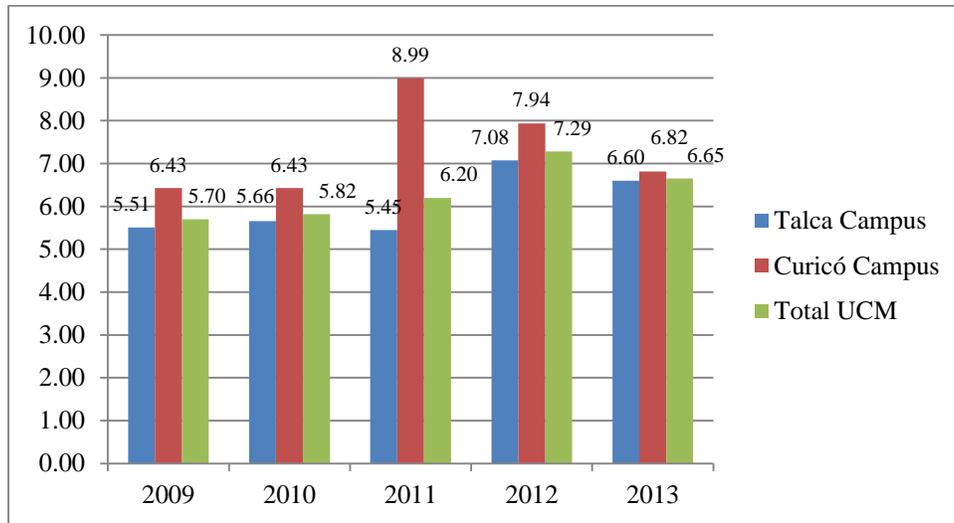


Figure 8.23: Evolution of square metres per students 2009-2013
Source: Calculated by the Author from UCM data

Figure 8.23 shows that infrastructure has increased more than the growth in students, evidenced by an average increase from 5.7 square meters per student in 2009 to 6.65 square meters in 2013. Standards at Curico have developed to closely match those at the main at Talca campus. Although the earthquake in February 2010, one of the strongest in world history, affected the Maule region (where the UCM is located) and damaged the university's infrastructure. These damages were repaired within the same year, demonstrating both the quality of the original construction of the facilities and the resilience of the institution in overcoming disaster.

8.7. Conclusions

The Universidad Catolica del Maule (UCM) is located in one of the most socioeconomically-disadvantaged regions in Chile. While this creates challenges for the institution, it also offers the opportunity for UCM to establish itself as an engine for both regional development and for the advancement of youth and families seeking access to better opportunities in life. While the participation rate in higher education in Maule is lower than the country average, the regional trends mirror national trends, demonstrating strong growth in terms of both students and institutions. Although growth has also been experienced at UCM, the private institution sector has developed aggressively and attracted much of the new growth. Likewise, access

to higher education for Maule students from the lowest income quintiles has increased exponentially, reaching national average levels. For example, the participation rate for the first quintile in the Maule region reached 26 percent compared to the national rate of 26.9 percent; the second quintile participation rate in the region is 29 percent compared to the national average of 34.2 percent. While the lower socioeconomic quintiles have increased their participation, the difference between these and the fifth quintile remains high, although in Maule region a slightly lower dispersion is observed. Whereas the national participation rate by the fifth quintile is 88.5 percent and 26.9 percent for the first quintile, it is 77 percent and 26 percent respectively in the Maule region. The progress in regional participation and greater equity in access has been strongly supported by private institutions, including universities, IP and CFTs.

However, demographic trends pose challenges for the future. Fewer young people, already evident in a fall in enrolments in secondary education, foreshadows a slowdown in the growth of the regional higher education system in the coming years. This may be of particular concern for newly-participating students from vulnerable backgrounds if consequent resource pressures on government and within institutions are not carefully managed.

