

BETWEEN PERSISTENCE AND CHANGE IN LATIN AMERICA:

DID THE RECENT EXPANSION OF HIGHER EDUCATION REDUCE EDUCATIONAL INEQUALITY BY SOCIAL ORIGINS?

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A thesis submitted for the degree of
Doctor of Philosophy

Wolfson College
University of Oxford

Hilary Term 2021

Approximate word count: 68,000

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ACKNOWLEDGMENTS

I would firstly like to thank my supervisor, Erzsébet Bukodi, whose help through all stages of this research has been invaluable. I am grateful for her honest advice even at times when completing the first chapter seemed unrealistic.

This research would not have been possible without the financial support of the Chilean National Commission for Scientific and Technological Research (CONICYT). I also gratefully acknowledge the funding received from Wolfson College in times of hardship and uncertainty.

I would also like to extend my thanks to the Centre for Demographic Studies at the Autonomous University of Barcelona, which I had the pleasure of visiting as a doctoral student. Special recognition goes to Albert Esteve and Victoria San Juan for their insight and generosity when my original proposal was not longer viable.

There are a vast number of people to whom I owe thanks in a professional and personal capacity. To Emmanuelle Barozet and Diana Kruger for sharing their expertise and kindness, to the scholars who kindly served as my assessors: John Goldthorpe, Brian Nolan, Diego Sánchez-Ancochea, Bastian Betthaeuser, and Diederik Boertien. To Mary Smith from the Social Sciences Division, to Robert Greenock from Green Templeton College, to Nicola Psaila and Sean Veitch from the Disability Advisory Service, to Gabrielle Bonner, and to the Opera Café team. Special recognition goes to my teammates, comrades, and colleagues that accompanied me during the different stages of this doctoral journey.

Last, but never ever least, I wish to thank my parents and friends for their patience, love, and continuous support. My innermost gratitude to them goes beyond words, time, and distance.

ABSTRACT

The aim of this thesis is to explore the effect that the recent expansion of higher education has had on the role of inequality by social origins in attendance to this level in Latin America. To do so, the following 12 countries were included in the analyses: Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, and Uruguay. Particular attention is paid on Chile, an adjudicative case within the region as this piece gradually reveals.

The thesis is comprised of two main parts, with one of them dedicated to exploring the recent expansion and the effects of social origins on higher education at the regional level, and the other is dedicated to addressing the Chilean case in depth. In total, the piece is comprised of four empirical and two theoretical chapters, organised as follows.

The first part of this thesis is composed of four chapters. The first chapter entitled *"The recent expansion of higher education in Latin America"* describes the general scenario and characteristics of the recent expansion of higher education in the region, which occurred in the last two decades in most of the country under study. In addition, the chapter presents the methodology used for all the empirics at the regional level, including data, sample, variables, and modelling strategy.

The second chapter *"The more… the merrier in higher education?"* examines whether the recent expansion has reduced the effect of social origins on attendance in higher education in Latin America. To do so, the chapter discusses the general perception, according to which the recent expansion has been a positive change – because *"the more, the merrier"* in higher education – as if expansion was sufficient to democratise access to this level by itself and by default.

The third chapter *"Does privatisation matter?"* starts to unveil the role that institutional settings play in inequality in higher education. To do so, the chapter dedicates a section to developing a classification of models of expansion for Latin America, based upon the degree of privatisation and market-orientation in tertiary education.

The fourth chapter *"To what extent do countries differ?"* continues to unveil the role of institutional settings, examining if there are any differences by country within a certain model of expansion. For the three models, cases that deviate from the group trends are identified, and for each of them the social dynamics behind their results are discussed.

The second part of this thesis is dedicated to the case of Chile and is composed of two chapters. The fifth chapter is entitled *"Expansion and student support policies in a context of high privatisation: The case of Chile"* and details the expansion policies implemented in higher education in Chile after 2002, with particular emphasis on the student loan regimes. Chile is considered an adjudicative case in Latin America because the country has been able to combine trends related to different models of expansion, despite having one of the highest degrees of privatisation and market-orientation in education.

The sixth chapter *"Changing educational inequality in contemporary Chile?"* draws on the particularities of the Chilean case, exploring to what extent the student loan policies implemented in the last decade have been effective in reducing inequality by social origins in higher education attendance between different social sectors. In addition, not only higher education attendance is addressed, but also access to different tiers and institutions. Through working with a different dataset, CASEN allows for the expansion of the comprehensive definition of social origins, increasing the number of indicators related to parental sociocultural and economic resources, providing more up-to-date estimates about their effect on contemporary educational stratification.

The final part presents the conclusions, including policy implications and recommendations for further research, both at the regional level and for the case of Chile. The thesis, then, closes by reinforcing the role of institutional settings in tackling inequality by social origins in tertiary education and the limitations of the current policies at this level.

DECLARATION

I hereby declare that the thesis I have presented in fulfilment of the requirements to obtain the degree of Doctor of Philosophy at the Department of Social Policy and Intervention is solely my own work. None of the chapters that compose this thesis have been submitted or published by any peer-reviewed journal. Therefore, the work presented here has an unpublished character.

Earlier versions of Chapters 1, 2, and 4 have been presented at different conferences and workshops in the field of social stratification, Latin American studies, and sociology. Between 2017 and 2020, I presented preliminary results at the Latin American Studies Association (LASA) conference, the DPhils seminar series and the Human Development and Social Policy in Latin America conference at the Latin American Centre at the University of Oxford, the Social Inequality Research Group Seminar Series of the Department of Social Policy and Intervention at the University of Oxford, the conference "Inequalities, Conflict and Change. Perspectives, Agendas, and Cases from Latin America" organised by the Centre for Conflict and Social Cohesion Studies (*Centro de Estudios de Conflicto y Cohesión Social*, so forth: COES) and the International Inequalities Institute of the London School of Economics, and at the first conference on Education in Latin America, organised by the Institute of Education at University College London.

A preliminary version of Chapter 3 has been submitted as a response to the call to take part in the VI International Seminar organised by the Network of Studies on Inequality, Stratification and Social Mobility in Latin America, which will take place in November 2021. Finally, a section of Chapter 5 has been submitted to the call to be part in the Latin American Studies Association (LASA) conference, which will take place in San Francisco in May 2022.

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LIST OF ABBREVIATIONS

BOL ..... *Bolivia*
BRA ..... *Brazil*
CAE ..... *State-guaranteed Loan (Crédito con Aval del Estado)*
CASEN ..... *National Socioeconomic Characterisation Survey*
CFT ..... *Vocational Training Centres*
CHI ..... *Chile*
COES ..... *Centro de Estudios de Conflicto y Cohesión Social*
COL ..... *Colombia*
CR ..... *Costa Rica*
CRUCH ..... *Council of Rectors of Chilean Universities*
DOM ..... *Dominican Republic*
ECLAC ..... *Economic Commission for Latin American and the Caribbean*
ECU ..... *Ecuador*
EMI ..... *Effectively Maintained Inequality*
FONDO SOLIDARIO ..... *University Loan Solidarity Fund*
IP ..... *Professional Institutes*
IPUMS INTERNATIONAL ..... *Integrated Public Use Microdata Series International*
ISCED ..... *International Standard Classification of Education*
LASA ..... *Latin American Studies Association*
MEX ..... *Mexico*
MMI ..... *Maximally Maintained Inequality*
OECD ..... Organisation for Economic Co-operation and Development
PAN ..... *Panama*
PAR ..... *Paraguay*
PER ..... *Peru*
SEDLAC ..... *Socio-economic Database for Latin America and the Caribbean*
UNDP ..... *United Nations Development Programme*
UNESCO ..... *United Nations Educational, Scientific and Cultural Organisation*
URU ..... *Uruguay*

INTRODUCTION

The aim of this thesis is to explore the effect that the recent expansion of higher education had on the role of inequality by social origins in attendance to this level in Latin America. To do so, the following 12 countries were included in the analyses: Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, and Uruguay. Particular attention is paid on Chile, an adjudicative case within the region as this piece gradually reveals.

Its purpose is to provide new theoretical and empirical perspectives on the relationship between expansion and inequality in higher education, applying an approach that encompasses from the general regional landscape as well as a particular case study.

Regarding the stream of research of social stratification, the thesis adds some variation to an endeavour dominated by the study of expansion across industrialised economies, such as the experiences of North America and Western and Central Europe, mostly. In this way, this piece seeks to include Latin America into international comparative literature, providing the opportunity to test theories. It is important to mention that most of these theories are the result of studies referring to cases found across the developed world. In addition, as a progressively deeper approach is unveiled, the thesis also seeks to boost comparative research within the region. In this sense, I propose a classification of the models of expansion of higher education developed across Latin America in the last thirty years. This classification is based upon the degree of participation of the private sector and the relevance of market-based mechanisms – such as bank loans and tuition fees – to achieve expansion. The classification is a novelty because, to the best of my knowledge, it is the first typology of expansion of higher education proposed for Latin America. At the same time, the classification contributes to the

understanding of educational inequality as it highlights the role of institutional settings – specifically, the role of increasing privatisation – in stratification regimes.

Regarding methodology, it is necessary to begin by stating that research on inequality by social origins faces important constraints in Latin America. The lack of suitable data – that is: the lack of administrative registers, cross-sectional surveys with retrospective, and panel studies – has been acknowledged by both for social stratification scholars and policymakers. In this thesis, therefore, two new harmonised datasets and two methodological distinctions are used to overcome these limitations and are presented as the four novelties behind this thesis.

For the chapters on Latin America, a new dataset constructed with census data retrieved from the Integrated Public Use Microdata Series International (so forth: IPUMS International) is constructed. To the best of my knowledge, using IPUMS International for educational stratification research in Latin America has not been published in any peer-reviewed journal. Following with the chapters on the case of Chile, a dataset constructed with the National Socioeconomic Characterisation surveys (so forth: CASEN due to its initials in Spanish) conducted between 2003 and 2017 is used. Despite that CASEN has been utilised in research on educational stratification in Chile, to the best of my knowledge, no study has been published using these datasets to address inequality in higher education attendance in contemporary Chile.

The methodology used in all the empirical chapters considers two important distinctions to overcome the lack of data and the definition of social origins. The lack of suitable datasets is overcome by the coresidence approach, which restricts the sample only to those respondents who are at age where they can access tertiary education and still resided with their parents when surveyed. Therefore, the characteristics of the head of the household and his/her partner (if any) are used as proxy estimates of social origins. Although scholars have argued that there are potential biases arising from this approach, to the best of my knowledge, there is no published literature which has used and tested it in such a vast number of countries or across Latin America. Furthermore, the coresidence approach is considered the most suitable strategy because the focus of this work is on higher education, a transition that happens

relatively early in life, and usually before the average age of nest-leaving in many Latin American societies.

It is thanks to the coresidence approach that social origins can be innovatively defined in this thesis. Instead of focusing only on parental education – as most studies on educational inequality in Latin America do – a two-fold definition of social origins is provided based on parental sociocultural and economic resources. As IPUMS International and CASEN provide a comprehensive set of household indicators, each of the components of social origins are comprehensively defined. On the one hand, parental sociocultural resources are defined in accordance with the educational attainment of the head of the household and his/her partner (if any), which is innovative, as most of the literature for the region applies the dominance approach. On the other hand, household economic resources are operationalised in an index based on the availability of certain assets. This exercise, as far as I am aware, has not been attempted by the published literature on inequality in higher education in Latin America.

The thesis is comprised of two main parts, with one of them dedicated to exploring the recent expansion and the effects of social origins on higher education at the regional level; and, the other is dedicated to addressing the Chilean case in depth. In total, the piece is comprised of four empirical and two theoretical chapters, organised as follows.

The first part of this thesis is composed of four chapters. The first chapter entitled *"The recent expansion of higher education in Latin America"* describes the general scenario and characteristics of the recent expansion of higher education in the region, which occurred in the last two decades in most of the country under study. In addition, the chapter presents the methodology used for all the empirics at the regional level, including data, sample, variables, and modelling strategy.

The second chapter *"The more… the merrier in higher education?"* examines whether the recent expansion has reduced the effect of social origins on attendance in higher education in Latin America. To do so, the chapter discusses the general perception, according to which the recent expansion has been a positive change – because *"the more, the merrier"* in higher education – as if expansion was sufficient to democratise access to this level by itself and by default.

The third chapter *"Does privatisation matter?"* starts to unveil the role that institutional settings play in inequality in higher education. To do so, the chapter dedicates a section to developing a classification of models of expansion for Latin America, based upon the degree of privatisation and market-orientation in tertiary education.

The fourth chapter *"To what extent do countries differ?"* continues to unveil the role of institutional settings, examining if there are any differences by country within a certain model of expansion. For the three models, cases that deviate from the group trends are identified, and for each of them the social dynamics behind their results are discussed.

The second part of this thesis is dedicated to the Chilean case and is composed of two chapters. The fifth chapter is entitled *"Expansion and student support policies in a context of high privatisation: The case of Chile"* and details the expansion and student loan policies implemented in higher education in Chile from 2002 onwards. Chile is considered an adjudicative case in Latin America because the country has been able to combine trends related to different models of expansion, despite having one of the highest degrees of privatisation and market-orientation in education.

The sixth chapter *"Changing educational inequality in contemporary Chile?"* draws on the particularities of the Chilean case, exploring to what extent the policies implemented in the last decade have been effective in reducing inequality by social origins in higher education attendance between different social sectors. Through working with a different dataset, CASEN allows for the expansion of both the indicators related to parental sociocultural and economic resources, providing more up-to-date estimates about their effect on educational stratification.

The final part presents the conclusions, including policy implications and recommendations for further research, both at the regional level and for the case of Chile. The thesis, then, closes by reinforcing the role of institutional settings in tackling inequality by social origins in tertiary education and the limitations of the current policies at this level.

Before developing the chapters previously stated, I proceed to briefly detail the theoretical background on inequality by social origins in education, in which this thesis is based. Therefore, the rest of this introductory section proceeds as follows: the next part presents the

key concepts that inform this thesis and the main theories developed by the literature on educational stratification. Then, I move towards a summary of past research on inequality in higher education for Latin America, presenting the main findings reported by the scientific literature.

1. REVISING THE RELATIONSHIP BETWEEN EXPANSION AND INEQUALITY IN EDUCATION

The general perception is that educational expansions help to reduce socioeconomic inequality in access to education by providing new opportunities to social groups previously excluded from the educational system at any level. However, before discussing to what extent this general statement is accurate, it is necessary to revisit the key concepts at play. Therefore, I now proceed to define the key concepts that articulate this thesis: expansion of higher education, inequality by social origins, and the main theories that explain the relationship between the two.

1.1. What do we understand by "expansion of (higher) education"?

The expansion of education can be conceived either as an increment to the collective effort dedicated to education (i.e. as a growth in the percentage of GDP spent on education) or as an increase in the percentage of individuals with access to a certain level of education (i.e. driven by the number of institutions and students at a certain level) (Shavit, Yaish, & Bar-Haim, n.d.). For the purpose of this work, the focus is on the latter definition, which is applied here to the increasing share of individuals with access to higher education.

Regarding the specificities of the topic under research, the reader must be warned that the concepts of *"higher education", "tertiary education"*, and *"postsecondary education"* are used interchangeably throughout this thesis. Furthermore, and following UNESCO's classification (López Segrera, Brock, & Dias Sobrinho, 2009), the definition encompasses any sort of post-secondary education, either vocational training or programmes included under levels 5 and 6 of the International Standard Classification of Education (ISCED) and labelled as "short-cycle tertiary education" and "bachelor's equivalent level".

Moving on, throughout the thesis the *"recent expansion"* corresponds to the key phenomenon under study. It corresponds to the growth of the higher education systems experienced by most Latin American countries since the late 1990s and early 2000s, apart from some specific cases such as Chile, where the process of expansion began in the early 1980s. As is explained in the following chapters, the "recent expansion" has its own characteristics that make it different from similar processes experienced by industrialised economies and from the earlier developments of higher education in the Latin American region.

1.2. What is the relationship between expansion of education and inequality?

The expansion of education has been the object of intense debate among policymakers and social stratification scholars because it has been identified as key for the promotion of social justice, cohesion, and mobility: in this way, educational expansion necessarily brings about the debate on the equalisation of opportunities across modern societies (Boliver, 2011). The key question, then, is to what extent the creation of new educational opportunities generated by a process of expansion are distributed across different social groups (Shavit & Blossfeld, 1993). There are three scenarios to be found.

First, if a strong relationship between social origins and a certain educational outcome is observed (i.e., access to higher education), one could argue that inequality is high and that the process of expansion has not contributed towards the democratisation of opportunities. A scenario like this would be one in which the privileged strata benefit more from educational expansion than the those from the lower strata.

Second, and on the contrary, if a weak or declining relationship between social origins and the same educational outcome is observed, one could argue that inequality is low, or has declined, and that the process of expansion has contributed towards increasing democratisation of opportunities. This, for example, would be the case if the children from a working-class background benefit from expansion, gaining access to a certain educational level along with children from upper-class origins.

Third, it might be a scenario in which expansion has not modified the relationship between social origins and educational outcome, regardless of the strength of the association. In this

case, one could argue that there has been maintenance of inequality or persistent inequality (Shavit & Blossfeld, 1993). From a policy perspective, then, one could add that expansion is not necessarily an effective tool for the reduction of inequality in educational opportunity.

1.3. What are the main theories on these matters?

Two main distinctions in the role of expansion must be identified: For one thing, there is the idea that expansion necessarily – almost by itself and by default – has democratised educational opportunities. This approach has its roots in the modernisation theory, also known as industrialisation theory. For another, there is the idea that expansion is not necessarily related to the decline of socioeconomic inequality in access to education. This hypothesis started with the reproduction theories and has been developed by the Maximally Maintained Inequality (so forth: MMI) and Effectively Maintained Inequality (so forth: EMI) approaches.

The modernisation theory (Parsons & Platt, 1970) claims that, as a natural consequence of the process of industrialisation, societies would require more educated workers, hence, the education system would expand in response to this demand. Therefore, as larger sections of the population gain access to education, there is a general rise in the average educational level, which leads to the democratisation of education and increasing rates of social mobility.

Even though the modernisation theory gained recognition across industrialised economies, it was soon challenged by empirical studies. In the case of secondary education expansion, for example, research showed that inequality in enrolment persisted rather than declined (Gamoran, 1996; Ichou & Vallet, 2011; among many others), giving rise to the concept of *"persistent inequality"* famously coined by Shavit and Blossfeld (1993). Latin America, although scientific evidence is scarce, is not an exception to this trend; but, more importantly, it is a case that challenges the core assumption defended by the modernisation theory: the Latin American economy is primarily based on commodity exportation, with only certain national industrialisation periods. It is worth wondering, then, how is it possible that education has expanded in the region, considering the fact that the Latin American economy has not industrialised as European economies did after the Second World War?

In response, scholars have developed new accounts of the relationship between expansion and inequality in education. In this way, the reproduction theories (Boudon, 1974; Bourdieu, 1990) of the 1970s state that as education expands, so do the mechanisms that (re)produce inequality. For example, inequality would be maintained across generations because upper classes are able to implement strategies to preserve their privileges, such as the use of their social and cultural capital to ensure better quality education for their children (that would be replicated, for example, in better job market opportunities in adulthood). In line with this general statement, the upcoming approaches contend that socioeconomic inequalities are unlikely to decline as a natural result of expansion.

The MMI approach (Raftery & Hout, 1993) argues that expansion will not reduce inequality unless saturation is reached by the most advantaged groups at the level under expansion. In this way, it responds to the maintenance of quantitative inequality in education. Originally based on the Irish case, variants of the MMI hypothesis have been found in other developed countries such as England and Wales, Italy, Switzerland, Hungary, Australia, Taiwan, Israel, the United States, Sweden, the Netherlands, Russia (Gerber & Hout, 1995), Japan (Fujihara & Ishida, 2016), France (Vallet, 2004), Scotland (Gamoran, 1996; Iannelli, Gamoran, & Paterson, 2011), and Spain (Bernardi, 2012).

The EMI approach (Ayalon & Shavit, 2004; Lucas, 2001) suggests that, concurrent with expansion, once quantitative inequality is reduced, it is replaced by qualitative inequality. In other words, the question of "how much" education is replaced by "what type" of education is attained (Boliver, 2011). Qualitative inequality, for example, is expressed in differences in access to the most prestigious programmes, institutions, and tracks between strata. These disparities are unlikely to decline or disappear even if the saturation point is reached. Originally based on the Israeli case, this theory has been confirmed in other countries such as Taiwan (Yao & Jacob, 2012), New Zealand (Strathdee, 2011), the United States (Alon, 2009), England (Boliver, 2011), and Scotland (Gallacher, 2014; Iannelli & Paterson, 2007). In this sense, expansion does not occur solely by itself, but is accompanied by differentiation and stratification processes. For the case of higher education, and to the best of my knowledge, the most complete compilation of studies has been published by Shavit, Arum & Gamoran (2007).

From the above, the reader can observe that there is not consensus on whether expansion has contributed towards the increase, decline, or maintenance of socioeconomic inequality in education. However, the following trends must be highlighted: First, MMI and EMI approaches are not opposite theories: On the contrary, they can complement each other. For example, it might be the case where saturation is reached but inequality does not decline as consequence of the increasing stratification at this level. Secondly, studies indicate that both differentiation and stratification are growing trends worldwide, both vertically and horizontally, in higher education. For instance, vertical differentiation can be observed in the delimitation of tracks, whereas horizontal differentiation can be noted in the distinction of institutions of different quality within a particular level or track (i.e., between private and public vocational institutions). Third, both differentiation and stratification are linked to the key role that institutional settings play in tackling inequality in education. In this way, privatisation can be understood as one of the most relevant factors in shaping both vertical and horizontal differentiation in education. The effect of privatisation on secondary education has been quite well explored, with, for example, research on boarding schools and elite institutions (Khan, 2010, 2012; Moya-Díaz & Hernández-Aracena, 2017). Nonetheless, the impact of privatisation on inequality at the tertiary level has not been extensively investigated across the industrialised world (with some exceptions such as Boliver, 2013; Torche, 2011). Addressing this gap in the scientific literature in the context of a developing region such as Latin America is one of the contributions that this thesis aims to make.