Within this regional context, and as a member of the CRUCH university group, UCM has grown although at less than the average regional growth in terms of student numbers. As a CRUCH university, student access is regulated by the PSU selection test. UCM has proved to be an academic alternative particularly for students from the most vulnerable backgrounds, and has historically been shaped by students from these backgrounds. As access is regulated by the PSU, and a direct relationship has been shown between socioeconomic status and scores. UCM has proved an attractive alternative for the best students in the lowest quintiles derived mainly from municipal or private-subsidized secondary schools. Notwithstanding the above, due to a widening of access and the broadening of academic offerings, PSU access scores have steadily declined over time. This situation represents a major challenge for the institution, requiring UCM to adopt strategies for student retention and acceptable completion times, dealing with students with lower social and academic capital. This is a particular challenge for UCM and its mission: “The formation of comprehensive

professionals with a critical, constructive and Christian orientation in the world, who tackle environmental challenges by delivering solutions that guide the development of the communities and organizations of which they are part " (UCM, 2014, p. 19)

UCM educational performance in terms of student retention, graduation, and completion time have been higher than the national average despite the larger promotion of its students coming from vulnerable backgrounds, and the direct relationship between socioeconomic background, access and academic success. Findings in this research also show that UCM has achieved higher levels of equity throughout the educational process by providing equal opportunity of access to higher education, supporting retention and completion/graduation. Post-graduation outcomes of obtaining employment, levels of remuneration and social mobility compared with their parents are areas that need further improvement. UCM graduates are still concentrated in the lower income quintiles between \$300,000 and \$800,000 Chilean pesos per month, four years after graduation when the minimum monthly wage in Chile for 2015 was \$ 241,000 Chilean pesos, and when the average monthly salary for someone with 17 years of study, [which includes UCM graduates], is \$ 1,026,714 Chilean pesos. This situation is further exacerbated by the fact that given the socioeconomic background of students, their studies were financed with loans, it underlines why UCM graduates responded that their economic situation was the least satisfactory outcome in terms of their level of happiness.

Although UCM has developed as an effective quality education institution at the regional level for students from lower socio-economic groups, university education cannot be considered an instrument of social mobility when graduates are unable to access employment at levels that guarantee them access to middle-class income and privileges, are in position to influence management and policy decisions. A key measure of the quality of outcomes will also be how their education impacts on their conscience concerning the social justice issues in their communities. These are areas that are not normally covered in graduate surveys but which UCM may take leadership in developing as part of its contribution to the education development of the Maule region.

CHAPTER NINE

CONCLUSIONS

This chapter provides a summary of the key findings and contributions of this thesis, and provides some suggestions as to policy directions and areas for further research .

This PhD research set out to address the question: “Do Chilean Universities act as agents of social change or do they merely reinforce existing inequalities in society?” The research question was considered important because a critical examination of the role of universities is central to the design of effective public policy in the areas of funding and quality management in higher education. For universities, the answers to this question are critical to understanding the assumption and values that inform policies for resource allocation, staffing, teaching and learning.

To critically examine this question, the research contrasted strategies for the design of public policy based on the theory of human capital, which recognizes education as a vehicle for the social mobility of individuals, families and communities, with critical theorists arguing that formal education *per se* does not ensure the transition of individuals through social strata but may in fact constitute an instrument of domination and the reproduction of social inequality. The thesis then analysed the political, social and economic context of Chile to provide a contextual understanding of the evolution of Chilean society and the potential for education to contribute to the building of a fairer and more equitable society. In particular, the research examined national policies to strengthen the system of higher education and to provide more equitable opportunities for the most vulnerable socio-economic groups.