1.4. Why focusing on access and attendance over higher education completion?

The decision of focusing on higher education attendance rather than completion was based upon two criteria. The first one was a practical decision: considering the important data constraints that inequality research faces in Latin America, it was a more reasonable and feasible alternative to focus on attendance rather than completion. In addition, the term *attendance* is preferred over *access* to emphasise that the focus goes beyond entry to the first year. However, both terms are interchangeably used throughout the thesis.

The second criterion responds to the centrality of higher education attendance in terms of personal and social development and cohesion (UNESCO-IESALC, 2020). Regarding the former, attending higher education is in line with the rise of middle-class values, such as

those of meritocracy, upward social mobility aspirations, professional ambition, and personal success (Barozet, 2017; Fournier & Lamont, 1992; Lamont, 1992). In this sense, research has demonstrated that private returns to higher education have been on the rise in Latin America, regardless of completion, in the last two decades (Psacharopoulos & Patrinos, 2004, 2018). Regarding the latter, higher education attendance is key for issues such as labour market participation, economic growth, poverty and inequality reduction.

From the above, it is necessary to add that focusing on higher education attendance rather than completion is key considering the pending challenges that Latin American expansion still faces, such as privatisation and the lack of student support policies, as the thesis highlights. In this sense, prioritising attendance over completion is a logical step to build empirical for a better understanding of inequality in higher education.

2. PAST RESEARCH IN LATIN AMERICA

Throughout the last four decades, Latin America has faced multiple transformations, which range from democratic transitions and the installation of the neoliberal agenda in policymaking, to macroeconomic volatility and the dramatic expansion of higher education. Nevertheless, one of the key features of the region has remained unchanged: its historically high and persistent inequality, without significant variations since the first studies were published in the mid-twentieth century (Behrman, Gaviria, Székely, Birdsall, & Galiani, 2001; Gasparini & Gluzmann, 2009; López-Calva & Lustig, 2010). These processes, of course, posit important questions regarding the aforementioned theorical approaches.

Firstly, it is important to mention that all cited studies portray the processes of expansion of industrialised countries, such as Central and Western European countries, North America, and South Asia. In addition, despite it not being mentioned, the reader should consider that besides assessing different policies and institutional contexts, the studies differ greatly in their methodologies. Therefore, as some scholars have already pointed out, to what extent can approaches such as MMI and EMI be extrapolated to totally different socioeconomic contexts, that, additionally, do not contain good quality data for the study of inequality (Torche, 2010). Whilst industrialised countries are characterised by low-to-middle levels of inequality, long-dated and internationally integrated higher education systems,

macroeconomic stability, and initiated expansion of education during the industrialisation of the post-war period, Latin American countries face the opposite: high and historically persistent levels of income inequality, a relatively new higher education sector, macroeconomic instability, and recent processes of expansion not linked to industrialisation.

Secondly, there are important differences not only in the timing of educational expansion, but also in the characteristics of these processes. Across most of the developed world, the transformation from elite to mass systems took place over a timespan that began in the post-war industrialisation period and that continues until now. On the contrary, across developing countries, this is a recent and extremely fast-paced process, not linked to industrialisation but to the incorporation of the neoliberal agenda in policymaking (Doyle, 2012; Gauri, 1998; Gregorutti, Espinoza, González, & Loyola, 2014; Gruber & Kosack, 2014; Rama, 2012; Schofer & Meyer, 2005; Tilak, 2009). This would explain, for instance, why privatisation has been so strong in boosting expansion, accompanied by differentiation and stratification in education. In the case of tertiary education, high privatisation is a feature shared by all developing regions, with Latin America as its prime exponent (Garnier & Schafer, 2006; Levy, 2011).

From the above, it is not surprising that the scientific evidence on the effect of the recent expansion on inequality in higher education attendance is scarce, with published investigations for a handful of Latin American countries only. One of these studies is the work of Torche (2010), who addressed the effect of the 1980s' economic crisis on inequality in educational attainment in Brazil, Chile, Colombia, and Mexico. For the transition from upper secondary to tertiary education, her estimations demonstrated that inequality increased in Brazil, Colombia, and Mexico, but not in Chile, because of a broad policy scheme aimed to protect investments in education during the economic downturn.

Another study that addressed attendance and transition to higher education in the context of addressing socioeconomic inequality in educational attainment was conducted by Neidhöfer et al. (2017). To the best of my knowledge, their work corresponds to the most complete study on educational mobility in Latin America, including 18 countries over 50 years. Their findings confirm that there is persistent inequality at upper levels of education despite the

increasing mobility at lower levels. In this way, results also confirm that expansion has had differential effects across social groups, benefiting children from lower-class backgrounds without consistently challenging or affecting the privileges of those from upper-class origins.

These two comparative studies followed and confirmed the MMI approach, as well as provided sufficient background to start testing the MMI hypothesis. This is, precisely, what more recent investigations have done when addressing national study cases. For example, Salata (2018) explored the Brazilian case between 1995 and 2015. His findings demonstrated that expansion of higher education did not affect the influence of parental education on access until 2005. However, between 2005 and 2015, there was a slight decline in socioeconomic inequality, probably thanks to the implementation of equity and student support policies targeted at the less privileged social groups (i.e., quotas, scholarships, and subsidies). Despite the generally optimistic results, the study also demonstrated that this decline in inequality was related only to accessing tertiary education, but not to the most selective higher education institutions (public universities). Another example is the work of Sevilla-Encinas (2018) for the Chilean case in 2012. His findings also demonstrated that the effect of expansion on inequality by social origins is stronger among those located at the top: in other words, the higher the educational attainment of the parents, the higher the likelihood is of attending tertiary education. Furthermore, the effect of social origins is even stronger when evaluating not access the most selective institutions (that is, CRUCH or traditional universities).

Differences notwithstanding, the studies on inequality in access in higher education in Latin America are in line with the trend of "persistent inequality" and the MMI and EMI hypotheses. However, caution is advised considering that these studies greatly differ in their methodologies and periods under analysis. The questions, then, are: To what extent is the consistency between findings real once the same data and measurements are applied across countries? Furthermore, to what extent might including institutional settings in analyses lead to different results? These two are some of the gaps that this thesis aims to fill in the upcoming chapters.

PART I

CHAPTER 1:

THE RECENT EXPANSION OF HIGHER EDUCATION IN LATIN AMERICA

1.1. INTRODUCTION

The first chapter aims to present the context of the recent expansion of higher education in Latin America. To do so, the chapter is organised into two main sections. The first provides a brief history of higher education in Latin America, along with the presentation of a descriptive analysis of the recent expansion of tertiary education. The second section details the methodology used in all the upcoming chapters concerning Latin America, including data, sample, variables, and modelling strategy.

1.2. GENERAL CONTEXT

Higher education in Latin America has a rich history that dates back to the sixteenth century, when the first universities were established by the Spanish Crown in Dominican Republic, Mexico, and Peru (Ferreyra et al., 2017). Nevertheless, it was only after independence – around the mid-nineteenth century – that public and national universities were founded with the mission of creating professional and secular elites to rule the recently "created" states (Pineda & Celis, 2017; Rama, 2005, 2006).

The first important reform towards democratisation in higher education occurred in 1918. "The Cordoba Reform" (*Reforma de Córdoba,* in Spanish) primarily aimed to democratise the university government and to promote the scientific and secular character of education. Only secondarily did this reform also promote access democratisation through changes towards tuition-free programmes where students could enrol on a regular basis[1]. However,

[1] The Cordoba Reform aimed to promote social inclusion and the urgency of establishing a state culture throughout the national demographic. Many universities institutionalised this ideal in scholarships for students

and beyond its good intentions, the reform did not change the elitist pattern of enrolment (Rama, 2006), and its impact was inscribed to the university tier and not to the post-secondary system as a whole, only among Southern Cone countries (Argentina, Chile, Uruguay).

The second important reform towards democratisation in higher education is the one addressed in this thesis under the expression of "recent expansion". In most countries, it started in the 1990s and consolidated in the first decade of the 2000s. Despite some variation within the region, Chile was the front runner with expansion starting in early 1980s. Contrary to the coordinated effort driven by the Cordoba Reform, countries implemented different policies during this period. Differences notwithstanding, higher education transformed into a mass sector thanks to a supply-side expansion mostly inspired by the installation of the neoliberal agenda in policymaking (Rama, 2005). Neoliberalism was introduced systematically in Latin America in the 1990s with a pack of stabilisation and structural policy suggestions proposed by the World Bank, UNESCO, the Organisation for Economic Co-operation, and Development (OECD), the United Nations Development Programme (UNDP), among others[2]. Among the education policy suggestions, it was proposed that higher education should take a back seat when it came to state funding, with primary education as a priority for investment (Hostins & Hoepers, 2017). Overall, these policy suggestions started with a process of market deregulation and a retrenchment of public spending not only in education, but also in finance, pensions, and the labour market (Kurtz & Brooks, 2008).

To a greater or lesser extent, every Latin American country implemented the neoliberal agenda[3] in higher education (Hostins & Hoepers, 2017). This meant that gratuity was

from low socioeconomic backgrounds and in the so-called "extension vice-rectories" (*vicerrectorias de extension universitaria*, in Spanish), whose objective was to provide social and cultural services for the neediest populations (Pineda & Celis, 2017).

[2] It must be stated that in Latin America, from the 1950s and 1960s, these international organizations started a process of disseminating technocratic and developmental ideas that reached their peak in the 1990s and 2000s, with the intensification of the implementation of neoliberal policy suggestions. In the field of education, Hostins and Hoepers (2017) state that the World Conference on Education for All (Jomtien, 1990) and the Washington Consensus (1989) are the most important events to understand the guidelines issued by international organizations for Latin America (and the developing world) in educational matters.

[3] In short, the neoliberal agenda seeks to cause competition between higher education institutions and the state (Brunner & Uribe, 2007). I use the concept "neoliberal" to define this form of policy regulation (Giroux, 2011), whereas other authors prefer "commercialisation of higher education" due to their economic logic (Gentili, 2008).

replaced by the collection of fees and tariffs, and state funding was replaced by the introduction of market-based mechanisms both in the demand and supply side: on the one hand, through the loosened constraints imposed for the creation of private institutions; and, on the other, through the creation of selective scholarship systems and student support policies (i.e. student loans) (Bernasconi & Rojas, 2003; Rama, 2005). As result, both the number of students and institutions grew rapidly and in accordance to the so-called "market-dynamics". The "invisible hand" in higher education, then, functioned for over a decade, until the early 2000s when equity mechanisms – such as quotas and regulations to the student support policies – were introduced due to the increasing social mobilisation, which demanded the democratisation of opportunities in higher education[4].

The growth in the number of students and institutions has meant that higher education has not only expanded, but also diversified and stratified. For example, there has been an increasing number of first-generation students at this level diversifying , while the institutional setting has become more complicated with different tracks and institutions of very dissimilar profiles and academic quality[5]. In numbers, the recent expansion meant a growth in the size of the student body from 2 to circa 30 million between 1980 and 2016, which translated into a variation in gross enrolment rates[6] from 6.9 to 50.6 percent for the whole region[7], alongside the creation of approximately 2,300 new institutions and 30,000 new programmes since the early 2000s (Ferreyra et al., 2017).

[4] Chile, for instance, established in 2006 a state-guaranteed loan (*Crédito con Aval del Estado*, in Spanish) to regulate the interest rate imposed on student loans by private banks. Brazil established a quota system in the early 2000s, with the "University for All Programme" *(Programa 'Universidade para Todos', PROUNI, in Portuguese)* and a "The Student Financing Fund" *(Fundo de Financiamento Estudantil, FIES, in Portuguese).*

[5] In Latin America, the expansion of higher education has been importantly driven by the so-called "entrepreneurial" or "for-profit", whose academic quality has been broadly questioned in several countries (Mönckeberg, 2013). In broad terms, a for-profit institution is one that uses the payment of students (tuition fees, college fees, etc) for distribution to stakeholders beyond what would be considered normal distribution (Gregorutti, 2011). It has been estimated that the for-profit sector represents around 60 percent of total enrolment in higher education in Latin America (Ferreyra et al., 2017).

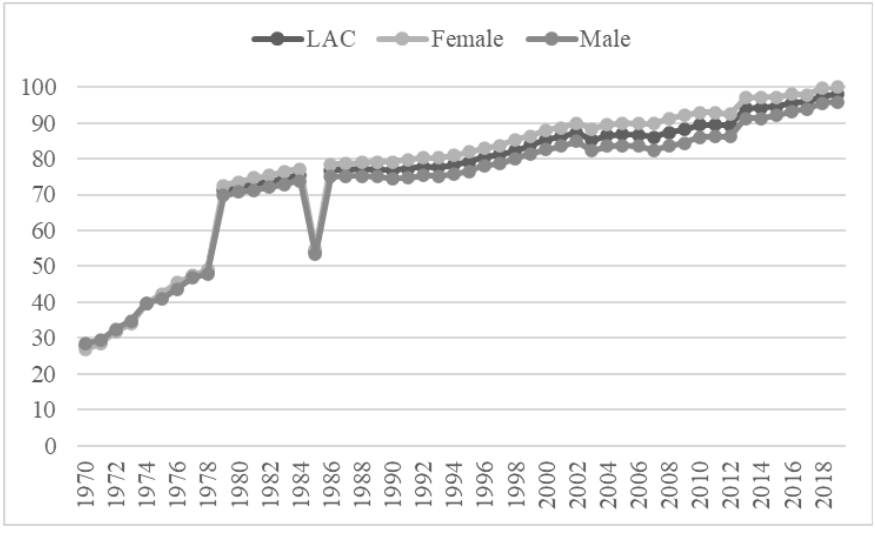
[6] The United Nations Educational, Scientific and Cultural Organisation (UNESCO), describes 'Gross Enrolment Rate' as the total enrolment within a country 'in a specific level of education, regardless of age, expressed as a percentage of the population in the official age group corresponding to this level of education. For the case of higher education, the official age group comprises18- to 24-year-olds.

[7] This estimation includes Latin America and the Caribbean. As a point of comparison, Latin America and Central Asia had very similar gross enrolment rates in 2000, but whereas the former kept growing, the latter reached only 27 percent in 2015 (Avitabile, 2017).

To contextualise these changes, it is important to add that they took place alongside education policies at other levels. For instance, among the most relevant policies, the following could be named: the mandatory years of education increased, the institutional settings have tended towards administrative decentralisation, and secondary schooling has been restructured from a five-year cycle towards a schema of two three-year cycles (Bassi, Busso, & Muñoz, 2015). Although it is true that these changes have contributed towards the general increase in the average years of schooling and larger shares of young people entering some sort of postsecondary education, there is still great heterogeneity between countries. None of the Latin American countries has reached enrolment rates like the ones shown by developed economies at the upper secondary or tertiary level. In addition, dropout and overage in secondary education are still relatively high, while transition and graduation rates in tertiary education have stagnated despite recent expansion (Avitabile, 2017).

The following figures illustrate the trends described above. Figure 1 shows the evolution of gross enrolment rate in secondary education in Latin America and the Caribbean between 1970 and 2018. The figure is clearly illustrating that participation at this level has been on a consistent rise, varying from 30 to 96 percent, on average. Furthermore, the figure also presents a reversal in the gender gap, with women outperforming men at the secondary level since 1980.

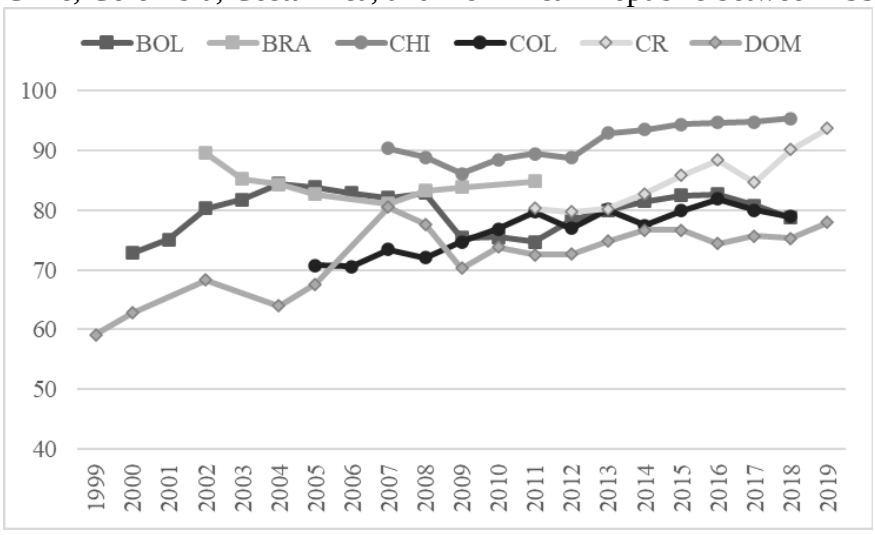
Figure 1. Evolution of gross enrolment rate in secondary education in Latin America and the Caribbean between 1970 and 2018



Source: Author's elaboration based on Word Bank (2020)

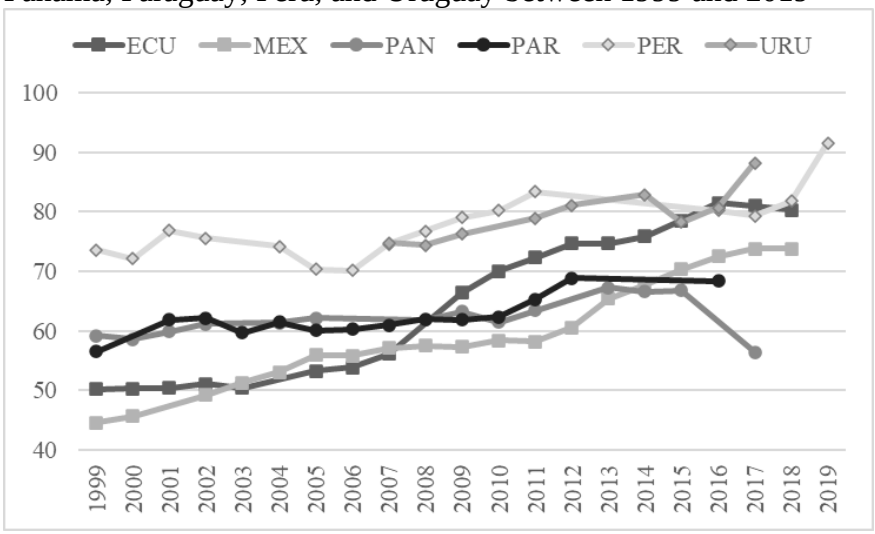
With regards to the evolution of net enrolment in upper secondary, Figures 2 and 3 present the estimates for the 12 Latin American countries included in this thesis between 1999 and 2019. For example, it is noteworthy that Dominican Republic in 2019 had not reached the enrolment level displayed by Brazil in 1999 (see Figure 2), or that Mexico reached in 2019 the enrolment level showed by Peru in 1999. In this way, despite rates having been on the rise, the heterogeneity at this level might reflect the differences in human development across the region.

Figure 2. Evolution of net enrolment rate in upper secondary education in Bolivia, Brazil, Chile, Colombia, Costa Rica, and Dominican Republic between 1999 and 2019



Source: Author's elaboration based on UNESCO – Institute of Statistics (2019)

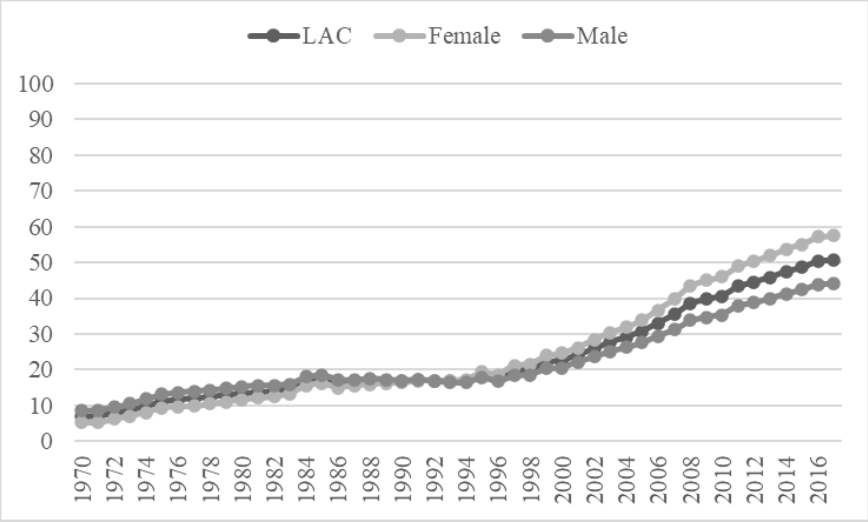
Figure 3. Evolution of net enrolment rate in upper secondary education in Ecuador, Mexico, Panama, Paraguay, Peru, and Uruguay between 1999 and 2019



Source: Author's elaboration based on UNESCO – Institute of Statistics (2019)

Keeping in mind the favourable growth of enrolment in secondary education, Figure 4 shows that there was an overall increase in the gross enrolment rate in higher education between 1970 and 2016. Within the overall increase, three stages can be identified: A first phase with a slight growth between 1970 and 1982; a second stage of stagnation from the 1980s until mid-1990s, and a third, or recent stage, with a rapid and consistent expansion over the early 2000s. Alongside a historical gross enrolment rate of 50.6 percent in 2016, this phase also witnessed the reversal of the gender gap in higher education in favour of women.

Figure 4. Evolution of gross enrolment rate in higher education in Latin America and the Caribbean between 1970 and 2016



Source: Author's elaboration based on UNESCO – Institute of Statistics (2019)

Now, for a better understanding of the recent expansion, it is necessary to compare the evolution of enrolment in secondary and tertiary education. In this sense, what previous figures show is that both have been on the rise, but the growth has been steeper and faster in tertiary rather than in secondary education. In this sense, what this scenario suggests is that the number of seats in higher education might have increased faster and beyond what was needed by the growth of upper secondary graduates. In this way, might this be enough to reduce inequality by social origins in tertiary education? Or might it have changed the patterns of inequality in access to higher education? These are some of the queries that this thesis aims to address.

1.3. METHODOLOGY

The lack of data on social origins in Latin America[8] has been one of the main obstacles to conducting research on inequality by social origins across the region. Therefore, the *coresidence approach* emerges as one of the methodological alternatives to overcome this situation. By definition, the *coresidence approach* consists of the association of the socioeconomic characteristics of the head of the household and his/her partner (if any) with those of the children living in it (so forth: coresidents) (Behrman et al., 2001). Consequently, regarding this thesis, the socioeconomic information of the head of the household and his/her partner (if any) are used as proxy estimates of social origins together with other household characteristics.

It is important to state that the coresidence approach has been adopted as the most suitable methodological alternative because attendance at higher education is a transition that happens relatively early in life, usually between the age of 18 and the early 20s. For Latin America, research has demonstrated that this transition happens before most young people leave their parental home, an event that happens around mid-to-late 20s. For example, De Vos (1989) has shown that it is between the ages of 22 and 25 that is the threshold at which half of individuals no longer live in the parental home, despite existing differences between countries, zones of residence (rural vs urban areas), and gender. Furthermore, Marchionni and colleagues (2011) suggest that coresidence rates for this group of the population are higher in Latin America than in other developing regions. Some explanatory factors behind the heterogeneity between countries are the following: socioeconomic status (parents in higher strata might be better able to afford to keep their children at home, whilst parents in lower groups might have to let their children fend for themselves at a younger age), gender (males would stay longer in the parental home than females), and education (more educated people are likely to live longer in the parental home by delaying their entry to the labour market) (De Vos, 1989; Esteve, García Román, & Lesthaeghe, 2012). There is also recent evidence suggesting that the expansion of tertiary education might have contributed to an increase in coresidence rates among young adults in Latin America: Ferreyra (2017) argues

[8] Understood as the lack of quality administrative registers, panel data, and cross-sectional surveys with retrospective questions on social origins.

that the provision of tertiary education has not only grown but also decentralised, contributing to an increase in the share of young adults attending institutions close to their homes, which might have discouraged and/or delayed the age of nest-leaving.

1.3.1. Data

National household census data was used for each of the 12 countries included in the analysis: Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, and Uruguay. These countries were selected based upon the information available on social origins in the data retrieved from IPUMS International, an initiative led by the Population Centre at the University of Minnesota. To the best of my knowledge, IPUMS International is the largest and most comprehensive initiative that gathers and harmonises micro-level census data for comparative research. To date, the project includes more than 360 censuses from more than 90 countries, being mostly used for demography research. Using IPUMS International for addressing inequality by social origins in higher education is, then, another of the contributions and novelties of this thesis.

Due to the cross-sectional character of the selected data, two censuses were selected for each of the 12 countries. In total, 24 censuses were included in the regional sample to evaluate the effect of social origins *before* and *after* the recent expansion of higher education. Thus, I refer to the censuses conducted in the 1990s or early 2000s (depending on the country) as *Census 1*, which will be used to assess the effect of social origins *before* (or a very early state of) the expansion. Thereby, I refer to the censuses conducted around 2010 to address the effect of social origins *after* the bulk of the expansion process as *Census 2*.

As stated above, the periodicity of censuses depends on the countries and the full list of the censuses included in the sample is presented in Table 1. With regards to this periodicity, the reader must be informed that for the cases of Bolivia, Chile, and Colombia, censuses conducted in the first half of the 1990s *(Census 1)* and 2000s *(Census 2)* will be used. One could argue that this would deviate from the research design; however, these correspond to the states that implemented expansion policies first across the region[9]. Further explanations

[9] The case of Chile is paradigmatic as it is considered the first country in the world to implement neoliberal policies in education in the 1980s after the Educational Reform of 1981 (Brunner, 1993; Huerta et al., 2011).

and potential biases arising from this decision are discussed in the chapter dedicated to the conclusions of the thesis.

Table 1. List of datasets used by country.

COUNTRY	CENSUS 1	CENSUS 2
BOLIVIA	1992 National Census of Housing and Population	2001 National Census of Housing and Population
BRAZIL	2000 Demographic Census	2010 Demographic Census
CHILE	1992 XVI National Population census and V Housing Census.	2002 XVII National Population census and VI Housing Census.
COLOMBIA	1993 XVI National Population and V de Housing Census.	2005 XVII National Population and VI Housing and Dwellings Census.
COSTA RICA	2000 X National Population census and V Housing Census.	2011 X National Population census and VI Housing Census
DOMINICAN REPUBLIC	2002 VIII National Population Census	2010 IX National Population and Housing Censuses
ECUADOR	2001 VI Population and V Housing Census.	2010 VII Population and VI Housing Census.
MEXICO	2000 XII General Population and Housing Census.	2010 XIV Population and Housing Census.
PANAMA	2000 X National Population Census and VI Housing Population Census	2010 XI National Population Census and VII Housing Population Census
PARAGUAY	1992 National Population and Housing Census	2002 National Population and Housing Census
PERU	1993 IX Population and IV Housing Census.	2007 XI Population and VI Housing Census.
URUGUAY	1996 General Population Census (III Household and V Housing Census).	2011 General Population Census (IV Household and VI Housing Census).

Source: Author's elaboration based on IPUMS International.

1.3.2. Sample

The sample was defined using the coresidence approach based on three selection criteria: relationship to the head of the household, age, and zone of residence.

Relationship to the head of the household is fundamental the coresidence approach. Therefore, only respondents related as child to the head of the household or to his/her partner (if any) where they lived when surveyed were considered for the sample.

The age range for coresidents was defined in accordance with the official ages for tertiary schooling described by UNESCO (2015) for each of the countries, plus two more years. The original age ranges vary between 17 or 18 and 21 or 22 (depending on the country), but two

Colombia, in the same way, introduced educational opening reforms between 1991 and 1994 (León Camargo & Quiñones Gomez, 2018) and Bolivia enacted reforms to its education law in 1994 (Cajías de La Vega, 2013).

years were added due to the high rate of overage in secondary education described across Latin America (Bassi et al., 2015). The age ranges defined by UNESCO and in the sample by country are described in Table 2.

Table 2. Age range defined by UNESCO for tertiary schooling and the age range defined in the sample by country.

COUNTRY	OFFICIAL AGES FOR TERTIARY SCHOOLING	AGE RANGE IN THE SAMPLE
BOLIVIA	18 to 22	18 to 24
BRAZIL	18 to 22	18 to 24
CHILE	18 to 22	18 to 24
COLOMBIA	17 to 21	17 to 24
COSTA RICA	17 to 21	17 to 24
DOMINICAN REPUBLIC	18 to 22	18 to 24
ECUADOR	18 to 22	18 to 24
MEXICO	18 to 22	18 to 24
PANAMA	18 to 22	18 to 24
PARAGUAY	18 to 22	18 to 24
PERU	17 to 21	17 to 24
URUGUAY	18 to 22	18 to 24

Source: Author's elaboration based on UNESCO (2015).

Finally, zone of residence emerged as the last selection criteria because preliminary analyses showed that coresidence rates for the sub-sample of respondents aged between 17 or 18 and 24 are higher in urban than in rural areas (see Appendix 1): at least 50 percent of respondents in this age range still live in their parental home in urban areas, a share that has remained stable during the intercensal period. On the contrary, in rural areas the proportion of coresident respondents is declining.

From the criterion described above, it is important to add that the distinction between urban and rural respondents was established in 11 out of the 12 countries. In the case of Uruguay all respondents were considered as urban coresidents because its censuses do not distinguish between urban and rural areas. Nevertheless, it is relevant to add that nearly 90 percent of the Uruguayan population resides in only one major urban settlement (Montevideo) (World Bank, 2018).

To retrieve the datasets from IPUMS International, country samples were customised at 2.5 percent. As there was great heterogeneity in the sample sizes per country, weights were calculated considering the average sample size (48,900 observations per country).

1.3.3. Variables

Even though IPUMS International provides a comprehensive set of harmonised variables to facilitate comparative research, it was necessary to adapt the selected variables to the Latin American context and to the purposes of this thesis[10].

The dependent variable corresponds to *higher education attendance*, formulated as a dummy variable for which (0) is "*Never attended higher education"* and (1) *"Has attended higher education"*. Following UNESCO's classification, the definition encompasses any sort of post-secondary education, either vocational training or programmes included under levels 5 and 6 of the International Standard Classification of Education (ISCED) and labelled as "short-cycle tertiary education" and "bachelor's equivalent level".

At this stage, the reader must be reminded that the expressions "higher", "tertiary", and "post-secondary" education are used interchangeably throughout this thesis. In addition, it must also be highlighted that the expression *attendance* refers to access to any sort of post-secondary education, regardless of completion. This is usually preferred over *access* to emphasise that the focus goes beyond entry to the first year. However, in some instances, both terms are interchangeably throughout the thesis.

Following the explanatory variables, two groups were identified. To address the effect of the expansion, *census* was included as a dummy variable, with (0) as *"Census 1"* and (1) as *"Census 2"*. Now, *social origins* were operationalised into two sets of variables following the multidimensional definition provided by Bukodi and Goldthorpe (2013) and in line with the work developed by Torche and Costa-Ribeiro (2012) and Torche and Spilerman (2008) for the Latin American context. This encompassing definition identifies *parental sociocultural resources* and *economic resources.*

From an analytical perspective, it is important to emphasise that each component aims to capture different mechanisms through which social (dis)advantage is passed intergenerationally. On the one hand, *parental sociocultural resources* aim to capture the influence of parental education in a Bourdieusian manner: that is, parents' capacity to impact

[10] A full inventory with the original and re-harmonised variables is available to the reader in Appendix 2.

on their children's educational career using their knowledge of the educational system to provide informed guidance and creating a supportive learning environment. On the other hand, parental economic resources aim to capture what literature refers as 'affluence shields' and 'poverty traps' (Prieto, 2021): that is, the process of opportunity hoarding or deprivation that explains either affluence or poverty persistence, respectively, and going beyond their definition linked to income. In this way, economic resources are conceptualised in a range of indicators that includes from home ownership and assets to the head of the household's labour market attachment. In my opinion, this is an appropriate decision considering that although Latin America is characterised by a high level of inequality, much remains unknown about its persistence

Parental sociocultural resources are presented as *parental educational attainment*, variable defined considering not only the education of the head of the household but also his/her partner's, if any (considering the household structure, either as a two or single-parent household). This is another contribution and novelty of the thesis as the existing literature usually follows the dominance approach[11]. In addition, it must be highlighted that ordinal data on educational attainment is well-suited to detect recent changes in education inequality, being preferred over continuous measures (for more information, see: Permanyer & Boertien, 2021).

The variable, then, was divided into the following six categories (1) *"One or both parents attained less than primary education"*; (2) *"One or both parents attained primary education"*; (3) *"One parent attained primary education and the other secondary education"*; (4) *"One or both parents attained secondary education"*; (5) *"One parent attained secondary education and the other tertiary education"*; and (6) *"One parent with tertiary education OR both parents with tertiary education"*.

Parental economic resources were also operationalised into two groups of variables. The first of them is *home ownership,* a dummy variable where (0) is *"No"* and (1) is *"Yes"*. The second variable corresponds to the *household assets index*, which was constructed based on

[11] This approach consists of considering only the parent with the highest educational attainment. The "dominance approach" has been largely used in comparative research on inequality due to theoretical grounds and data availability (where the association between father's and son's outcomes is mostly evaluated).

the availability in the household of the following resources*: electricity, water supply, at least one phone or cell phone, 3 or more rooms in the household, electricity, and at least one of the parents participating in the labour force when surveyed*. Although the last two variables do not correspond to assets as such, they were considered useful indicators to determine the socioeconomic position of households and their living conditions, considering that in Latin America both overcrowding and informality in urban areas is common. Each of these assets was operationalised as a dummy variable – with (0) as *"Not available"* and (1) *"Yes, available"* – and added into a single index, then, normalised into z scores.

Finally, two types of control variables were selected. As *demographic controls*, respondent's *gender* and *age* were included; with the former as a dummy variable (with *"Female"* as (0) and *"Male"* as (1) and the latter as a continuous variable ranging between 17 or 18 (depending on the country) and 24 years[12]. Household composition considered *family size, the number of families in the household, the number of respondent's own children under 5*. Whereas the former was defined as a continuous variable (ranging between 2 and 18, depending on the country and census), the latter two were conceptualised as dummy variables. It is important to mention that the latter two household variables were selected based on demography research in Latin America. There is a robust body of research that shows that teenage maternity/paternity is one of the main causes behind dropouts and coresidence (Bassi et al., 2015); together with the prevalence of multigenerational households and multiple cohabitation across the region (Arenas, 2017; Gandelman, 2009; Liu, Esteve, & Treviño, 2017).

Table 3 presents a summary of the variables included in the dataset, distinguishing between dependent, explanatory, and control variable. Table 4 presents the descriptive statistics for each of them at the regional level[13].

[12] It must be stated that neither ethnicity nor race were included as control variables due to data availability (i.e. these questions were not available for every country and/or there are inconsistencies in their measurement between countries). In addition, literature on educational attainment has reported that ethnicity is not relevant in Southern cone countries like Chile (Torche, 2010); suggesting gender is more statistically significant.

[13] For descriptive statistics at the country level, please see Appendix 3.

Table 3. Summary of variables included in the dataset.

NAME	TYPE	CATEGORIES
DEPENDENT VARIABLES		
Higher education attendance	Dummy	0: Never attended higher education 1: Has attended higher education
EXPLANATORY VARIABLES		
Census	Dummy	0: Census 1 1: Census 2
Parental education	Ordinal	1: One or both parents attained less than primary education 2: One or both parents attained primary education. 3: One parent attained primary education and the other secondary education. 4: One or both parents attained secondary education. 5: One parent attained secondary education and the other tertiary education. 6: One parent with tertiary education OR both parents with tertiary education.
Home ownership	Dummy	0: No 1: Yes
Household assets index	Continuous	Z scores
CONTROL VARIABLES		
Gender (respondent's)	Dummy	0: Female 1: Male
Age (respondent's)	Continuous	0: 17 years 1: 18 years 2: 19 years 3: 20 years 4: 21 years 5: 22 years 6: 23 years 7: 24 years
Number of families in the household	Dummy	0: 1 family 1: 2 families or more
Family size	Continuous	2 to 18 members
Number of respondent's own children under 5	Dummy	0: None 1: 1 or more children

Source: Author's elaboration.

Table 4. Descriptive statistics at the regional level.

NAME	N (VALID)	MIN	MAX	MEAN	SD
DEPENDENT VARIABLE					
Higher education attendance	1,159,684	0	1	.213	.410
EXPLANATORY VARIABLES					
Census	1,159,684	0	1	.493	.499
Parental education	1,152,581	1	6	2.321	1.238
Home ownership	1,154,193	0	1	.814	.388
Household assets index (z scores)	1,150,405	3.46e-07	5.17	4.136	1
CONTROL VARIABLES					
Gender	1,159,684	0	1	.542	.498
Age	1,159,685	0	7	3.498	2.031
Number of families in the household	1,159,684	0	1	.967	.178

Family size	1,159,684	2	19	5.348	2.181
Number of own children under 5	1,159,684	0	1	.081	.272

Source: Author's elaboration.

1.3.4. Modelling strategy

Logistic regression (logit) models were conducted to estimate the effect of social origins on higher education attendance. To address whether the expansion has changed (or not) the effect of social origins, interaction effects were included. Finally, marginal effects were estimated to calculate the predicted probabilities to attend higher education in each census.

It is important to add that for each model (either main or interaction effects models) two approaches were used. I refer to an *unconditional approach* when the whole sample is considered in the estimation, providing information about the probability of attendance regardless of respondents' educational attainment. Then, what I call *conditional approach* considers only the subsample composed of those respondents who were eligible to attend higher education. In this way, it includes only the group of respondents with completed upper secondary, providing information about the barriers in this specific transition only. The objective behind presenting estimations obtained through these two approaches is to gauge when inequality in higher education attendance emerges (Torche, 2010). Therefore, the unconditional approach shows the cumulative effect of social origins throughout the educational career, whereas the conditional approach offers specific information about the effect of socioeconomic differences at a certain point in the educational career (in this case, in the transition between upper secondary and tertiary education). The distinction between approaches is supported by the evidence provided by past research. In this way, inequality in tertiary education is, to a large extent, an extension of inequality at lower levels of education; in addition to some specific barriers found at the tertiary levels (e.g. inadequate information, lack of motivation, academic preparation, social and cultural capital, among others) (Marmolejo, 2016).

Finally, robustness was verified by replicating analyses on the sub-sample of urban coresidents aged between 17 or 18 and 21 years (depending on the country) and conducting

unweighted estimations. In all cases, there were no significant differences either in the effect or strength of the obtained coefficients.

CHAPTER 2:

"THE MORE" ... "THE MERRIER" IN HIGHER EDUCATION?

2.1. INTRODUCTION

In the last three decades, Latin American countries have experienced rapid growth of their higher education systems, an event defined as a *dramatic* process (World Bank, 2018). On the one hand, the dramatic natura of this growth is related to the impressive character behind the expansion: in no other region in the world has higher education grown so fast in such a short period of time. On the other hand, expansion is a key process for Latin American governments, policymakers, and social stratification scholars due to its association with inequality in education. This, the reader must remember, is one of the most important social drivers in Latin America, the region acknowledged as the most unequal in the world. In this sense, tackling inequality in higher education is a cross-cutting goal for all these actors in pursuit of social cohesion and democratic stability. But, to what extent has the *dramatic growth* of higher education strengthened or reduced the *dramatic inequality* at this level?

The general perception is that the recent expansion has been a positive change: *"the more, the merrier"* in higher education. This perception is based upon the fact that never have so many people attended tertiary education and never have so many institutions been distributed across vast territories. However, the expansion has also been associated with new problems. Never have so many people been in college debt (Disi Pavlic, 2018; Donoso, 2013), graduation rates have remained steadily low (UNESCO-IESALC, 2020), and never have so many institutions been banned for profit-making (Bellei, Cabalin, & Orellana, 2014; Fleet & Guzmán-Concha, 2017; Mönckeberg, 2013). In this sense, it is worth questioning: Does *"the more"* necessarily means *"the merrier"* in higher education? Is the fact that more people are

attending higher education enough to reduce inequality by social origins? To what extent have the new opportunities created by the expansion benefited all social groups?

The general aim behind this chapter is to shed some light on these queries. Specifically, the following research question is addressed: *Has the recent expansion reduced inequality by social origins in higher education attendance in Latin America?* Pursuing this enquiry expects to contribute to several fronts.

In the first place, it seeks to contribute towards the inclusion of Latin America in the literature of educational stratification. On the one side, including Latin America within this stream of research means adding variability to an endeavour that has focused mostly on the study of industrialised economies. On the other side, the thesis aims not only to include Latin America in international research, but also to promote comparative research within the region. In this way, much remains unknown regarding the particularities of the processes of educational expansion and patterns of inequality in Latin America.

In the second place, this research seeks to present and test a methodological design aimed to overcome the lack of suitable data to conduct research on inequality by social origins. This design is based on the use of the coresidence approach and on the provision of a more comprehensive definition of social origins. Regarding the former, and to the best of my knowledge, no other research has applied and tested this approach is such a vast number of Latin American countries. Regarding the latter, and as far as I am aware, no other study has applied and tested inequality in higher education considering not only parental education as social origins, but also parental economic resources in Latin America. In this way, this thesis aims to contribute towards a more comprehensive understanding of the intergenerational transmission of social (dis)advantages within the Latin American context.

In the third place, the results presented in this thesis expect to serve as input for social stratification researchers, governments, and policymakers working in inequality in higher education. It is important to emphasise that educational inequality represents one of the most important drivers towards social mobilisation in the region, and democratising opportunities in higher education is key to guaranteeing personal and social development, as well as social cohesion and democratic stability (UNESCO-IESALC, 2020).

Specifically, this chapter focuses on addressing inequality by social origins in higher education attendance at the regional level: that is, including the 12 selected countries in a single analysis. The specificities of each of the national cases are discussed in the upcoming chapters. Therefore, after the introduction, the chapter is structured as follows: the second section details the general expectations, considering the information provided in the first chapter. The third part presents the results, including both descriptive and multivariate analyses. The fourth section contains the conclusions, before proceeding with the thesis.

2.2. EXPECTATIONS

Based upon past research conducted both in a handful of Latin American countries and industrialised economies, three general expectations are presented. Before detailing each of them, however, the reader must be reminded that this thesis has an exploratory character; therefore, I use the concept of expectations rather than hypotheses to present the potential findings.

The first expectation claims that there is no reason to find that the recent expansion would have reduced inequality by social origins in access to higher education in Latin America. Research conducted across industrialised economies (Shavit et al., 2007) and Latin American countries (Neidhöfer, 2016; Neidhöfer et al., 2017; Salata, 2018; Sevilla Encinas, 2018; Torche, 2010) has confirmed that there has been no decline in the strength of the relation between social origins and access to higher education. This is what scholars have defined as *persistent inequality* (Shavit & Blossfeld, 1993). However, it is important to mention that the expansion of higher education in Latin America has mostly benefited from the trends in upper secondary completion rates rather than by increasing entry rates of secondary graduates into tertiary education (Avitabile, 2017).

The second expectation refers to the effects associated with the components of social origins in higher education attendance. Based on past research (Salata, 2018; Torche, 2010), there is no reason to expect a decline in the effect of parental sociocultural resources (that is, parental education). Furthermore, there is no reason to expect that the effect of parental sociocultural resources would be stronger than the influence of economic resources, or vice versa. To the best of my knowledge, no studies have addressed the influence of the different components of social origins on access to higher education across Latin America.

The third expectation claims that despite the fact that inequality by social origins in access might not have been reduced after the recent expansion of higher education, this does not necessarily mean that all social groups have been equally affected by it. In other words, it is reasonable to expect that the expansion might have had different impacts on the probability of different social groups to access higher education. This scenario, for example, would explain that the persistently high inequality that characterises Latin America is the result of the increasing fluidity at the bottom of the social hierarchy and a greater concentration of opportunities, resources, and privileges at its top (Araujo & Martuccelli, 2011; Neidhöfer, 2016; Neidhöfer et al., 2017; Torche, 2005b).