Therefore, given the evidence shown through previous chapters, the main conclusions of this thesis are:

- Four moments in the Chilean history are recognized, characterising key patterns of development as follows:
 - a. **Nineteenth Century:** Highly Conservative, existence of two social classes- very low levels of education and highly wealthy concentration.
 - b. **Democratic period (1900-1973):** The middle class emerges – formation of political parties- wealth continues to be highly concentrated – more rights for the population- education carries on growing – separation of middle classes and workers, emergence of socialist government.
 - c. **Re-emergence of Democracy:** Recovery of civil rights - highly polarized country- high economic growth- growth of participation rates in higher education- explicitly declared intention to strengthen equity in education and transform it as a social mobility driver- more resources for education. Income inequality remains – the system of higher education segmented.

In general terms, Chilean society is inherently un-equal, having being built from a colonial heritage established by land and mining property ownership vested in a small group of Spanish settlers. By conducting a critical examination of Chile's political economy it was evident that the formation of different classes and widely disposed socioeconomic groups has had profound effect on the development of Chile over the time. The lack of public policies to reverse this situation, amongst others has been one of the fundamental factors in the construction of Chile as one of the most unequal societies in the world. It has been only since the mid-twentieth century, with universal suffrage, the beginnings of the nationalization of mining, the creation of major state enterprises, and a major boost to education that some glimpses of the prospect for a more just and equitable society have been signaled in Chilean public policies. Education in particular, is increasingly treated both by the state and society as a form of capital, gradually initiating processes that substantially improve education at all levels, and incorporating substantial reforms in developing the education system at all levels.

The development pattern identified provides evidence of a society with high levels of difficulty for transitioning to greater levels of equity. A society with historical inequalities and for which a whole generation which grew up under a strongly dictatorial regime, makes more difficult the implementation of mechanisms that promote greater equity, such as the case of education.

- From the return to the democracy in Chile, strengthening access to higher education and providing more opportunities to participate in tertiary studies, has been a priority for the government. Nevertheless the university entrance test (PSU) endures as one of the first and strongest barriers that vulnerable students must overcome. According to the data, 94% of students from private schools achieve PSU scores which would enable them to be enrolled in a CRUCH university; the figure is 70.6% in the case of students coming from subsidized secondary schools and finally 55.7% for students coming from public secondary schools where students from lower socioeconomic quintiles are mostly concentrated. (Chapter Seven pages 120,121)
- Growth of access and participation rates are evident during the last 25 years, and congruent with the trend towards greater access and participation of more vulnerable sectors; this growth has been inverse to the socio economic origin, that is, while participation rates of students from first and second quintiles grew 7.1 and 5.2 times respectively, the fifth quintile grew 2.3 times. Nevertheless and even though the country reached participation rates in higher education near 50%, still the gap between socioeconomic groups persists. While the participation rates of first and second quintile were 26.9 and 34.2% respectively, the fourth and fifth quintile reached 56.6% and 88.5% respectively. (Chapter Seven; Table 7.2; page 130)
- The creation of private higher education institutions, universities, professional institutes and CFTs, selection mechanisms such as the PSU and the inception and growth of student funding for all sectors, has led to very significant growth of enrolment in the private sector. There has been generated a highly segmented system where various types of institutions coexist; these span poorly-resourced institutions dominated by highly

vulnerable students on the one hand, and elite universities on the other. While in the CRUCH group, of all students attending these institutions 28 percent belong to quintile one and two (12 percent and 16 percent respectively); for private universities, the figure is 22 percent (8 percent and 14 percent for first and second quintiles respectively). IP and CFT institutions exhibit a very similar distribution, concentrating more students from the first and second quintiles; 34 percent in the case of IP and 36 percent in the case of CFTs (Chapter Seven ; Figure 7.9; page 134).

Finally, with respect to this segmentation, it is paradoxical to note a lower proportion of vulnerable students at CRUCH universities than in the private system, given that the CRUCH universities were historically the original recipients of public funds.