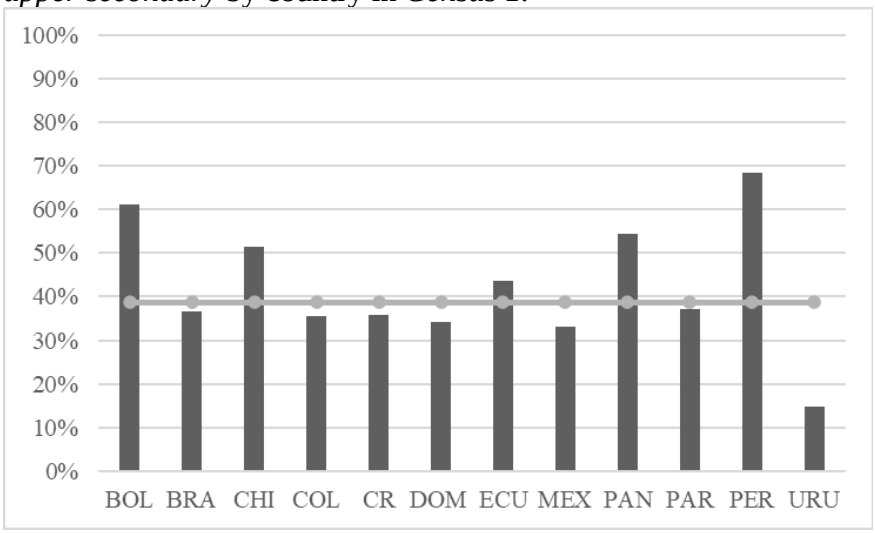
2.3. RESULTS

Now that the theoretical expectations have been outlined, I proceed by presenting the main descriptive and multivariate results. The reader must remember that this chapter acknowledges the 12 selected countries as a group to give a proxy estimate for the Latin American region.

2.3.1. Descriptive results

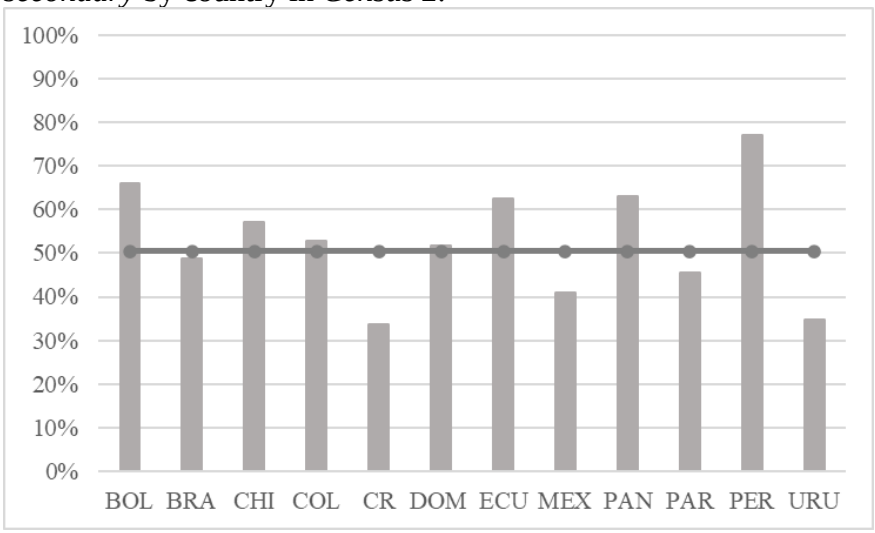
To characterise the effect of the expansion on higher education attendance, I must start by presenting the context in which this transformation occurred. To do so, it is crucial to examine the completion rates at the upper secondary level, not only regionally, but also for each of the 12 countries included in the sample. These estimates are presented below in Figures 1 and 2, in which the regional mean by census is identified. These figures show that there has been an important upgrade in all countries, which translated into a regional average that rose from 39 to 50 percent between Census 1 and Census 2. Although all countries show an increase, there is heterogeneity: whereas the most marked growth is shown in the case of Uruguay and Ecuador (with an increase of almost 20 percent), there is only one case with a decrease (Costa Rica).

Figure 1. Proportion of urban coresidents (aged between 17 or 18 and 24) with *completed upper secondary* by country in *Census 1*.



Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 2. Proportion of urban coresidents (aged between 17 or and 24) with *completed upper secondary* by country in *Census 2.*

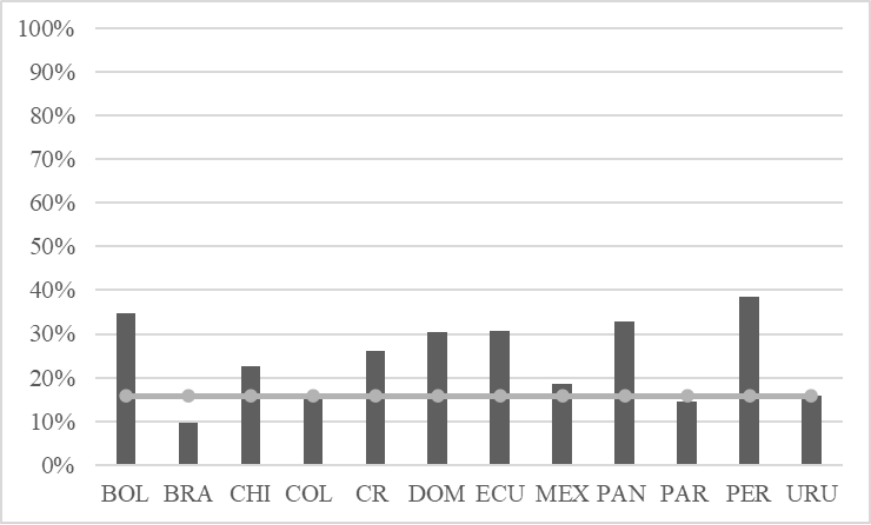


Source: Author's elaboration based on IPUMS International (unweighted calculations).

Following with the characterisation, Figures 3 and 4 show the proportion of respondents who have ever attended higher education by country and census, including the regional average. There is an overall increase at the general level, with a variation from 16 to 27 percent. Furthermore, it can be observed that the countries with the highest proportion of secondary graduates (Uruguay and Ecuador) are the ones with more marked increases in higher education attendance. Again, countries with null and negative variations are observed (Bolivia and Panama). These estimates reinstate one of the queries presented in the

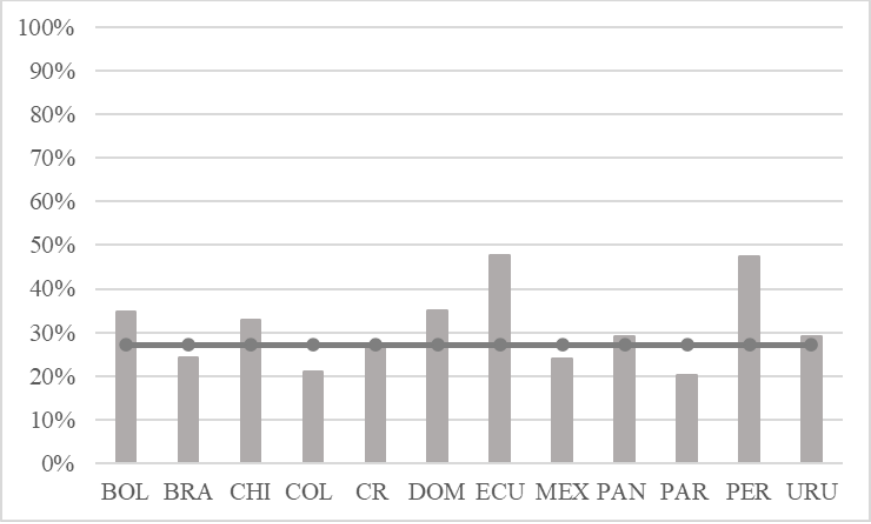
introduction: to what extent is the expansion of higher education a consequence or response to an increase of the number of upper secondary graduates?

Figure 3. Proportion of urban coresidents (aged between 17 or 18 and 24) *who have ever attended higher education* by country in *Census 1* (unconditional approach).



Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 4. Proportion of urban coresidents (aged between 17 or 18 and 24) *who have ever attended higher education* by country in *Census 2* (unconditional approach).



Source: Author's elaboration based on IPUMS International (unweighted calculations).

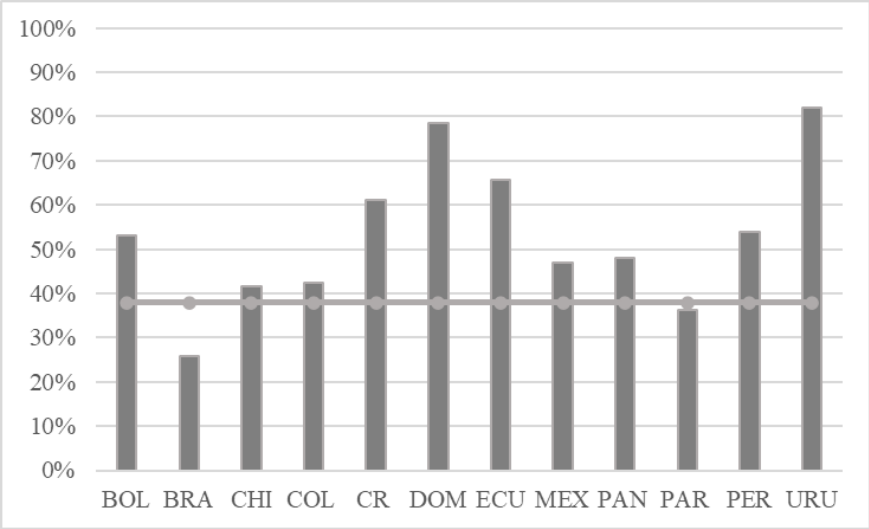
To shed some light to the previous question, Figures 5 and 6 illustrate the proportion of respondents with completed upper secondary and who have ever attended higher education by country and census, including the regional average. Despite general but moderate increase – with a regional mean that rises from 38 to 48 percent – half of the countries show null or negative variations (Bolivia, Colombia, Costa Rica, Dominican Republic, Panama, and

Uruguay). Among the other six countries that present a positive variation, Brazil and Chile are the ones with most marked fluctuations over the intercensal period (with a variation of 18 and 15 percentage points, respectively).

The fact that the increase in upper secondary completion rates is not accompanied by a parallel growth in the transition rates to tertiary education provides preliminary evidence to challenge the "positive" or "optimistic" perception associated with expansion. Then, it is worth questioning: Does *"the more"* necessarily means *"the merrier"* in higher education? Or to what extent has the increase in the number of seats in tertiary education institutions meant the democratisation of opportunities at this level?

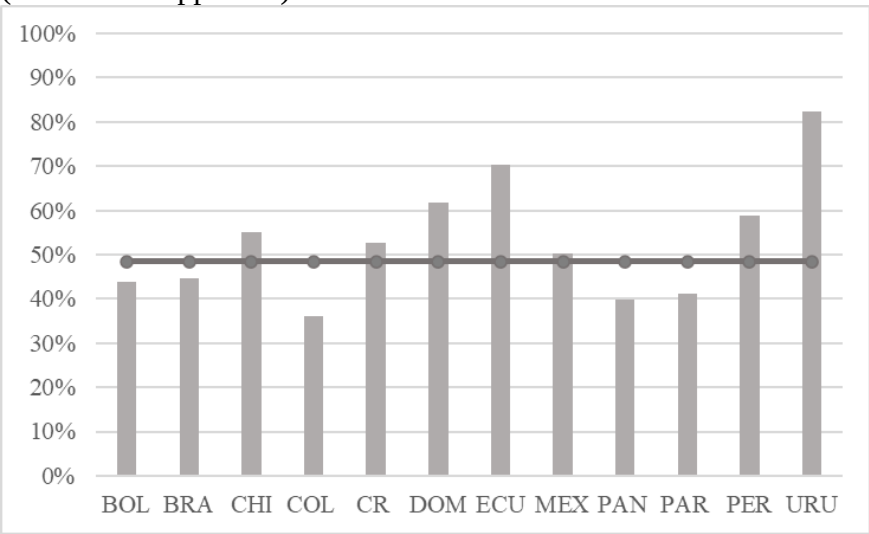
It could be argued that the reason why higher education expanded is because there are more and more eligible people to access this level. Therefore, even if transition rates do not grow at all, there would be an expansion in tertiary education. This is what scholars such as Avitabile (2017), Haimovich-Paz (2017), Bassi and colleagues (2015), among others, refer to as "the demographic bonus". In addition, it could also be argued that the differences between the proportions of upper secondary completion and transition to higher education might indicate that the expansion has not modified the effect of social origins in the latter. In this sense, Torche (2010) states that the education system has expanded at all levels, accompanied by a stagnation in the transition rates at the upper levels because of the widening gaps between social groups. Therefore, the stagnation in the transition rates can be explained by the less advantaged groups "losing more" than their more affluent counterparts during the 1980s economic downturn. By "losing more" the author refers, for example, to dropping out due to the lack of a strong social protection net; a situation that more advantaged groups did not face. Following this line of research, Neidhöfer and colleagues (2017) suggest that what happened over the early 2000s – in the context of the commodity boom – is a situation where the most privileged sectors reinforced their advantages without detriment to the upward mobility of the less affluent group at the bottom of the educational ladder. In this way, is this what has happened in the case of higher education after the recent expansion? This is one of the questions to be explored in the multivariate analyses.

Figure 5. Proportion of urban coresidents (aged between 17 or 18 and 24) *with completed upper secondary and who have ever attended higher education* by country in *Census 1* (unconditional approach).



Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 6. Proportion of urban coresidents (aged between 17 or 18 and 24) *with completed upper secondary and who have ever attended higher education* by country in *Census 2* (conditional approach).



Source: Author's elaboration based on IPUMS International (unweighted calculations).

2.3.2. Multivariate results

Before commenting on the estimates, a point must be made about their interpretation, as these are the first multivariable results presented in the thesis. Because the sample is large, there is a focus on the sign and the size of the coefficients. The sign of the coefficient indicates whether the variable under evaluation (i.e., parental education) is positively or

negatively associated with the likelihood of attending higher education. The size of the coefficient, in turn, shows the strength of the association between the variable under evaluation and the likelihood of attending higher education: then, higher coefficients signal stronger relationships, whereas coefficients closer to zero, signal a weaker association. In addition, coefficients obtained in different variables are not comparable between them because their measurement differs greatly (i.e., home ownership corresponds to a dummy variable and household assets to a continuous index expressed in z scores). For comparison, interaction effects are calculated, whose coefficients are interpreted in accordance with the indications given regarding their sign and size.

Now proceeding with the estimations, Table 1 presents the coefficients obtained in the first three logistic regressions for the two groups of interest. The reader should be reminded that the unconditional approach considers the entire sample of urban coresidents aged between 17 or 18 and 24. In turn, the conditional approach considers the subsample of urban coresidents in this age range who have completed upper secondary. Three models are presented in Table 1, following the inclusion of an increasing number of explanatory variables and their interaction effects.

Model 0 is the least elaborate estimation as only one explanatory variable is included: through the evaluation of the effect of census I aim to capture the effect of expansion on isolation. Coefficients that are statistically significant are obtained through the unconditional approach, showing a positive impact of the expansion on the unconditional probabilities of attending higher education. This estimation is in line with the descriptive results presented in the previous section.

Model 1 includes all explanatory and control variables. What first attracts attention is that all explanatory and control variables received highly significant coefficients, indicating that all of them affect the likelihood of attending higher education independently. Regarding the effect of the expansion (through the census variable), it is observed that the coefficient is positive in the unconditional approach, whereas it is negative in the conditional. These differences are in line with the descriptive analyses: the positive effect is related to the increase in the proportion of respondents who have ever attended tertiary education, whereas the negative effect in the conditional approach is in line with a stagnation in the transition

rates between upper secondary and tertiary education despite the expansion. Regarding the effect of the different components of social origins, it can be argued that parental education, home ownership and household assets positively and independently affect the likelihood of attendance: having more educated parents or living in a better-off household increase the likelihood of attending higher education.

Model 2 included all explanatory and control variables, in addition to their interaction effects for a better understanding to whether the expansion has changed the impact of the different components of social origins. On the one side, parental education has a statistically significant negative effect, regardless of the approach. The coefficients obtained are similar in both the unconditional and the conditional approach: in both cases a small decline in the effect of parental education on the likelihood of attending higher education. On the other side, home ownership shows no significant variations; whereas the role of household assets differs by approach: it has slightly strengthened only for the transition between upper secondary and higher education, suggesting a very small but statistically significant increasing effect on the likelihood of attendance.

Before exploring the potential mechanisms at play behind previous estimations across social groups, it must be reported that all control variables behave as expected, with consistent trends for Model 1 and Model 2. For example, gender displays a negative effect, signalling that male respondents have a lower likelihood of attending higher education when compared to their female counterparts. Likewise, negative coefficients are observed in the case of having own children and living in a household with larger families. The only positive coefficient is observed for the case of age, which suggests that the likelihood of attendance increments across years.

Table 1. Logit models (coefficients and p values) for higher education attendance (Model 0 and Model 1), including interaction effects between social origins and Census 2 (Model 2) for urban coresidents (aged between 17 or 18 and 24) (unconditional and conditional approaches).

	MODEL 0		MODEL 1		MODEL 2	
	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach
CENSUS						
Census	.356***	.009	.158***	-.112***	.520***	-.105
PARENTAL SOCIOCULTURAL RESOURCES						
Parental education			.449***	.308***	.491***	.330***
PARENTAL ECONOMIC RESOURCES						
Home ownership			.176***	.146*	.170***	-.089***
Economic advantage			.376***	.244***	.399***	.242***
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2						
Parental education * Census 2					-.067***	-.033***
PARENTAL ECONOMIC RESOURCES * CENSUS 2						
Home ownership * Census 2					-.011	.093
Household assets * Census 2					-.046***	.001**
CONTROL VARIABLES						
Gender			-.649***	-.420***	-.649***	-.420***
Age			.305***	.264***	.305***	.264***
N of families in the household			-.185***	-.198***	-.181***	-.196***
Family size			-.182***	-.121***	-.181***	-.121***
N of own children			-.907***	-.731***	-.908***	-.731***
N	1,159,684	563,803	1,142,310	556,906	1,142,310	556,906

** p<0.05; ** p<0.01; ***p<0.001*

Note: All country fixed effects are included.

Source: Author's elaboration based on IPUMS International (weighted calculations).

In summary, previous models confirm that social origins do matter in higher education, both before and after the expansion. However, after the expansion, some components matter more than others: the negative coefficients obtained for parental education suggest that sociocultural resources might have decreased their influence. Parallelly, the positive coefficient associated with household assets (using the conditional approach) proposes that economic resources might have slightly increased their role. But is this the case for all social groups or only for those from a less privileged background?

To understand the dynamics behind the potential changes in the effect of social origins, research on educational inequality offers some explanations. For the Latin American experience, in the first place, the evidence is consistent in demonstrating that the effect of the expansion is not homogeneous across social groups. On the one hand, research has demonstrated increasing rates of upward mobility at the lower end of the educational ladder and the persistent immobility at the upper end (Neidhöfer, 2016; Neidhöfer et al., 2017). On the other hand, research has also shown that even in contexts of increasing social fluidity, inequality by social origins in educational attainment remains persistently high: either because the most privileged sectors "benefit more" from the expansion than their less advantaged counterparts or because socioeconomic barriers move to upper educational levels (Torche, 2005b, 2005a, 2010).

Despite these findings being consistent across different Latin American countries, none of these studies addressed the case of the recent expansion of higher education specifically or proposed a regional picture. In this context, has the recent expansion benefited those at the bottom of the educational ladder, so they are catching up with the middle? Have the ones at the top maintained their privileges? To respond to these questions, I decided to estimate the probability of higher education attendance for three overarching social groups. To define these groups – defined in broad terms as the ones at the bottom, the middle, and the top – some changes were necessary. First, I decided to work only with those explanatory variables with statistically significant variations between censuses: that is, parental education and household assets. Second, to define three overarching groups, I constructed three-fold categorical variables using the original versions of the selected explanatory variables. These three categories were defined to facilitate the comparison between groups (the bottom, the

middle, and the top) as an exploratory exercise. Details on these processes and the descriptive statistics for the new variables are given in Tables 2 and 3. Finally, logit models with marginal effects were conducted to estimate the probability of higher education attendance for each of the groups. To facilitate their interpretation, the category in the middle was chosen as reference in each model.

Table 2. Construction of the new three-fold variable for parental education.

PARENTAL EDUCATION (ORIGINAL)	NEW VERSION	N (VALID)	MIN	MAX	MEAN	SD
1: One or both parents attained less than primary education	1 Parents with a low level of education	1,152,581	1	3	1.336	.617
2: One or both parents attained primary education						
3: One parent attained primary education and the other secondary education	2 Parents with a medium level of education					
4: One or both parents attained secondary education						
5: One parent attained secondary education and the other tertiary education	3 Parents with a high level of education					
6: One parent with tertiary education or two parents with tertiary education						

Source: Author's elaboration based on IPUMS International.

Table 3. Construction of the new three-fold variable for household assets.

NEW VERSION	N (VALID)	MIN	MAX	MEAN	SD
1 Low-asset household	1,152,581	1	3	1.829	.682
2 Middle-asset household					
3 High-asset household					

Source: Author's elaboration based on IPUMS International.

I shall start by presenting the estimations obtained for the case of parental education. Model 3A is summarised in Table 4, which contains the coefficients obtained for the new version of parental education, including its interaction effects with Census 2. Regardless of the approach, the only statistically significant changes are observed between the bottom and the middle of the distribution: in both cases, the gap between these groups has reduced. However, it is important to highlight that the size of the coefficient is close to zero and statistically significant at a less restrictive level for the conditional approach. This allows the suggestion

that this catching up effect is smaller for the transition between upper secondary and tertiary education than for the overall higher education attendance. In addition, it is noteworthy that no statistically significant estimations are obtained between the middle and top: this suggests that the expansion does not seem to have influenced the gap between these groups, with the ones at the top maintaining their position.

Table 4. Logit models (coefficients and p values) for higher education attendance, including the *new three-fold variable of parental education and its interaction with Census 2* (Model 3) for urban coresidents (aged between 17 or 18 and 24) (unconditional and conditional approaches).

INTERACTION EFFECTS	**MODEL 3A**	
	Unconditional Approach	Conditional Approach
CENSUS		
Census	.008	-.153***
PARENTAL SOCIOCULTURAL RESOURCES (ref: medium level of education)		
Parents with a low level of education	-1.099***	-.631***
Parents with a high level of education	.729****	.629***
PARENTAL ECONOMIC RESOURCES		
Home ownership	.191***	.155***
Economic assets	.397***	.264***
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2		
Parents with a low level of education	.230***	.077**
Parents with a medium level of education (ref)		
Parents with a high level of education	-.001	-.033
N	1,142,310	556,906

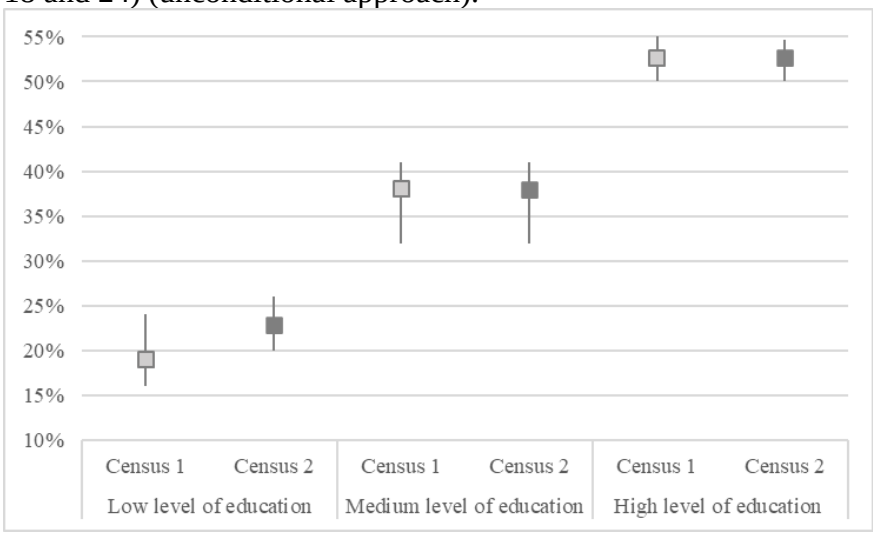
** p<0.05; ** p<0.01; ***p<0.001*

Note: Models are estimated including all control variables and country fixed effects.

Source: Author's elaboration based on IPUMS International (weighted calculations).

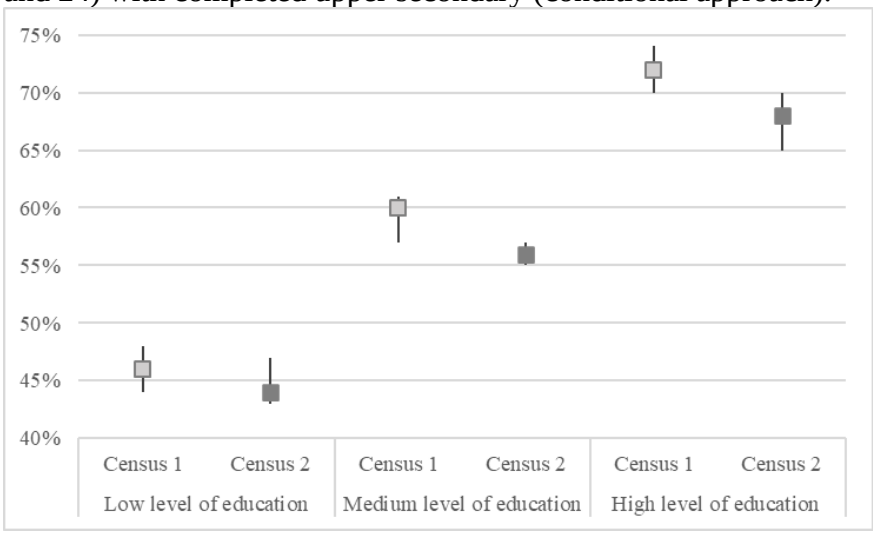
To facilitate the understanding of these results, the probability of higher education attendance is presented in Figures 7 and 8 for the unconditional and the conditional approach, respectively. The catching up effect between the bottom and the middle is more evident for the unconditional approach, as the middle and the top maintained their position, whereas the bottom increased the average probability of attendance. Nevertheless, the conditional probability of tertiary education attendance has decreased for all social groups. The gap between the bottom and the middle, then, has narrowed, as the conditional probability of access for those with parents with a low level of education has declined to a lesser extent than their peers with parents who have a medium level of education middle-educated parents.

Figure 7. Predicted probabilities for to higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) (unconditional approach).



Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Figure 8. Predicted probabilities for higher education attendance based on *the new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary (conditional approach).



Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Table 5 below shows the coefficients obtained for the case of household assets. The interaction effects presented in Model 3B suggest that no significant variations between groups are observed in the conditional approach: that is, their differences have remained stagnant. The only statistically significant coefficient is observed in the unconditional approach, where the gap in the probability of attendance between the middle and the top has

narrowed. This finding seems to be another novelty of this thesis, as previous research proposes the immobility of those with parents who have a high level of education (that is, 12 years of schooling or more).

Table 5. Logit models (coefficients and p values) for higher education attendance, including the *new three-fold variable for household assets and its interaction with census 2* (Model 3B) for urban coresidents (aged between 17 or 18 and 24) (unconditional and conditional approaches).

INTERACTION EFFECTS	**MODEL 3B**	
	Unconditional Approach	Conditional Approach
CENSUS		
Census	.214***	-.066**
PARENTAL SOCIOCULTURAL RESOURCES		
Parental education	.457***	.313***
PARENTAL ECONOMIC RESOURCES (ref: Middle-asset household)		
Home ownership	-.111***	-.045**
Low-asset household	-.271***	-.109***
High-asset household	.693***	.450***
PARENTAL ECONOMIC RESOURCES * CENSUS 2		
Low-asset household	.037	-.041
Middle-asset household (ref)		
High-asset parents	-.061***	-.066
N	1,142,310	556,906

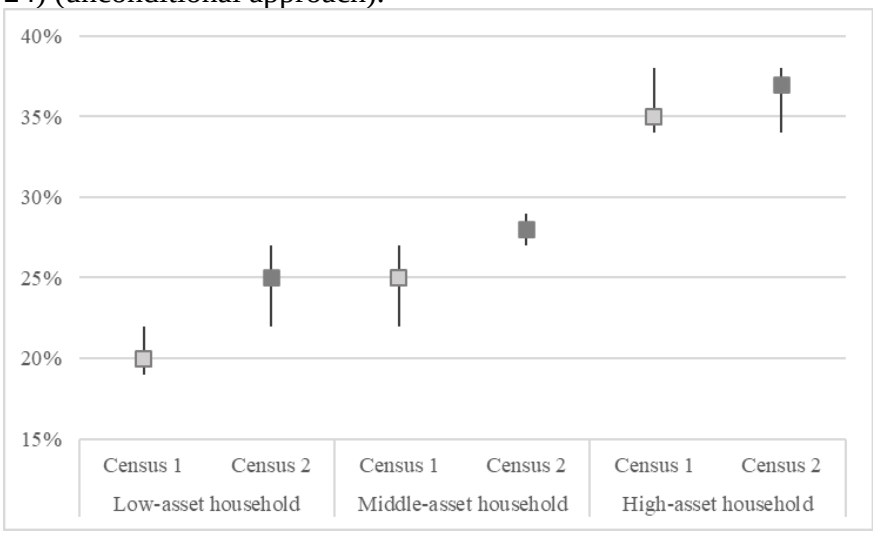
** p<0.05; ** p<0.01; ***p<0.001*

Note: Models are estimated including all control variables and country fixed effects.

Source: Author's elaboration based on IPUMS International (weighted calculations).

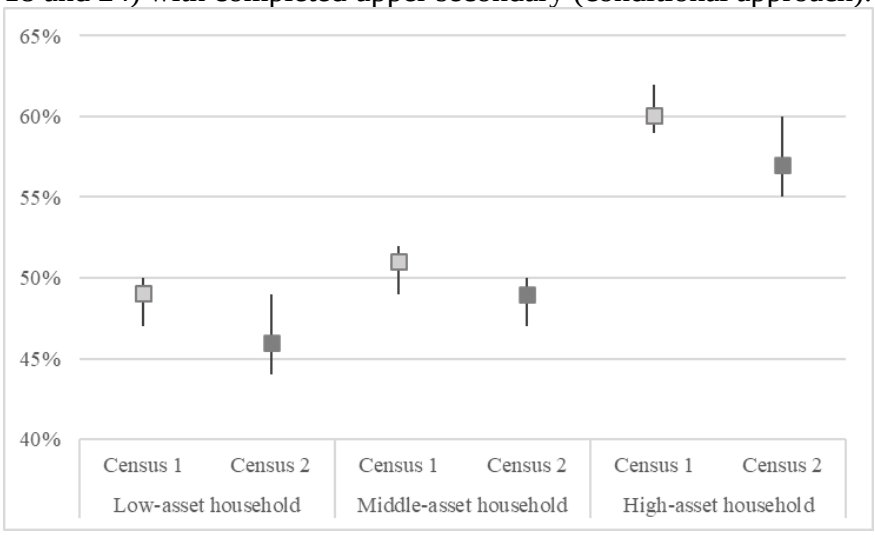
Again, the probabilities of attending higher education are illustrated in Figures 9 and 10 for the unconditional and the conditional approach, respectively. Regarding the differences between groups in the overall higher education attendance, Figure 9 shows that despite the overall increase in the probabilities of attendance, those with parents who have a medium level of education are the ones who experience the most marked growth. Therefore, there is a subtle catching up between the middle and top. One could argue, for instance, that this rise might be related to the introduction of student support policies; but this discussion is addressed in later chapters of this thesis. Finally, not much can be said about Figure 10 other than that it shows that the expansion has not reduced the differences in the probability of attendance between groups.

Figure 9. Predicted probabilities of higher education attendance based on *the new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) (unconditional approach).



Note: Calculations based on Model 3 (presented in Table 5) for 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Figure 10. Predicted probabilities of higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary (conditional approach).



Note: Calculations based on Model 3 (presented in Table 5) for 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

2.4. CONCLUSIONS

In this chapter, the question of whether the recent expansion has reduced inequality by social origins in higher education attendance in Latin America was addressed. To do so, census data – retrieved from IPUMS International and harmonised for the purposes of this

chapter – was used, applying and testing the coresidence approach in 12 countries: Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, and Uruguay. Expanding the common definition of social origins (usually reduced to parental education using the dominance approach) was also proposed, in order to evaluate the effect of parental sociocultural and economic resources on the likelihood of attendance. Then, some descriptive analyses were presented to identify the main trends in upper secondary completion and higher education attendance both by country and at the regional level. Later, multivariate analyses were conducted to estimate the effects of social origins and whether the expansion has modified the probability of different social groups attending to tertiary education.

From the descriptive analyses it can be concluded that the recent expansion has combined two trends in Latin America: a growth in the upper secondary completion rates that has not been accompanied by a parallel increment in the transition rates to tertiary education. It can be argued, then, that the expansion has benefited from the natural effect – or the so-called demographic bonus – of more and more people completing secondary education and becoming eligible to attend higher education. Nevertheless, the stability of the transition rates leaves a question open about the effect of social origins. On this, past research is consistent in demonstrating that social origins do matter in educational attainment, and that their effect at upper levels has remained stable throughout the 1980s and 1990s, but to what extent might the recent expansion have changed this?

From the multivariate analyses, it can be concluded that social origins do matter in attendance to higher education, both before and after the bulk of the expansion process. Moreover, it can also be stated that both parental sociocultural and economic resources do matter, as all coefficients show a positive and statistically significant effect. However, when evaluating the effect of the expansion on their role, differences between them were found: On the one hand, the effect of parental education declined in the general higher education attendance (unconditional approach) and in the transition from upper secondary to tertiary education (conditional approach). On the other hand, the effect of household assets has slightly increased in the transition but not in the general higher education attendance; for which declined.

Following the analyses, when addressing the potential change that the expansion might have produced in the probability of attendance related to different social groups, two trends were identified. On the one side, when identifying social groups based on parental education, the gap between those with parent who have a low level of education and their peers with parents who have a medium level of education narrowed. This finding suggests that the expansion has had an inclusive effect for those at the bottom of the educational ladder; supporting what previous research has demonstrated (Neidhöfer, 2016; Neidhöfer et al., 2017; Torche, 2010). Nevertheless, it is necessary to mention that the lack of statistically significant results for the gap between those who have parents with a medium level of education and their peers with parents who have attained higher education also supports the hypotheses of the immobility at the top and the social closure of the elite (Mac-Clure, Barozet, Moya, & Valenzuela, 2019; Orellana, 2021, among others). On the other side, when identifying social groups based on economic resources, the slight but significant widening of the gap between the most affluent sector and their counterpart in the middle in the transition to higher education, provides evidence to support the hypothesis of inequality driven by the top.

From all the above, the evidence allows for the confirmation of the three theoretical expectations outlined for this chapter. Now, returning to the question that serves as title – Does *"the more"* mean *"the merrier"* in higher education? – it is necessary to rephrase it. *"The more"* has meant *"the merrier"* for those at the bottom of the educational distribution; whose higher education attendance has contributed to the sociocultural diversity of the education system. However, this obliges us to analyse the potential limitations of an inclusive effect based only on sociocultural resources and that has been accompanied by the strengthening of the economic barriers in the transition from upper secondary to tertiary education. In this way, it is important to highlight that the recent expansion has not challenged the probability of attendance (and other privileges) of those from more advantaged backgrounds.

The evidence presented in this chapter allows us to propose some lines for further research. For example, it might be of use to test whether there is a replacement of quantitative inequality by qualitative inequality in higher education, as it has occurred in industrialised economies. In addition, it can also be used to test whether the most privileged groups have

benefited “more” from the creation of new opportunities in higher education in contexts of macroeconomic stability such as the one in which the expansion took place, as it has been demonstrated that less advantaged groups have lost “more” when expansion takes place in times of economic downturn. Another possibility would be to explore the heterogeneity in the expansion processes conducted across Latin America. For example, although the influence of the neoliberal agenda in education is a common feature between countries, not much has been said about the effect of privatisation on inequality by social origins in higher education. This is, precisely, the central query that is addressed in the following chapter.

CHAPTER 3:

DOES PRIVATISATION MATTER?

3.1. INTRODUCTION

The previous chapter showed that the recent expansion has not reduced inequality by social origins in higher education attendance in Latin America. While the effect of parental sociocultural resources has decreased – benefitting those at the bottom of the educational ladder – the role of economic resources has slightly strengthened – benefitting those at the top. These findings, however, must be interpreted with caution: Neither Latin America nor the processes of educational expansion are homogeneous, as political, socioeconomic, and institutional settings differ. In the case of the recent expansion of higher education, it is important to highlight that different countries have implemented different policies with some variability in their timing: for example, while some have opted almost entirely for the creation of private institutions; other countries have prioritized their public institutions.

I suggest considering the degree of privatisation in higher education as a key feature to elaborate a classification of expansion models for Latin America. The justification of this decision is two-fold. Firstly, it is based on the characteristics of the recent expansion itself: Latin America is the region of the world – both across developed and developing economies – where higher education has expanded at its fastest (Ferreyra et al., 2017). Secondly, and despite increasing privatisation being a central feature of expansion across developing countries, it is in Latin America that private actors have the greatest share in tertiary education provision in the world (Levy, 2011). Interestingly, these actors do not correspond to the traditional Catholic universities, but rather to for-profit institutions (either universities or vocational postsecondary institutions) which focus on a type of student who did not have

access to tertiary education in the past due to socioeconomic reasons or to the scarcity in its supply (Rama, 2012).

From the above, the objective behind this chapter is to explore whether there are any differences in the effect of the recent expansion on inequality by social origins considering the different policy models implemented in Latin America. Specifically, I aim to respond to the following research questions: *Does the effect of the recent expansion on inequality by social origins in higher education attendance differ throughout Latin America? If so, is it possible to relate this variation to the different models of expansion implemented in the region?*

In the previous chapter, it was explained why conducting research on inequality in Latin America is a contribution from a methodological and theoretical point of view, both to policymaking and to the literature on social stratification. Therefore, its methodology is taken as a base for this chapter, which, in turn, makes its own theoretical and practical contributions.

From a theoretical perspective, the increasing expansion and privatisation in tertiary education highlight the ongoing debate on how institutional settings affect inequality by social origins. In social stratification research, however, the Latin American case has received little attention (Gregorutti & Delgado, 2015), while, in the policy arena, the impact of privatisation has mainly been of interest at the secondary level (Torche, 2010; Bassi et al., 2015; among others). Thus, acknowledging this gap in the literature and providing useful evidence for policymaking are sought in this chapter.

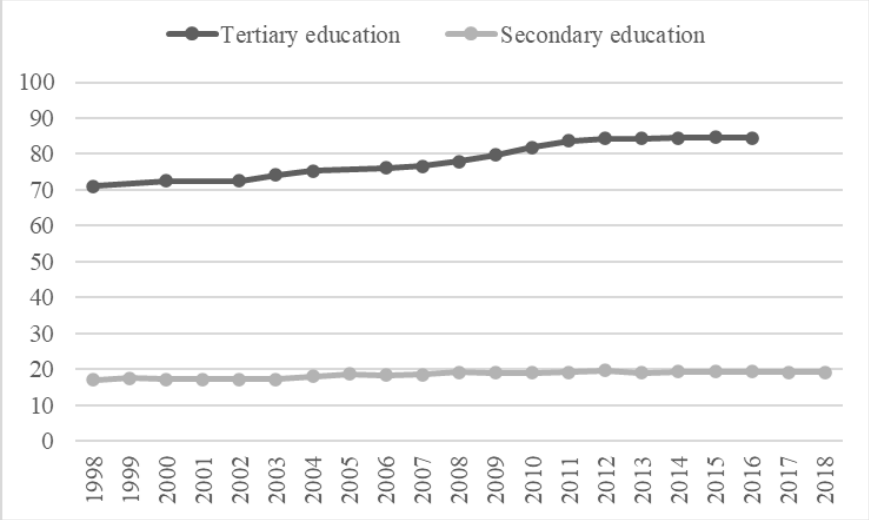
After this introduction, the chapter proceeds as follows: the upcoming section details the classification of models of expansion in Latin America. Then, the third part presents the general expectations. Following this, the fourth section presents the main descriptive and multivariate analyses by model of expansion. Finally, the last part contains the general conclusions and final remarks.

3.2. TOWARDS A CLASSIFICATION OF THE MODELS OF EXPANSION

As it has been mentioned throughout this thesis, two of the main characteristics of the recent expansion in Latin America are its fast pace and the increasing participation of private

actors in higher education. To contextualise these features, Figure 1 shows the evolution of enrolment in private institutions in secondary and tertiary education in Latin America and the Caribbean between 1998 and 2018. It can be observed that enrolment in private institutions in tertiary education has been on a consistent rise in the last twenty years, whereas enrolment in private secondary institutions has remained stagnant.

Figure 1. Evolution of enrolment in private institutions in secondary and tertiary education in Latin America and the Caribbean between 1998 and 2018.



Source: Author's elaboration based on UNESCO (2019).

It is relevant to mention that private actors have a rich and long history in Latin American higher education, dating back to the foundation of Catholic universities during the Spanish and Portuguese colonisation in the sixteenth century, passing through the creation of universities by regional elites in the nineteenth and twentieth centuries[14], and the installation of for-profit institutions in the last thirty years. Regarding the latter, it is necessary to emphasise that in many Latin American countries (such as Brazil and Chile) for-profit higher education institutions represent the bulk of the expansion and their creation is linked to the installation of the neoliberal agenda in education.

From a more general perspective, the reader must be reminded that the neoliberal agenda has not only affected higher education, but also policymaking, as it has meant a change of

[14] Also, it is noteworthy that public universities were founded in the nineteenth century – after Independence – once Latin American states were created; so, many times, private actors have been involved in higher education provision in territories where state capacity was rather weak.

paradigm: the participation of the states in the provision of social welfare has been reduced and displaced by the incorporation of the market and its mechanisms (i.e. competition over resources, fees, loans, etc) as allocators of social welfare, such as health, education, and social protection. However, these transformations have spread throughout Latin America at a different pace and depth, depending on the country (Morley et al., 1999). There is the case of Chile, the frontrunner of the neoliberal turn in the world with a rapid and deep transformation conducted in the very early 1980s (Solimano, 2012); and the case of Argentina, where reforms were introduced in the 1990s without abandoning its public institutions which are still open-access and tuition-free.

Variation aside, Levy (2011) argues that the relevance of the private higher education[15] is not just one of the peculiarities of Latin America, but also a key feature across the developing world[16]. Moreover, the presence of private actors in the region is characterised by the prominence of profit-oriented higher education institutions; created to absorb those students previously excluded – either due to their social background or the lack of supply – at the lowest possible cost (Marginson, 2013; Olivier, 2012). Depending on the case under scrutiny, these institutions are called "entrepreneurial", "corporativist", or "for-profit" universities (Bernasconi, 2005; McCowan, 2004; Pineda & Celis, 2017; Rama, 2012). Across Latin America, in the early 2000s, the number of for-profit higher education institutions showed an increase of 133 percent (McCowan, 2004).