- According to PNUD, equity is not only a matter of increasing access, but is also related to achieving graduation and to doing so within an adequate time-frame. In the case of dropout rates, universities manage to retain the greatest number of students - 76% in the first and 62% in the second year, followed by professional institutes, 65% and 47%, and finally by technical training centres 64% and 44% (Figure 7.11; Page 142). For universities, the CRUCH institutions achieve better indicators than private universities. Data for the 2008 cohort of enrolment, shows that while retention of students in CRUCH universities reached 86% in the first and 78% for the second year, while private universities achieved 77% and 63% respectively (Table 7.9; Page 143). This performance is consistent with the main causes of dropout identified (the PSU and student support), as CRUCH universities are institutions that both select students based on their PSU score, and that provide more and better mechanisms for student support. Additionally, private institutions (universities, professional institutes and technical training centres), which do not select students via the PSU, and as described possess greater numbers of vulnerable students, face the greatest dropout rates, ie the lowest socioeconomic sectors are exposed to a higher probability of not graduating.
- In terms of graduation, of those who reach it, a direct relationship can on average be seen between employability and type of institution of higher education, which is highly segmented. Thus the institution where a student graduates will influence their

opportunities of employment. While the probability of finding employment for universities' graduates varies between 81% and 83%; for IP the rate falls to between 70% and 73% and for CFT between 63% and 66% (Table 7.14; Page 152). The situation is maintained in the second year of graduation, where universities increase to between 87% and 89%; IP 77% and 80% and finally the CFT 71% and 75% (Table 7.15; Page 153).

- In terms of quality, although the country has advanced in the establishment of a system of quality assurance, outcomes remain diverse, where the evidence also shows that on average institutions that concentrate a greater number of vulnerable students are also the ones with lower levels of institutional accreditation. 15 of 25 CRUCH Universities (Figure 7.17; Page 171) have at least five years of accreditation with at least one optional area accredited, which demonstrates that this group of institutions has implemented and maintained effective quality assurance mechanisms. Although there are six private universities within the group that reach higher standards, there are also four which have the minimum level. Regarding professional institutes (IP) and technical training centres (CFT), even though many of them are in the licensing stage, there is a significant percentage of non-accredited institutions, and many that only reach two years accreditation.
- Even though public resources for higher education have increased, and new instruments aimed at strengthening equity have been generated, significant differences still remain between institutions strongly prioritizing resources for excellence and research-based indicators. Particularly in CRUCH universities, historically publicly funded, a huge dispersion is evident in terms of allocation of resources, privileging those institutions with higher levels of complexity, such as research.
- A Chilean regional institution (UCM) is analysed, belonging to CRUCH, with a good level of quality accreditation, relatively low public input, which is comparable to at least 6 other Chilean institutions with similar characteristics.

In terms of access, it is evident that UCM manages to enrol students with academic merit from vulnerable origins, ie is an option for the best students of the schools from which they come. Second, indicators of retention and graduation behave differently than national averages, and drop-out are not consistent with patterns defined by studies that try to explain the drop-out phenomenon. The characteristic of students at UCM mean that a high probability of drop-out could be expected, which does not occur. In this respect, firstly the success of student support programs that have been implemented is evident, but it is also necessary to undertake future studies to define in more depth the causes of drop-out in this particular institution.

Data analysed from cohorts of graduates 2009 and 2012 as well as interviews conducted with 23 graduates from previous cohorts, provides evidence that there is social mobility, particularly intergenerational (ie from their parents) elevating the lower classes; that is the case for example of the cohort 2009, the 16% who were classified before entering college as members of the lower class disappear.

Nevertheless, there is still a significant percentage confined within their class, for example, 11% of graduates from the 2012 cohort considered themselves still to belong to the lower middle class (Figure 8.15; Page 216).