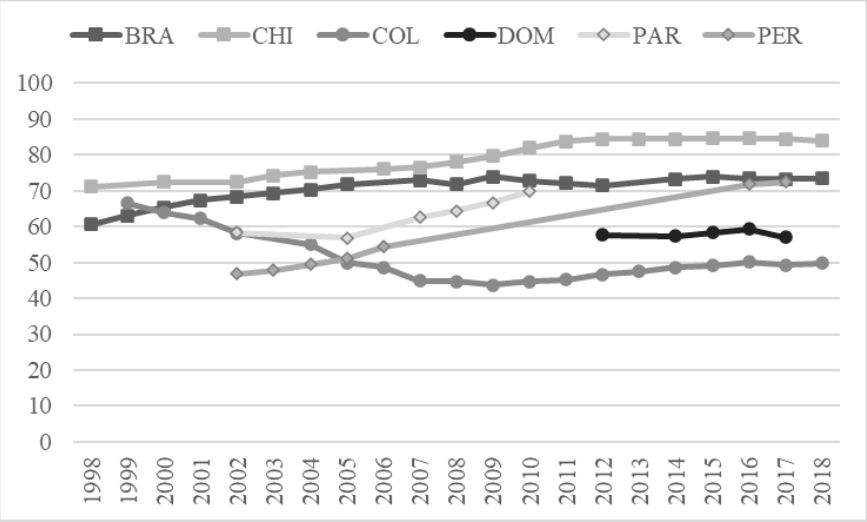
The following figures illustrate the variation in the degree of privatisation and show the evolution of enrolment in private higher education between 1998 and 2018 for the countries included in the sample. States were ordered in accordance with the degree of privatisation, ranging from the highest to the lowest proportion. Therefore, Figure 2 presents countries with a consistently high degree of privatisation (and a progressive decline of enrolment in the public sector). These include the bulk of the countries included in the sample: Brazil, Chile,

[15] It is relevant to add that other scholars have already highlighted the role of private actors or market regulations in higher education. For example, Clark (1983) claims that there are three types of models of governance in higher education: a state-centred system, a market system, or a system guided by academic oligarchies. For the case of Latin America, in most countries market systems prevail, as institutions are forced to compete for resources.

[16] Industrialised countries' enrolment in private higher education is less than 20 percent and the world mean is less than 30 percent. Enrolment in private higher education represents 36.4 percent in East Asia and the Pacific and circa 15 percent in Sub-Saharan Africa (Garnier & Schafer, 2006; Levy, 2011).

Colombia, Dominican Republic, Paraguay, and Peru. Figure 3 presents the cases with a moderate degree of privatisation, suggesting a more-or-less egalitarian distribution between the public and the private sectors. Three countries are included: Costa Rica, Ecuador, and Mexico. Finally, Figure 4 illustrates countries with a persistently low degree of privatisation, suggesting the protection of public institutions despite the expansion. Three cases were identified in this group: Panama, Uruguay, and Bolivia. Regarding the latter, however, it is important to mention that UNESCO does not have public statistics on the evolution of the private sector, therefore, it was necessary to complement the figure with the information on public enrolment provided by the Socio-economic Database for Latin America and the Caribbean (SEDLAC)[17].

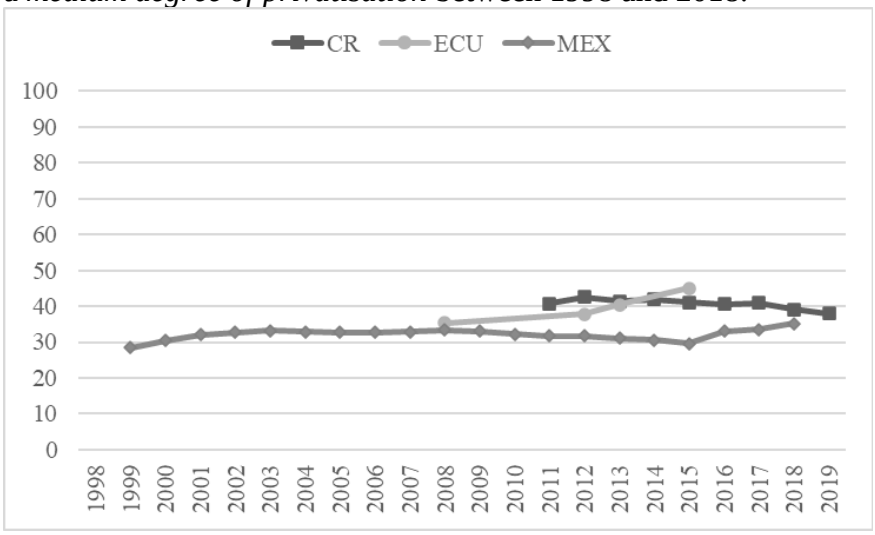
Figure 2. Evolution of enrolment in private tertiary education institutions for countries with a *high degree of privatisation* between 1998 and 2018.



Source: Author's elaboration based on UNESCO (2020).

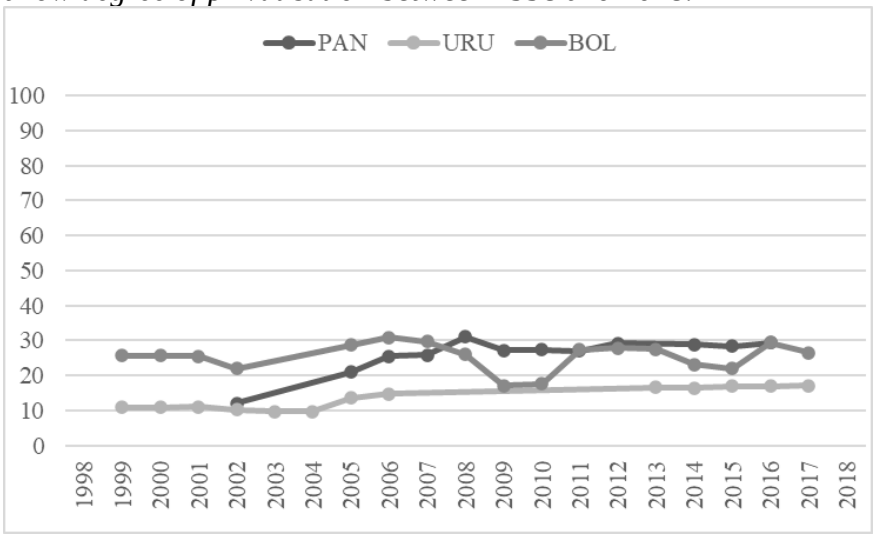
[17] This is a joint project managed by the World Bank and the Centre of Distributive, Labour and Social Studies of University of La Plata (Argentina). All statistics are computed from microdata from major household surveys.

Figure 3. Evolution of enrolment in private tertiary education institutions for countries with a *medium degree of privatisation* between 1998 and 2018.



Source: Author's elaboration based on UNESCO (2020).

Figure 4. Evolution of enrolment in private tertiary education institutions for countries with a *low degree of privatisation* between 1998 and 2018.



Source: Author's elaboration based on UNESCO (2020) and SEDLAS (2020) for the case of Bolivia.

Previous figures are taken as base to propose a typology of the models of expansion in Latin America. To make this preliminary classification a more accurate one, it is complemented with information provided by the World Bank in its report on international higher education(De Wit, Jaramillo, Gacel-Ávila, & Knight, 2005), which includes general estimates of the level of privatisation in each of the countries selected in the sample in the 1980s (before the recent expansion) and early 2000s (during the bulk of the recent expansion).

The first model groups countries where private higher education constitutes more than 50 percent of total enrolment in higher education. Moreover, all countries have experienced increasing privatisation between the 1980s and the 2000s. Under the label of *high degree of privatisation*, I categorise Brazil, Chile Colombia, Dominican Republic, Paraguay, and Peru.

The second model focusses on those countries where between 30 and 50 percent of enrolment is in the private higher education sector. Under the label of *medium degree of privatisation*, I classify the cases of Costa Rica, Ecuador, and Mexico. It is important to add that these countries show both a maintenance of their degree of privatisation, but also a gradual increase.

The third model comprises those cases where less than 30 percent of enrolment is in private higher education. Under the label of *low degree of privatisation*, the cases of Bolivia, Panama, and Uruguay can be found. Contrary to previous models, countries included in this category show consistently low levels of privatisation between the 1980s and early 2000s.

Table 1 summarises the classification of the models of expansion described above. The information is organised into three columns, where the ones in the middle and on the right present the degrees of privatisation in the early 1980s and early 2000s, respectively.

To finalise this section, it is necessary to remark that the threshold identified for each of the models were selected by the author. Furthermore, the classification has a generic character to facilitate comparability and, by no means, is it meant to be theoretically exhaustive. In this way, within each model of expansion, there is still variation in the type of policies implemented and the timing and pace in which the recent expansion occurred. For example, let us revisit the Chilean and the Brazilian experiences. Despite the fact that both countries show a high degree of privatisation, have incorporated student loans and selection processes, and have a considerable number of for-profit universities; they differ in several ways. Not only was the political context during the expansion completely different – with Chile under military and civil dictatorship in the early 1980s and Brazil under a democratic government in the 1990s – but also the manner in which these countries have protected (or not) the public sector. Whereas all Chilean public universities are selective and do charge tuition fees; their Brazilian counterparts are also highly selective but completely free of charge. In this sense,

privatisation in higher education is always a result of myriad historical, socioeconomic, and political factors (Marmolejo, 2016). Their analysis is specific and goes beyond the scope of this thesis[18].

Table 1. Categorisation of the selected Latin American countries according to the degree of private coverage in higher education in the early 1980s and early 2000s.

COUNTRY	CLASSIFICATION IN THE EARLY 1980s	CLASSIFICATION IN THE EARLY 2000s
HIGH DEGREE PRIVATISATION		
BRAZIL	Medium	High
CHILE	Medium	High
COLOMBIA	Medium	High
DOMINICAN REPUBLIC	Medium	High
PARAGUAY	Medium	High
PERU	Medium	High
MEDIUM DEGREE OF PRIVATISATION		
COSTA RICA	Medium	Medium
ECUADOR	Low	Medium
MEXICO	Medium	Medium
LOW DEGREE OF PRIVATISATION		
BOLIVIA	Low	Low
PANAMA	Low	Low
URUGUAY	Low	Low

Source: Author's elaboration based on the World Bank's categorization developed by De Wit et al. (2007) in "Higher Education in Latin America: The International Dimension" (Holm-Nielsen, L., Thorn, K., Brunner, J., & Balán, 2005). It must be noted that the original version included the following categories: 40-75 percent / 30-40 percent / 20-30 percent / 10-20 percent / Less than 10 percent.

3.3. EXPECTATIONS

Now that the classification of models of expansion for Latin America has been described, I shall proceed by presenting the theoretical expectations behind this chapter. The exploratory character of this research must be emphasised: to the best of my knowledge, there are no studies addressing the potential effect of either different models of expansion or the degree of privatisation on inequality by social origins in higher education. Thus, and due to the innovative character of the methodological design, expectations are based on past research mostly conducted across the industrialised world and/or refers to studies that address the effect of privatisation on other transitions or educational levels in Latin America (Torche, 2005a).

[18] For example, the work of Garritzman (2016) titled "The Political Economy of Higher Education Finance" provides a good example for the processes linked to the expansion of higher education across industrialised economies (OECD countries) between 1945 and 2015.

Moving on, the first expectation refers to the centrality of privatisation. In this way, the degree of privatisation does play a role in the effect on inequality by social origins in higher education attendance. Despite the fact that the case of privatisation in higher education has not been addressed in the Latin American context, past research on the role of privatisation related to school reforms is consistent in reporting that expansion has unequally benefited different socioeconomic groups and has not reduced the effect of social origins (understood as parental education) in educational attainment (Torche, 2005a). Moreover, privatisation is considered one of the main sources of qualitative inequality in the school sector in Chile, something that can be extrapolated to the next educational level and other Latin American countries as the neoliberal reform and economic cycles are experienced by the region as a whole (and other developing regions, of course).

The second expectation claims that the effect of privatisation is different depending on the component of social origins under evaluation. In this way, in contexts of high privatisation, I expect that the effect associated with economic resources to be stronger than the effect of parental sociocultural resources on higher education attendance. This dynamic is based on the findings reported in the past chapter: the effect of parental education showed a fall after the expansion, whereas the effect of household assets showed a slight strengthening over this period. I, then, expect this trend to be even more marked in contexts of high privatisation because most countries show great educational inequality at lower levels and have implemented market-mechanisms to finance expansion. Let us consider the following landscape: Unequal higher education systems can be defined as those where the poorest sectors are under-represented and high-income groups display attendance rates similar to those of developed economies (Marmolejo, 2016). If we consider that this definition applies to all Latin American higher education systems where privatisation has meant that student loans and tuition fees have become the core of their funding, and governments have not implemented comprehensive student support policies for the least advantaged students (Villalobos, Treviño, Wyman, & Scheele, 2017); how is it possible to expect a decline in the effect of economic resources?

Regardless of the degree of privatisation, the third expectation states that there is no reason to expect a reduction in inequality by social origins in higher education attendance. In this

sense, this expectation is in line with the findings reported in the last chapter, which showed that social origins do matter in attendance, both before and after the bulk of the recent expansion. It is necessary to add that previous research on education inequality has reported either the stagnation or the increase of inequality in the transition to higher education in, at least, five Latin American countries: Brazil (Salata, 2018), Chile, Colombia, and Mexico (Torche, 2010).

3.4. RESULTS

Now that the theoretical expectations have been specified, I shall proceed by presenting both the obtained descriptive and multivariate analyses. The reader must be reminded that the methodological design and approach detailed previously are applied in the chapter. Nonetheless, there is a slight change in the methodology: because country samples differ greatly, new weights were calculated in accordance with the average sample size for each of the models of expansion. Therefore, specific weights by model of expansion are used in the estimations presented below.

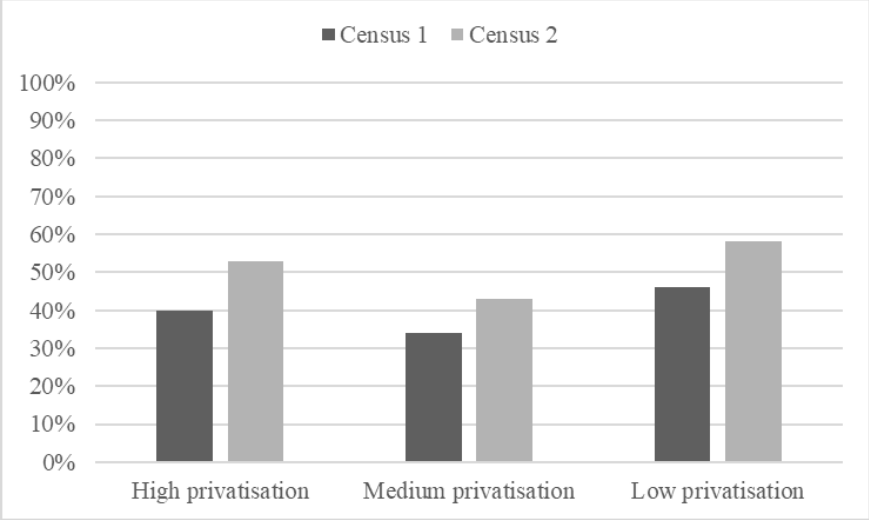
It is necessary to mention again that all the estimates applied do not consider the whole population, but only the sample of urban coresidents aged between 17 or 18 and 24, depending on the country (also called *respondents*).

3.4.1. Descriptive analyses

Following the structure of analysis used in the previous chapter, this section seeks to contextualise the recent expansion of higher education by presenting the evolution in the rates of upper secondary education and higher education attendance but, now, by model of expansion.

Figure 5, then, shows the proportion of respondents with completed upper secondary education by model of expansion over the intercensal period. Regardless of the model of the expansion, there has been an upgrade in upper secondary completion rates. However, countries with a low degree of privatisation are the ones with the highest completion rate in census 1 and census 2; in addition to showing the sharpest growth between censuses.

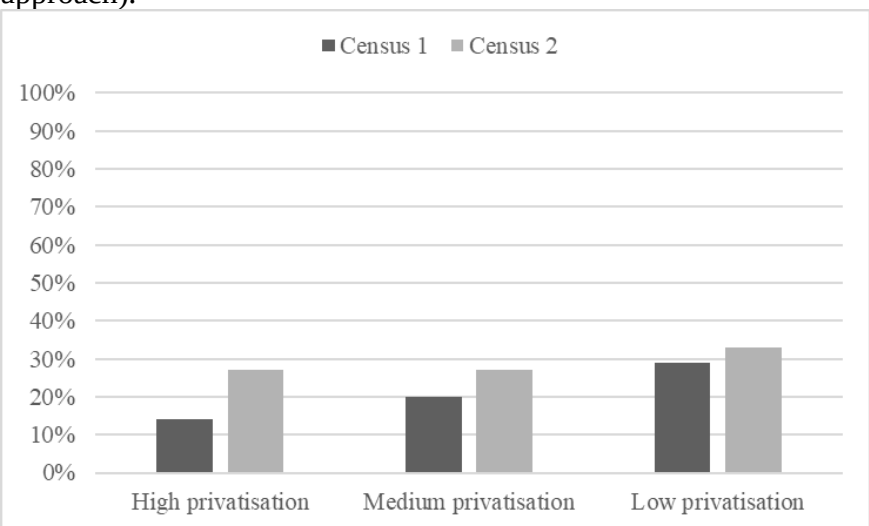
Figure 5. Proportion of urban coresidents (aged between 17 or 18 and 24) with *completed upper secondary education* by model of expansion in *Census 1 and 2.*



Source: Author's elaboration based on IPUMS International.

Figure 6 presents the proportion of respondents who have ever attended higher education by model of expansion. It can be observed that all country groups show an increase over time, which, in turn, maintained the same level of difference between them. In this way, the group with a high degree of privatisation is at the lower end in Census 1 and Census 2, despite showing the sharpest increase over time.

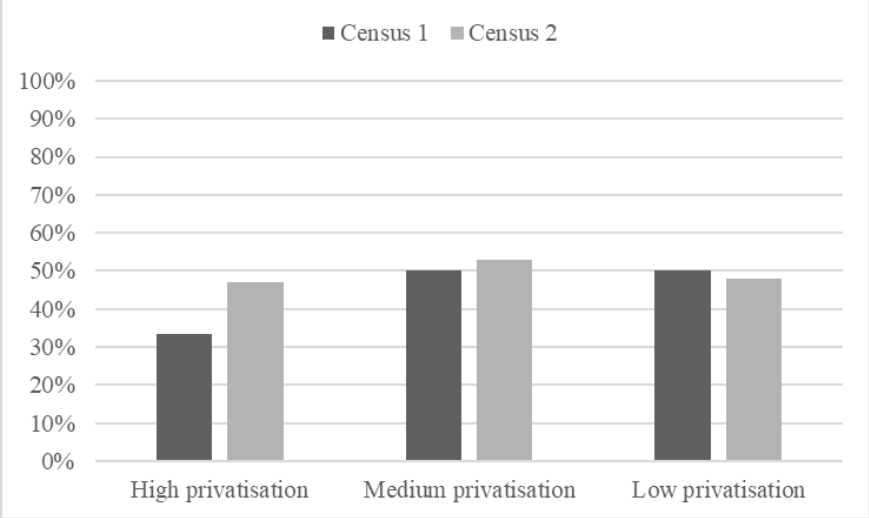
Figure 6. Proportion of urban coresidents (aged between 17 or 18 and 24) *who have ever attended higher education* by model of expansion in *Census 1 and 2* (unconditional approach).



Source: Author's elaboration based on IPUMS International.

Finally, Figure 7 exemplifies the proportion of eligible respondents who have ever attended higher education by model of expansion. The reader must be reminded that this figure illustrates what is designated as a conditional approach throughout the thesis: proportions are calculated considering the sub-sample of respondents with (at least) completed secondary only. It is noteworthy that the trends shown in Figures 5 and 6 are reversed: in this case, the group with high privatisation is the only one that exhibits a marked increase in conditional higher education attendance over the intercensal period. Moreover, it must be remarked that countries with moderate privatisation present a mild increase, which transforms this group into the one with the highest conditional proportion in tertiary education attendance. Finally, the group with low privatisation is the only one that exhibits a decline in the proportion of attendance over the intercensal period.

Figure 7. Proportion of urban coresidents (aged between 17 or 18 and 24) *with completed upper secondary and who have ever attended higher education* by model of expansion in *Census 1 and 2* (conditional approach).



Source: Author's elaboration based on IPUMS International.

In summary, the figures presented above offer preliminary evidence to confirm that privatisation appears to matter in higher education attendance. On one side, the group of countries with high privatisation is the only one with sharp increases in the proportion of upper secondary graduates and in the transition to higher education. This is in line with the demand-and-supply effect: the expansion is the result of more and more people eligible to make this transition, which would incentivize the growth of postsecondary education supply to meet this demand. The story, nevertheless, seems to be different for the other two groups

of countries. Middle and low privatisation countries face increasing rates of upper secondary completion that are not accompanied by a parallel or similar augmentation in the rates of higher education attendance, a situation that is more evident in the conditional approach. These disparities offer preliminary evidence to support the emergence of a bottleneck in the transition between secondary and tertiary education: despite a rising number of people completing secondary education, higher education does not expand at the pace or to the degree required to absorb the increasing demand[19]. Might the differences reported between the models of expansion be indicative of a reduction of inequality by social origins in contexts of high privatisation in tertiary education? Or vice versa, would this be the scenario for contexts with either low or moderate privatisation? These alternatives are explored through multivariate analyses in the subsequent section.

3.4.2. Multivariate analyses

Before presenting the estimations obtained, it is necessary to remind the reader how they are interpreted: the size and the sign of the coefficients provide information about how strong or weak the relationship is between the indicator under evaluation and the likelihood of attendance, and whether this relationship is positive or negative and statistically significant. It is also necessary to emphasise that coefficients obtained are not comparable between indicators because of the differences in their measurement (for example: home ownership is defined as a dummy variable and economic assets corresponds to an index expressed in z scores). Having said that, Table 2 presents the results obtained in Model 1, which includes the main effects of all explanatory and control variables by model of expansion, using the unconditional and the conditional approach.

Regarding the effect of expansion (through the coefficients obtained for the census variable), there are differences between models and approaches. It is only for the group with high privatisation where positive and statistically significant coefficients are observed for both approaches, indicating that the likelihood of attending and transitioning to higher education has increased. For the groups with middle and low degree of privatisation, the expansion has meant a negative and statistically significant effect on the transition to tertiary education. In

[19] Bottlenecks in higher education have been reported by the literature, for example, for the case of Russia during the late Soviet period (Gerber & Hout, 1995).

the case of the group with low privatisation, the negative effect also applies for the general higher education attendance. These results are in line with the trends described in the previous section. For example, the group with high privatisation was the only one showing both a rise in upper secondary completion and transition rates; now reflected in the positive coefficients obtained in the unconditional and the conditional approach. Likewise, descriptive analyses illustrated that the group with low privatisation was the only case where transition rates declined, which is also reflected in the negative coefficient obtained below for the conditional approach.