The theory of human capital appears to be the primary framework influencing the development of the education sector, beginning with compulsory primary and secondary education followed by the expansion of public and private universities. This theoretical position sees education as an instrument of social mobility capable of constructing a more equitable and fairer society. Government policy pronouncements therefore suggest that the exponential growth in higher education was a means to create a fairer society. However, Chile's higher education sector is still saddled with significant barriers for those from lower socioeconomic quintiles, including access, financial support, retention, completion and post-graduation employment. The tertiary sector itself is a highly segmented system where different types of institutions coexist according to the diverse groups or social trajectories of students that shape them. Institutions whose enrolment is achieved via the PSU selection test tend to achieve better academic performance than those without the PSU test. The

distribution of financial and other resources also tends to favor the more privileged institutions. Social origin limits people's opportunities and possibilities, and higher education has become an instrument of institutionalised social segregation benefiting students with higher social and cultural capital, greater social networks, values and predisposition to knowledge-awareness acquired in their households and from previous socio-cultural trajectories. This research therefore found that rather than compensate for the class differences by facilitating social mobility, the higher education system in Chile has tended to reinforce class differences and may in fact operate as an agent of social control rather than a portal for individual and community emancipation. The evidence for this has been documented carefully in the thesis, including access, retention, completion time, post-graduation employment, student debt and lack of access to positions that enable graduates from lower socio-economic backgrounds to influence management and policy decisions that ultimately transform society.

As a University administrator who has spent many years devoted to higher education the results of this research were both surprising and disturbing. Like many colleagues working in higher education today I assumed at the outset of this research program that despite socio-economic differences and the uneven distribution of assets and wealth, education in general and higher education in particular had the ability to counter these trends and thereby create a more equitable society.

It was only when the data was analyzed that the depth of inequality and the pervasive distinctions between different socio-economic groups became apparent. No one in higher education who has devoted their careers to the cause of 'education' will be satisfied with the results. An implicit assumption articulated by policy makers representing the community at large is that education has the ability to make a difference not only to the individuals who progress through the different ranks of the system but also to those groups who are disadvantaged by their status and position in society.

These outcomes take us beyond the nature/nurture debates in human development to focus on those societal structures and systems that establish the context for higher education. When

we do that we see the challenges facing universities in Chile today. It is here that this research makes an original contribution to knowledge. It is not sufficient to make statements in strategic plans claiming that universities act as ‘critics and conscience’ of society when in reality they reinforce the status quo. Despite the expressions of confidence in education as a force for change this research questions those assumptions. In that respect it challenges us to focus on societal trends and outcomes rather than the individuals in the system. In contrast to the dominant trends in education today which focus on individual performance (pupils and teachers), classroom practices and employment opportunities, this research has sought to build a platform for an examination of higher education policy in Chile in the belief that it should be capable of making a difference. In this respect it is true to the classical interpretation of the critical tradition in that it not only provides a sustained critique of the current system but it also suggests alternatives. That leads us inevitably to make a number of tentative policy recommendations as well as suggesting areas for further research.

9.1. Policy directions

Some of the consequences of social inequality and the inability of the education system to create a fairer society in Chile prompted the 2007 revolution of secondary school students, and the 2011 mobilization of students belonging to CRUCH universities, calling for government to address matters of quality, financing, profit and access to higher education. These events created a groundswell of political momentum in the country, which led to significant political actions across the political divide. For example, one of the emblems of the campaign of the current president Michelle Bachelet was “free and quality education for all and at all levels”. Thus during the month of February 2015, the first major reform was passed in parliament, the end of selection in primary and secondary schools that receive public funds, and the end of co-payment on what are now called subsidized schools. In terms of higher education, the various political parties continue to discuss the reforms to be presented aimed at free higher education. However, the mechanisms, scope and key definitions of the reforms that will establish sustainable free higher education are unclear. Ideally, the reforms in preschool (universal access), primary and secondary, should give the same tools to students, regardless of the socioeconomic quintile to which they belong, so that

successful reforms at this level should eliminate any barrier of segregated access to higher education. Moreover, these outcomes would be supported by increased regulation regarding profit in private institutions, quality assurance and most important cost-free access.