Regarding social origins, positive and statistically significant coefficients are shown for all country groups, regardless of the approach. Thus, it is possible to state that social origins do matter in higher education attendance, both before and after the expansion, and regardless of the degree of privatisation. These results are consistent with the findings reported in the previous chapter. However, it is also possible to highlight that the relationship between parental education and attendance seems to be stronger in contexts of high privatisation. In the case of economic resources, it is noteworthy that the relationship seems to be stronger in the unconditional approach than in the conditional one. In other words: the effect of economic resources – specifically household assets – seems to matter more in the general attendance than in the specific transition from secondary to tertiary education. One could argue, for example, that economic resources might be more determinant for attending and graduating from lower educational levels. Evidence for four Latin American countries (Brazil, Chile, Colombia, and Mexico) suggests that economic circumstances (defined in macroeconomic terms) do influence educational inequality, especially for low socioeconomic sectors (Torche, 2010).

Regarding control variables, it is necessary to mention that all of them behave as expected, following the trends described in the previous chapter. That is: men are less likely to attend and transition to higher education, as well as respondents from larger households and/or with own children under 5 years of age. In this sense, no differences are observed by model of expansion.

In order to better understand whether there are any differences between country groups in the effect of social origins, Table 3 presents the coefficients obtained in Model 2, which includes

interaction effects between each of the components of social origins and census 2. It is thanks to this method that estimations are comparable between them, regardless of the differences in their measurement.

Let us turn to parental education first. All coefficients that show a statistically significant change are negative, which indicates that the expansion has decreased the effect of sociocultural resources in higher education attendance. This is the trend that all groups follow for general attendance, as the unconditional approach shows. Nevertheless, there are differences by group when assessing the transition from upper secondary to tertiary education: only the model with low privatisation shows statistically significant coefficients. This is surprising because descriptive analyses illustrated no increase in the proportion of eligible respondents attending higher education over the intercensal period. A very preliminary interpretation of this points out that the characteristics of educational attainment in the three countries grouped: Bolivia, Panama, and Uruguay; show important gaps in educational attainment, with strong socioeconomic barriers at lower levels of education (i.e. access to lower and upper secondary) (UNESCO, 2020). In fact, descriptive analyses in Chapter 2 show that Panama and Uruguay are the countries with the lowest proportion of secondary completion in both censuses. Therefore, considering that those respondents eligible to transition to tertiary education already represent already a privileged group, one could argue that parental education might have become less relevant to maintaining their advantage.

Following with parental economic resources, differences by model of expansion can be observed. In the case of the group with high privatisation, both home ownership and economic assets display positive and statistically significant coefficients, which indicates that the expansion has increased their effect in both general attendance and transition to higher education. In countries with moderate privatisation, coefficients exhibit that only the effect of economic assets is statistically significant for both general attendance and transition to higher education; but in the opposite sense: that is, the expansion might have decreased the effect of economic resources. Finally, it is noteworthy that no statistically significant results are obtained for countries with low privatisation.

Table 2. Logit model (coefficients and p values) for higher education attendance (Model 1) for urban coresidents (aged between 17 or 18 and 24) by model of expansion (unconditional and conditional approaches).

MODEL 1 MAIN EFFECTS	DEGREE OF PRIVATISATION IN HIGHER EDUCATION					
	HIGH		MEDIUM		LOW	
	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach
CENSUS						
Census	.252***	.052***	.244***	-.053**	-.073**	-.507***
PARENTAL SOCIOCULTURAL RESOURCES						
Parental education	.514***	.366***	.472***	.319***	.330***	.207***
PARENTAL ECONOMIC RESOURCES						
Home ownership	.143***	.140***	.254***	.200***	.195***	.127**
Household assets	.359***	.236***	.424***	.249***	.355***	.251***
CONTROL VARIABLES						
Gender	-.689***	-.457***	-.651***	-.450***	-.648***	-.540***
Age	.310***	.248***	.298***	.305***	.157***	.503***
N of families	-.315***	-.246***	-.065***	-.158***	-.056***	-.185***
Family size	-.188***	-.129***	-.148***	-.097***	-.184***	-.089***
N of own children	-.906***	-.706***	-.920***	-.726***	-.840***	-.762***
N	837,255	412,767	269,397	123,541	35,658	20,598

** p<0.05; ** p<0.01; ***p<0.001*

Note: Models are estimated separately, including all country fixed effects.

Source: Author's elaboration based on IPUMS International (weighted calculations).

Table 3. Logit model (coefficients and p values) for higher education attendance, including the interaction effects between social origins and census (Model 2) for urban coresidents (aged between 17 or 18 and 24) by model of expansion (unconditional and conditional approaches).

MODEL 2 INTERACTION EFFECTS	DEGREE OF PRIVATISATION IN HIGHER EDUCATION					
	HIGH		MEDIUM		LOW	
	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach
CENSUS						
Census	.307***	.360***	1.081***	-.289*	-.442**	-.127
PARENTAL SOCIOCULTURAL RESOURCES						
Parental education	1.015***	.682***	.961***	.595***	.845***	.550***
PARENTAL ECONOMIC RESOURCES						
Home ownership	.123***	.075**	.307***	.279***	.228***	.010
Household assets	.392*	.218***	.538***	.312***	.367***	.283***
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2						
Parental education * Census 2	-.065***	.004	-.061*	.030	-.308***	-.218***
PARENTAL ECONOMIC RESOURCES * CENSUS 2						
Home ownership * Census 2	.060	.133***	-.050	-.105	-.051	.205
Household assets * Census 2	-.001	.073***	-.159***	-.068**	.003	-.044
N	837,255	412,767	269,397	123,541	35,658	20,598

** p<0.05; ** p<0.01; ***p<0.001*

Note: Models are estimated separately, including all control variables and country fixed effects.

Source: Author's elaboration based on IPUMS International (weighted calculations).

From these results it is evident that social origins do matter in higher education attendance, both before and after the expansion, but also regardless of the degree of privatisation. Additionally, it can be confirmed that the degree of privatisation does matter in the effect that the expansion has had on the different components of social origins. It is only in contexts of high privatisation that the effect of economic resources has strengthened after the expansion; suggesting that they have become more relevant both in general attendance and transition to higher education. These are findings not reported for the cases of middle and low privatisation: for the former, the effect is also statistically significant but negative; and, for the latter, no statistically relevant coefficients were obtained. It is also noteworthy that parental education displays negative and statistically significant coefficients in the unconditional approach for the three groups, suggesting that the effect of sociocultural resources has become less relevant in general tertiary education attendance, regardless of the degree of privatisation.

From the above, one could argue that there is evidence to state that the degree of privatisation does influence inequality by social origins in higher education attendance. Furthermore, there is also evidence to suggest that privatisation displays a different effect on the components of social origins. Although these results are a contribution to the field of research on educational inequality in Latin America, gaps in knowledge remain. One of these gaps is to assess how privatisation might affect different social groups. As this chapter follows the analytical design and methodology applied previously in the thesis, I shall proceed by estimating the probability of attending and transitioning to higher education for three overarching social groups.

Table 4 below presents Model 3A, which contains the coefficients estimated through logistic regressions, including interaction effects between the three groups defined by parental education and census 2. Before continuing with the interpretation of the coefficients, the reader must remember that the middle group is considered as reference.

Let us start with the interpretation of the coefficients reported for the group with high privatisation. The gap between the middle and the top has widened after the expansion, both in the attendance and transition to higher education. This suggests that the advantage of those respondents with parents with tertiary education has been reinforced by the expansion. It is

also noteworthy that the gap between the bottom and the middle has narrowed only regarding general higher education attendance. This is the result of a catching up effect in the probabilities of attendance for those respondents with parents with primary education or less.

Continuing with the group with a medium degree of privatisation, all the reported statistically significant coefficients display a positive effect. In this case, the widening gap between respondents with highly educated parents and their peers with parents with a medium level of education is observed, being a commonality with the group with a high degree of privatisation. However, in countries with moderate privatisation, this trend is accompanied by a reduction in the gap between the middle and those respondents with the least educated parents.

For the group with low privatisation, the most relevant change is the shrinking gaps between the middle and the bottom, but also between the middle and the top of the parental educational ladder for the general higher education attendance. The narrowing gap at the upper end is also observed in the transition probabilities, which is an exceptionality of this model of expansion when compared with the trends described for context of increasing privatisation.

Because the most interesting dynamics are described for the transition to tertiary education, the following figures illustrate the predicted probabilities calculated through the conditional approach for each of the social groups. Figure 8 presents the predicted probabilities for the group of countries with high privatisation; whilst Figures 9 and 10 do the same for the groups with middle and low privatisation, respectively.

Figures 8 and 9 confirm a widening gap between respondents with parents who have a medium level of education and their peers with highly educated parents for the groups with high and medium privatisation. However, the probabilities of transition increased in countries with high privatisation. It is in this context that the expansion has meant an increase in the predicted transition probabilities of the most advantaged sector, whilst the probabilities of the rest have remained stagnant. In a context of medium privatisation, however, this group is the only one that experienced a stagnation in its predicted transition probabilities, whereas the expansion has meant a decline in the probabilities of the rest. Figure 10, in turn, despite showing a reduction in the gap between the probabilities at both ends, indicates that all social groups face a fall in their predicted probabilities of transitioning after the expansion.

Table 4. Logit models (coefficients and p values) for higher education attendance, including the *new three-fold variable for parental education and its interaction effects with Census 2* (Model 3A) for urban coresidents (aged between 17 or 18 and 24) by model of expansion (unconditional and conditional approaches).

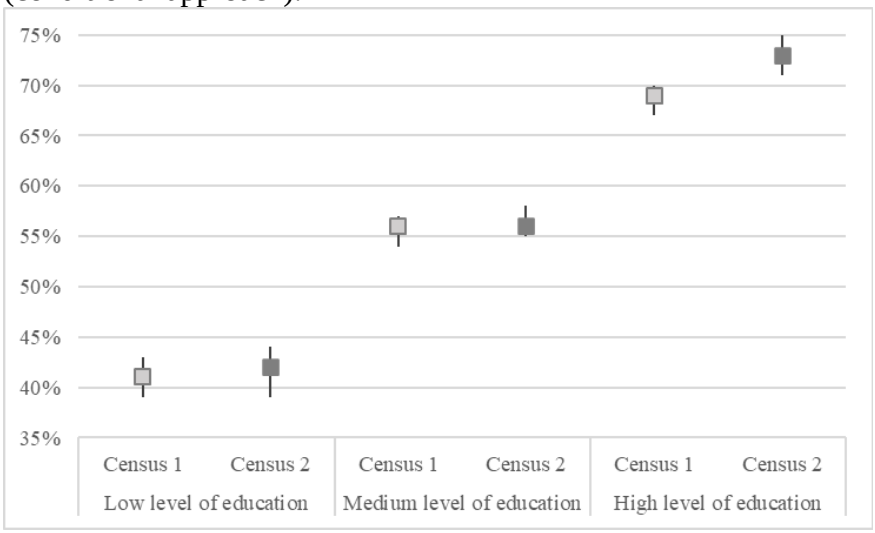
MODEL 3A INTERACTION EFFECTS	**DEGREE OF PRIVATISATION IN HIGHER EDICATION**					
	HIGH		**MEDIUM**		**LOW**	
	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach
CENSUS						
Census	.139***	.024	.020	-.146**	-.232***	-.550***
PARENTAL SOCIOCULTURAL RESOURCES (ref: medium level of education)						
Parents with a low level of education	-1.118***	-.670***	-1.232***	-.692***	-.932***	-.460***
Parents with a high level of education	.803***	.648***	.622***	.483***	.729***	.710***
PARENTAL ECONOMIC RESOURCES						
Home ownership	.160***	.156***	.276***	.212***	.200***	.130**
Household assets	.390***	.264***	.443***	.271***	.364***	.260***
PARENTAL SOCIOCULTURAL RESOURCES* CENSUS 2						
Parents with a low level of education	.158***	.028	.303***	.108*	.304***	.165
Parents with a middle level of education (ref)						
Parents with a high level of education	.127**	.154***	.180**	.179*	-.302**	-.335**
N	837,255	412,767	269,397	123,541	35,658	20,598

** p<0.05; ** p<0.01; ***p<0.001*

Note: Models are estimated separately, including all control variables and country fixed effects.

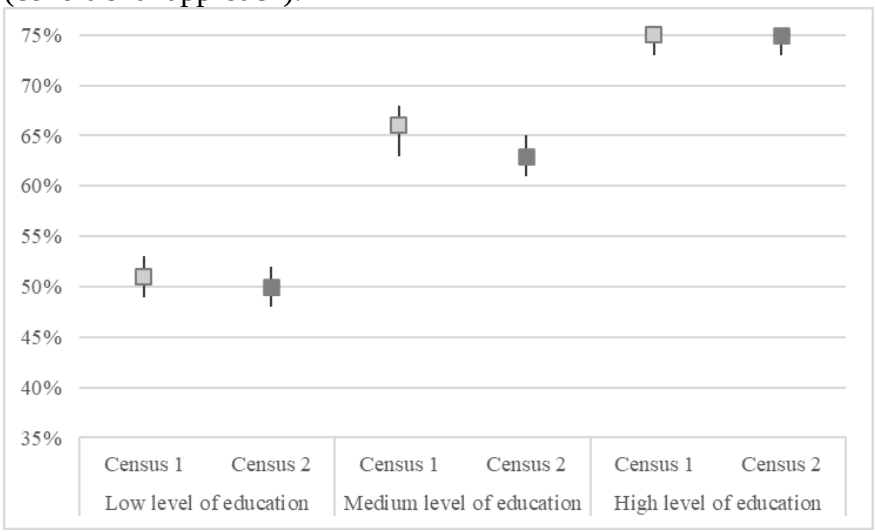
Source: Author's elaboration based on IPUMS International (weighted calculations).

Figure 8. Predicted probabilities for higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in countries with a *high degree of privatisation* (conditional approach).



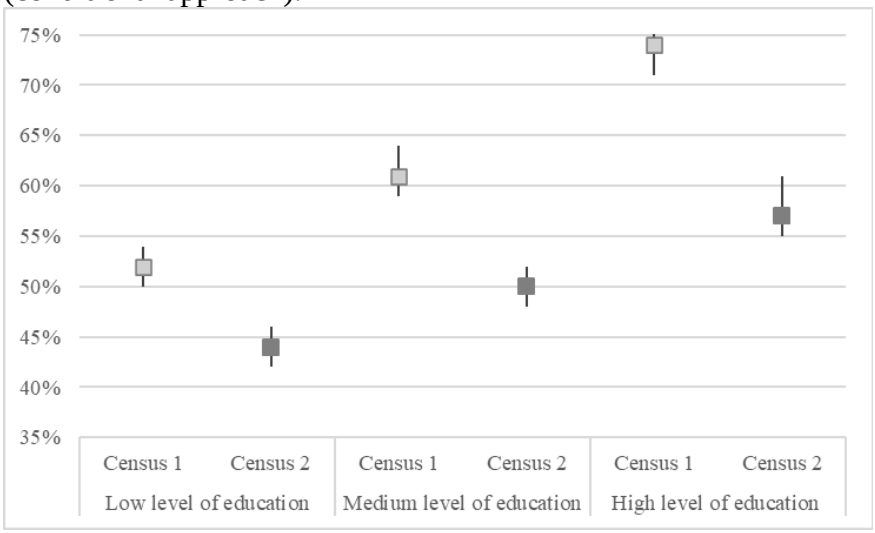
Note: Calculations based on Model 3A (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Figure 9. Predicted probabilities for higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) and completed upper secondary in countries with a *medium degree of privatisation* (conditional approach).



Note: Calculations based on Model 3A (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Figure 10. Predicted probabilities for higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in countries with a *low degree of privatisation* (conditional approach).



Note: Calculations based on Model 3A (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Table 5 now presents the coefficients presented in Model 3B, which considers the estimations obtained through logistic regressions including interaction effects between the three groups defined by household assets and census 2. Again, the reader must bear in mind that the group in the middle is considered as a reference for the interpretation of the model.

Unlike what was observed in the case of sociocultural resources, statistically significant coefficients were obtained for the case of high privatisation as the focus of interest is put on the conditional probabilities of transition only. It is worth noting that the gap between the bottom and the middle has widened after the expansion, as well as the gap between the middle and the top. Nevertheless, the widening effect at the lower end is more important because the coefficient is statistically significant at the most restrictive level. In the group with moderate privatisation, a slight decrease in the distance between the middle and top is observed, whereas no statistically relevant changes are reported for the group of countries with low privatisation.

Table 5. Logit models (coefficients and p values) for higher education attendance, including *the new three-fold variable for household assets and its interaction effects with Census 2* (Model 3B) for urban coresidents (aged between 17 or 18 and 24) by model of expansion (unconditional and conditional approaches).

MODEL 3B INTERACTION EFFECTS	**DEGREE OF PRIVATISATION IN HIGHER EDICATION**					
	HIGH		**MEDIUM**		**LOW**	
	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach	Unconditional Approach	Conditional Approach
CENSUS						
Census	.281***	.087***	.347***	.009	-.035	-.527***
PARENTAL SOCIOCULTURAL RESOURCES						
Parental education	.523***	.371***	.481***	.325***	.337***	.211***
PARENTAL ECONOMIC RESOURCES (ref: middle-asset household)						
Home ownership	-.117***	-.031	-.081**	-.007	-.080**	-.062
Low-asset household	-.240***	-.056**	-.343***	-.151***	-.264***	-.221**
High-asset household	.652***	.393***	.777***	.460***	.608***	.385***
PARENTAL ECONOMIC RESOURCES * CENSUS 2						
Low-asset household	-.032	-.138***	.121**	.028	.111	.139
Middle-asset household (ref)						
High-asset household	-.063	.063*	-.267***	-.132*	-.119	-.020
N	837,255	412,767	269,397	123,541	35,658	20,598

** p<0.05; ** p<0.01; ***p<0.001*

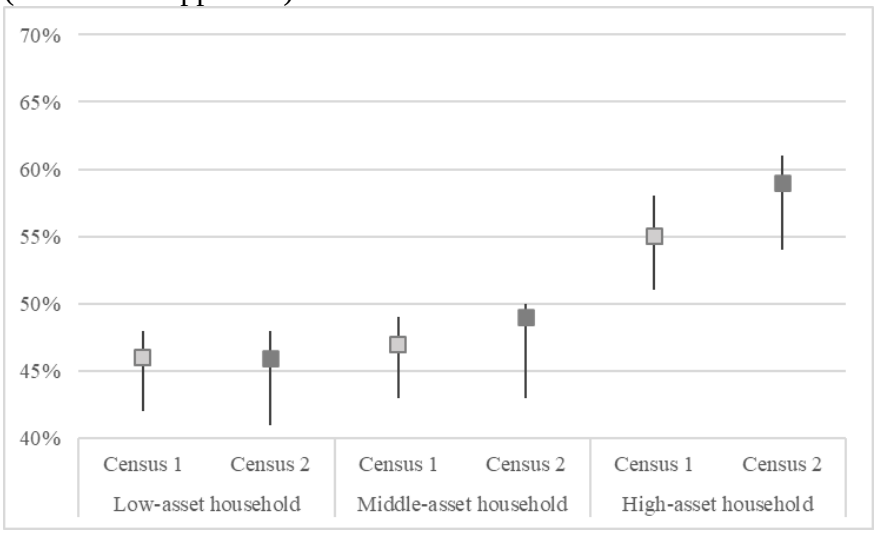
Note: Models are estimated separately, including all control variables and country fixed effects.

Source: Author's elaboration based on IPUMS International (weighted calculations).

As presented for the case of parental education, the following figures illustrate the predicted probabilities of transitioning to tertiary education for all social groups by model of expansion. Figure 11 exhibits the predicted probabilities obtained for the model with high privatisation, whilst Figures 12 and 13 show the same estimates for the models with medium and low privatisation, respectively. Based on the coefficients described in Table 7, the interpretation is centred on Figure 11 only, as Figures 12 and 13 mostly illustrate non-statistically significant results. Regarding them, however, it must be highlighted that the predicted probability of transition to higher education stagnated or declined after the expansion.

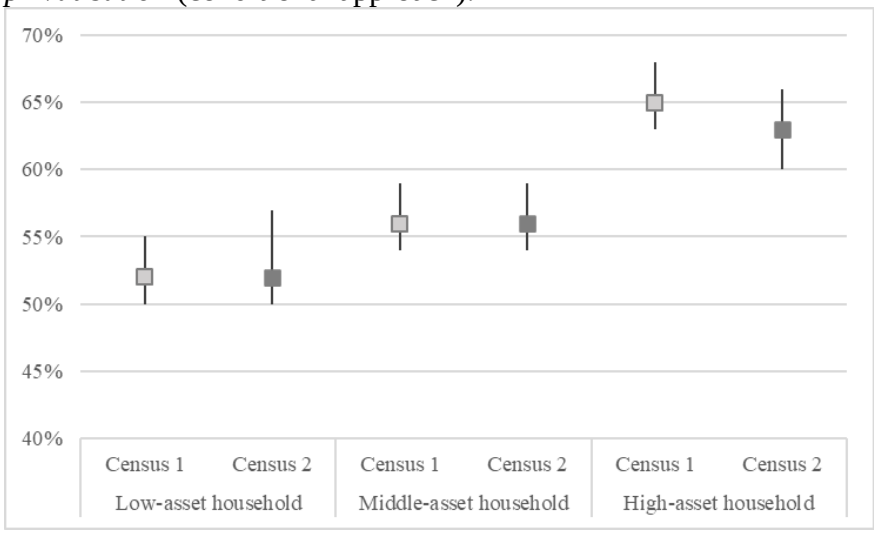
For the group with high privatisation, it is worth mentioning that the predicted probabilities of transitioning to tertiary education increased after the expansion only for those respondents living in affluent households. On the contrary, their peers from less economically advantaged households faced a stagnation in their probability of transition, which resulted in greater differentials between groups after the expansion.

Figure 11. Predicted probabilities for higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or18 and 24) with completed upper secondary in countries with a *high degree of privatisation* (conditional approach).