Given the findings of this thesis, in addition to the reforms proposed in the country for higher education and institutions that compose it, if the system is to provide a real vehicle for social mobility and be a force for greater social equity, this thesis provides evidence suggesting the following policy directions may be of merit, and are worthy of further in-depth study:

- **Advance in alternatives for selection:** While the PSU is still the alternative of selecting and access mainly for CRUCH universities, progress in all system is needed on new mechanisms that allow discover talents, study habits and academic vocation. On the one hand it helps to nullify inequities produced by the PSU, and on the other to detecting vocation helping to reduce the dropout rate.
- **Quality assurance:** It is vital to advance the quality assurance of both institutions and undergraduate programs throughout the system, allowing students to receive a minimum quality in their studies, thereby strengthening equity in the system.
- **Strengthen funding mechanisms that promote the retention and academic success in institutions with high levels of vulnerable students:** Students from the most vulnerable sectors, requiring more and better mechanisms for both adaptation to life in tertiary education, and leveling descended skills, which is necessary to move towards stronger funding mechanisms to those institutions that are educating mostly vulnerable students.
- **Ensure programs of leveling and academic assistance, cultural and social capital:** While it is necessary to give more funding to institutions with vulnerable students, it is imperative to ensure that this move forward in revising curriculum, methodologies and resources for learning, allowing reduce dropout and ensure timely graduation. Likewise, as this thesis has shown, it is essential to strengthen the social

and cultural capital of the students, allowing them leveling their chances of social ascent with students from more accommodated sectors, therefore it is necessary to implement actions in both the curriculum of undergraduate programs, and the implementation of parallel programs, for example giving international experience to students, or the establishment of social networks.

9.2. Contribution to the state of knowledge

This thesis contributes to the state of knowledge in the following way:

- By combining different disciplines, which gives an historical view regarding Chilean social construction- the social predisposition to really install education as a driver of social mobility and better equality. Therefore I have shown that reproduction theory applies in this case.
- Gives an overview, from the general to particular using the case study, illustrating the higher education outcomes by the incorporation of groups from lower socioeconomic sectors. (Cause – effect).
- In a country with relatively low levels of research in higher education, the thesis contributes to enhance and strengthen the discussion on the higher education field, and especially from and for regions
- As a by-product of this work, UCM, has gained a solid database which is available for future research and researchers.
- In addition, the work for the thesis has enabled a methodology to be developed in UCM that can evaluate the outcomes of students in terms of the institution's contribution generally to the concept of social mobility and equity.
- By example, this is enabling the university to focus on smart investment strategies and to implement programs aimed at improving retention rates, completion times and graduation numbers.
- I believe that each of these outcomes when taken together with the theoretical foundation I describe in my thesis, forms a significant contribution to the ongoing discourse on this topic in Chile and more widely in the world.

9.3. Areas for Further Research

A significant contribution of this thesis is identification of additional research questions and new lines of work that arise. Research in higher education is increasingly gaining strength as a field of study. Two main lines of research arising from this thesis are considered particularly important:

First is further development of the theme of higher education as an agent of social mobility and strengthened equity, from which arise the following questions:

- What is, after the fourth year of graduation, the social situation of graduates from universities with high levels of students from vulnerable socio-economic sectors?
- Which undergraduate programs are those that are generating greater social mobility?
- What are the causes of drop-out in UCM?
- What strategies are being implemented in universities aimed at strengthening the social and cultural capital of vulnerable students?

Second, a line of research arises related to the impact of the university in the region and particularly in medium and small cities:

- What is the cultural, social and economic effect of the existence of a university in the region?
- What are the main benefits provided by the university to the city?

The relationship between the development of cities and the role of education has become an important area of research in Europe and across the Asian and Pacific region (Shirley & Neil, 2013). It could also be a productive area for research in Latin and South America building on the platform established by this thesis with its emphasis on the role of education in promoting economic and social development and in exploring public policy options.

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