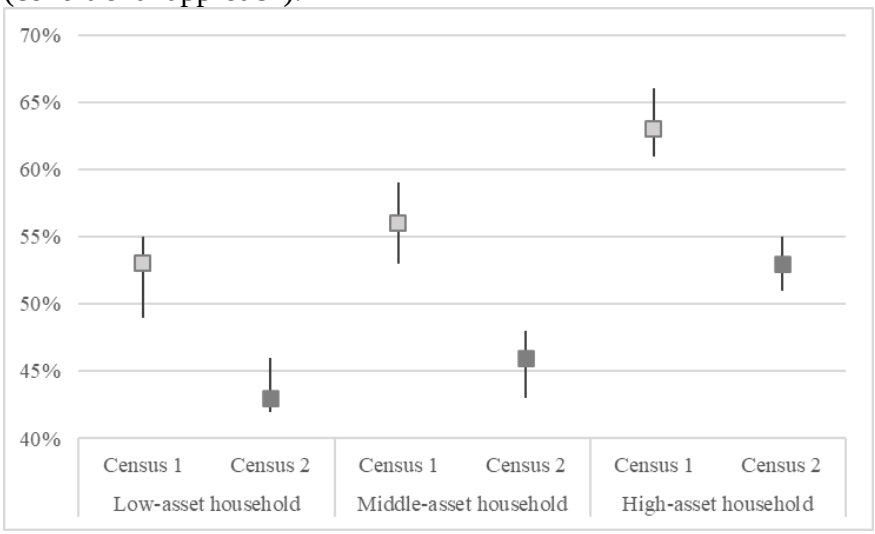
Note: Calculations based on Model 3B (presented in Table 5) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Figure 12. Predicted probabilities for higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in countries with a *medium degree of privatisation* (conditional approach).



Note: Calculations based on Model 3B (presented in Table 5) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

Figure 13. Predicted probabilities for higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in countries with a *low degree of privatisation* (conditional approach).



Note: Calculations based on Model 3B (presented in Table 5) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (weighted calculations).

To finalise this section, it is possible to argue that the evidence suggests that the degree of privatisation does play a role in inequality by social origins in higher education attendance. On the one hand, one could argue that privatisation has had a differential effect on the

components of social origins. Despite the relevance of a decline in the effect of parental education, for the purposes of this thesis it is central that privatisation seems to be associated with an increase of the effect of economic resources after the expansion. More specifically, it is high privatisation which seems to play a more determinant role in this matter, as the second theoretical expectation intuited. On the other hand, leading towards a better understanding of the role of high privatisation in inequality in higher education, one could argue that it has served to consolidate the advantages of the most privileged sectors after the expansion. Regardless of whether parental sociocultural or economic resources are under scrutiny, the expansion has meant the consolidation of the advantages of those at the top, widening the distance between them and other social groups.

3.5. CONCLUSIONS

In this chapter, two research questions were addressed: the first of them refers to whether there are any differences in the effect of the recent expansion on inequality by social origins in higher education attendance in Latin America; and the second question examines the query of which differences, if any, might be related to the models of expansion proposed for the region. To answer these questions, census data retrieved from IPUMS International for 12 Latin American countries was used and the coresidence approach was applied, following the methodology described extensively in Chapter 1. An innovative classification of the models of expansion was proposed based upon the degree of privatisation in higher education. This classification grouped countries into three categories; identifying states with high, medium, and low privatisation in higher education, respectively, and based upon secondary data retrieved from international organisations.

Before proceeding to explain the results, it is pertinent to argue that the chapter has accomplished its objectives. First, from a theoretical perspective, it has contributed towards the study of educational inequality, not only positioning Latin America in international comparative research, but also encouraging comparative research within the region. Second, the chapter has highlighted the role that institutional settings play in inequality, positioning the degree of privatisation as a central feature to understand inequality by social origins in higher education in Latin America, considering that the neoliberal agenda in policymaking has had a profound impact in the region.

Descriptive analyses by model of expansion showed differences between groups. It must be highlighted that despite all groups presenting an increase in proportion of respondents with upper secondary completion and general higher education attendance, not all of them exhibited a comparable increment in the proportion of eligible respondents transitioning to this level. In fact, it is only the group with high privatisation where the increment in these shares is comparable. In this way, one could argue that high privatisation seems to associate expansion with a demand-and-supply effect, whereas medium and low privatisation seem to illustrate a (potential) bottleneck in the process of expansion.

Multivariate analyses also showed differences by model of expansion. On the one hand, it can be concluded that social origins do matter in higher education attendance, both before and after the expansion, and regardless of the degree of privatisation and the approach used in the estimation. On the other hand, however, it can also be established that the degree of privatisation does affect the components of social origins differently. More specifically, parental economic resources have increased their effect on the transition to higher education after the recent expansion for countries with high and medium degrees of privatisation. On the contrary, no statistically significant differences were found in the group with low privatisation, which was the only one where the effect of parental education on the transition to tertiary education significantly declined.

From the above, it is worth wondering: How is it possible that social origins matter "more" after the expansion, but, at the same time, increase transition rates to higher education, as descriptive analyses showed, in contexts with high privatisation? To address this question, the predicted probabilities of transitioning to higher education were estimated for the sub-sample of eligible respondents for all country groups. To do so, social groups were defined by each of the components of social origins with statistically significant variations after the expansion. Thus, following the methodology presented in Chapter 2, new three-fold categorical variables were constructed for parental education and household assets in order to determine low, middle, and high-advantaged social groups.

Multivariate analyses showed that expansion increased differences between social groups for the group with high privatisation. In this sense, the gap between the middle and the top increased as a consequence of the consolidation of the advantages of those at the top;

understanding these privileges either as sociocultural or economic resources. One could argue, then, that even in contexts where all social groups benefited from the recent expansion (increasing or maintaining their probability of transitioning), those with parents with tertiary schooling and/or from better-off households *benefited even more* from it.

The previous results confirm the three theoretical expectations. In addition, they also support the line of research that sees the persistently high inequality that characterises Latin America as one driven by the top: that is, one that is produced by the growing concentration of privileges, opportunities, and resources among the most advantaged strata (Araujo & Martuccelli, 2011; Castillo, Miranda, & Cabib, 2013; Mac-Clure, Barozet, Galleguillos, & Moya, 2015; Neidhöfer, 2016; Neidhöfer et al., 2017)[20]. These findings, then, confirm that institutional settings do matter in inequality by social origins in higher education. Specifically, a model of expansion linked to high privatisation does play a central role in the strengthening of the economic barriers in the transition between upper secondary and tertiary education.

The implications derived from previous findings are multiple. On the one side, it must be highlighted that the fact that the evidence suggests the strengthening effect of economic resources in higher education attendance, does not mean that the effect of sociocultural resources has become less relevant or weaker. Both components of social origins do lead to differences in the probabilities of attending and transitioning to higher education. On the other side, it must be emphasised that Latin America is a heterogeneous region. Therefore, some heterogeneity within models of expansion is expected. The reader must also be reminded that the classification has an exploratory and general character. In this way, further research should address other structural conditions related to higher expansion such, such as its timing and changes in the macroeconomic and political contexts. Nevertheless, and in order to shed some light on the differences within each model of expansion, country-level analyses are presented in the upcoming chapter.

[20] Research in political economy on the neoliberal turn in developed countries report similar findings. Some scholars, in fact, suggest that the neoliberal turn might have helped the most privileged sectors to consolidate their position (Ames, 1987; Ansell, 2010; Ansell & Samuels, 2014): These sectors were the only ones in a position to "take advantage" of the new opportunities in higher education that a model of expansion – based on market-mechanisms – brought.

CHAPTER 4:

TO WHAT EXTENT DO COUNTRIES DIFFER?

4.1. INTRODUCTION

In the last chapter, it was demonstrated that the effects of the recent expansion on inequality by social origins in higher education attendance have not been homogeneous across Latin America. Moreover, it was confirmed that institutional settings do matter for either the maintenance or reduction of inequality. Specifically, the most relevant changes observed were linked to contexts of high privatisation in tertiary education. On the one hand, not only has privatisation affected parental sociocultural and economic resources differently, but it has also strengthened the effect of economic resources on the transition to this level. In contrast, it is in contexts of high privatisation where this strengthening has led to widening disparities between the most advantaged group and the rest, in spite of all social sectors having benefitted from the expansion. In this sense, those from the most privileged backgrounds have benefited "more" from expansion thanks to the increasingly high privatisation.

Acknowledging that these findings make a contribution to the literature on social stratification research and to the inclusion of Latin America into international comparative research, there is one outstanding query: To what extent are these results consistent between countries classified within the same model of expansion?

The reader must remember that the classification of the models of expansion in Latin America has a general and exploratory character and that the last four decades have seen much policy development across the region. For example, let us revisit the examples of Chile and Brazil, the two countries with the highest degrees of privatisation in tertiary education in

Latin America. On the one side, Chile inaugurated the neoliberal agenda in education at the beginning of the 1980s, being a pioneer not only for the region but worldwide (Gentili, 2008). The creation of private institutions with almost no regulations occurred in the context of a strong civil and military dictatorship, years over which the Junta retrenched the role of state in the provision of social welfare as much as possible. In higher education, national universities were dismembered and interfered, and, up to the present day, tuition fees and competitive funding constitute their main source of financing (Bernasconi, 2005; Bernasconi & Rojas, 2003; Levy, 1986). In contrast, Brazil introduced the neoliberal agenda in the 1990s, in a democratic context. Despite the fact that the neoliberal turn has made Brazil one of the countries with the highest number of for-profit or entrepreneurial universities, public and federal universities retained their autonomy as free-of-charge institutions despite having rigorous entrance examinations (McCowan, 2007; Ossenbach, 2000).

Additionally, the reader must also be reminded that there are differences in the timespan considered in the analyses for each country: 6 out of the 12 selected countries do not follow the timespan stated between 2000 and 2010 to evaluate the potential changes related to expansion on the effects of social origins. Specifically, censuses in these cases were conducted either in the 1980s and 1990 (Chile) or in the 1990s and the 2000s (Bolivia, Colombia, Paraguay, Peru, and Uruguay). Despite that some potential biases might arise from this data timing differences – which were already introduced in Chapter 1 and are discussed in the chapter dedicated to the conclusions of the thesis – it is important to note they are somewhat minimised by variations in the expansion policies' implementation between countries. For example, Chile allowed the creation of the bulk of private institutions in the late 1980s and early 1990s, reason why working with data from the early 1990s and 2000s is appropriate and reasonable. Likewise, Bolivia enacted reforms to its higher education system in the mid-1990s, reason why working with data from the 1990s and the 2000s is also reasonable.

From the above, the aim behind this chapter is to answer the following research question: *Does the effect of the recent expansion on inequality by social origins vary across countries with a similar degree of privatisation in higher education?*

To respond to this question, I shall continue to use the design and methodological approach described in Chapter 1 and applied in Chapters 2 and 3: I utilise the coresidence approach in census data retrieved from IPUMS International for the 12 selected Latin American countries, classified in accordance with the models of expansion based on the distinction of high, medium, and low degree of privatisation in higher education after the bulk of expansion. The design considers the sample aged between 17 or 18 and 24 years, as well as the same dependent, explanatory, and control variables; however, multivariable analyses are conducted at a country level.

The contribution of this chapter is two-fold. First, it aims to encourage comparative research within the Latin American region. To the best of my knowledge, research on inequality in higher education has been conducted only in a handful of countries across the region: whereas the cases of Chile and Brazil have received most of the attention (Salata, 2018; Sevilla Encinas, 2018; Torche, 2010), the situation across Central American countries remains mostly unknown. To the best of my knowledge, only the work of Neidhöfer et al. (2017) sheds some light on this sub-region. Therefore, this chapter seeks to encourage policy and academic debates, both within Latin America and between the region and other countries, both industrialised and developing states. Second, the chapter seeks to exploit the Latin American case to examine the relationship between inequality and increasing or pressing privatisation in higher education, considering that this is the key feature of educational expansion in developing regions (for example, Eastern Europe or South East Asia).

After this introduction, the chapter proceeds as follows: the upcoming section presents the general expectations. Following this, the fourth part presents the multivariate analyses by country by model of the expansion. Finally, the fifth part contains the general conclusions and final remarks.

4.2. EXPECTATIONS

Before detailing the theoretical expectations, the exploratory character of this chapter must be emphasised again: To the best of my knowledge, studies addressing inequality by social origins in higher education have been conducted only in a handful of Latin American countries; with the cases of Chile, Brazil, Colombia, and Mexico receiving most of the attention. Nevertheless, it must be highlighted that there are two joint research initiatives that

have examined higher education expansion from different angles to the one taken in this thesis.

Neidhöfer et al. (2017) provide fascinating results after assessing intergenerational education mobility in 18 Latin American countries for those born between 1940 and 1990. For the purposes of this thesis, the most compelling findings refer to the dynamics behind the increasing educational mobility: On the one hand, this mobility is driven by the high upward mobility of children with parents who have a low level of education; and, at the same time, there is substantial immobility at the top of the distribution. Whereas on the other, there is great heterogeneity between countries, giving rise to the same queries that inspire this chapter.

Another interesting study is the report edited by Ferreyra et al. (2017) for the World Bank. The report is clear in recognising that the large expansion experienced since the early 2000s gave rise to a complex landscape and that Latin America is "at the crossroads". The equity gains associated with the increasing access rates for students from low-income sectors are now looming concerns over equity and quality: not every student has access to a quality option in higher education. The best example of these tensions are the students protests that have occurred in countries such as Chile and Colombia during the 2000s, which highlighted that the "higher education market" – left to its self-regulation – cannot achieve the goal of human development and the democratisation of educational opportunities.

Even though both works are a contribution towards the understanding of inequality in education across Latin America, none of them addresses the key question of whether expansion has reduced the effect of social origins in higher education. For example, the work of Neidhöfer et al. (2017) focuses on the educational attainment and mobility of the population aged 23 and over; hence, they use a definition of social origins restricted to parental education. In turn, the report elaborated by Ferreryra et al. (2017) is rich in information, but mixes approaches, definitions, and data, dedicating most of the efforts to a characterisation of the system and its students. Furthermore, comparting estimates of four different countries that are derived from different studies raises the question of whether the uncovered cross-country variations are real, or simply due to the differences in data and

measurement. Hence, in order to deepen our understanding of inequality in higher education, it is necessary to compare countries in a harmonised framework, as I propose in this thesis.

Moving on, the first theoretical expectation refers to the role of social origins. In this way, social origins do matter in higher education attendance, both before and after the expansion, and regardless of the model of expansion and country. However, variation is expected to be found in the strength but not in the direction of the effect: thus, both parental sociocultural and economic resources are expected to display a positive and statistically significant effect in all countries, regardless of the model of expansion.

The second theoretical expectation addresses the effect of parental sociocultural and economic resources. On the one side, it is anticipated that parental education and household assets will display a positive and statistically significant effect on higher education attendance. This assumption is based upon the findings reported by the work of Torche (2010), Salata (2018), and Neidhöfer et al. (2017), who have demonstrated that parental education does play a relevant role in the transition to higher education and in educational attainment in Latin America. Regarding the effect of household assets, the assumption is based upon the consistent results obtained in Chapters 2 and 3. It is expected that the effect of home ownership will be statistically significant in countries with the highest levels of poverty across the region: According to UNESCO (2015b), Bolivia, Ecuador, and Paraguay are the only three countries in the sample where the share of the population under the poverty line exceeded 30 percent.

The third theoretical expectation refers to the effect of the expansion on social origins: in this way, variations within models of expansion are sought. Within the group with high privatisation, Chile is expected to be an outlier regarding the effect of parental education. Based on the work of Torche (2010), Chile is the only addressed country where the effect of parental education remained stable throughout the economic downturn in the 1980s. Based on this finding, one could argue that Chile would be again the only country where the role of parental education has not increased. Some of the reasons supporting this expectation point towards the development of student support policies, such as scholarships and loans (Larraín & Zurita, 2008), and a model of expansion that promoted growth at all levels of the education system (primary, secondary, and tertiary education).

Finally, the fourth expectation addresses the probability of different social groups to access higher education. One could argue that decreasing gaps between sectors at the bottom and the middle are expected to be found in countries with a low degree of privatisation. This assumption is based on the work of Neidhöfer et al. (2017) and the report edited by Ferreyra and colleagues (2017): increasing educational mobility has been reported for countries with higher amounts of public expenditure in education in Latin America. Nevertheless, there are two commonalities observed across countries regardless of the model of expansion and their macroeconomic and political contexts: increasing rates of upward mobility among groups at the lower end of the social ladder, and persistent immobility among those at the upper end.

4.3. RESULTS

Now that the theoretical expectations have been specified, I shall proceed by presenting the obtained descriptive and multivariate analyses. We must be reminded that descriptive analyses by country were presented alphabetically in Chapter 2; nevertheless, now I categorise the countries by model of expansion (high, medium, low) to facilitate interpretation and to identify more easily the *potential outliers* within each model. By *outliers* I refer to those countries that deviate from the group trend, either in the effect of the components of social origins or in the change in the effect of these components after the expansion. It must also be emphasised that group trends are described in accordance with the results obtained for the different models of expansion presented in Chapter 3.

Before discussing the descriptive analyses, it is important to mention that now that the models are run at the country level, unweighted estimations are reported. It must be highlighted that the focus is put only on the transition to higher education: that is, only the conditional approach is used for the estimations as the most relevant differences by model of expansion were observed for this matter in Chapter 3.

4.3.1. Descriptive analyses

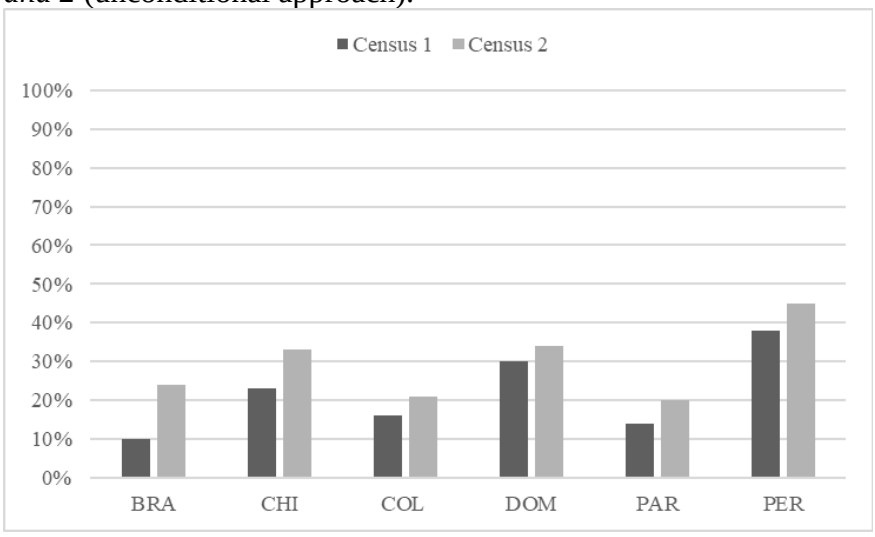
The following two figures illustrate the proportion of respondents who have ever attended higher education for the countries classified within the model of *high privatisation.* Figure 1 presents the proportion of attendees considering the full sample, whereas Figure 2 exhibits the proportion of eligible respondents who have ever attended higher education. All

countries experienced an augmentation in the proportion of general higher education attendance during the intercensal period, as the unconditional approach shows. Nevertheless, this growth did not translate into an increment in the transition rates, as the conditional approach illustrates. On the contrary, for example, for the cases of Dominican Republic and Paraguay the proportion of eligible coresidents transitioning to higher education decreased. Among the other four countries, it is noteworthy that the most marked increases correspond to Brazil and Chile, the cases with the highest levels of privatisation in the region.

In the group of countries with *medium privatisation*, Figures 3 and 4 confirm that the expansion did not lead to clear increments in either general attendance or transition to higher education. Only Mexico shows a slight growth in both attendance and transition rates. Costa Rica and Ecuador, in turn, exhibit the opposite trend. For the Central American country, there is a stagnation in the proportion of respondents who have ever attended higher education and a decrease in the share of those eligible to transition to this level. In the case of the Andean country, a reduction is observed in the attendance rate, while the transition rate to tertiary education remained stagnant.

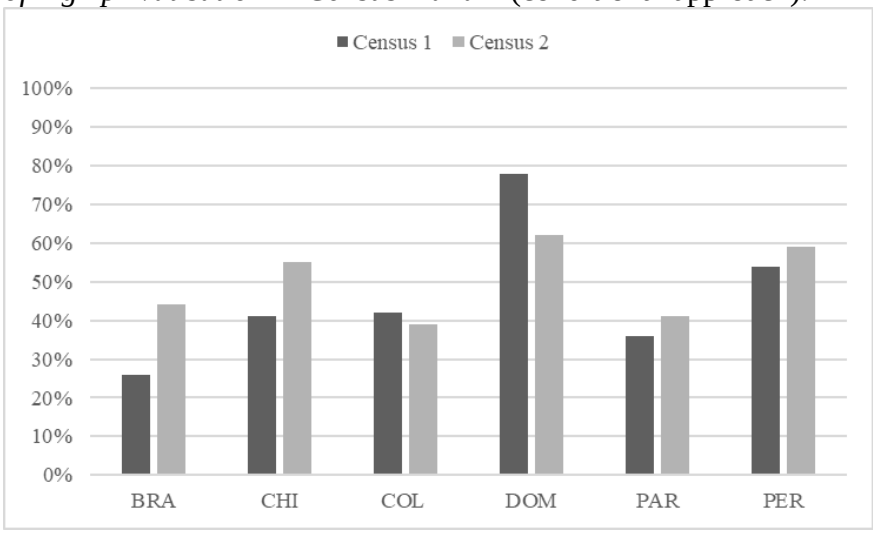
Figures 5 and 6 present the proportion of attendees for the group of countries with *low privatisation.* Bolivia and Panama go along with the trends described for Costa Rica and Ecuador, respectively, with either stagnation or reduction in the general attendance and transition rates. The exception is Uruguay, with a growth in the proportion with general attendance, which did not translate into a rise in the transition rates to higher education. On the contrary: transition remained stable, raising a question about the potential limitations of the Uruguayan expansion.

Figure 1. Proportion of urban coresidents (aged between 17 or 18 and 24) *who have ever attended higher education for countries within the model of high privatisation* in *Census 1 and 2* (unconditional approach).



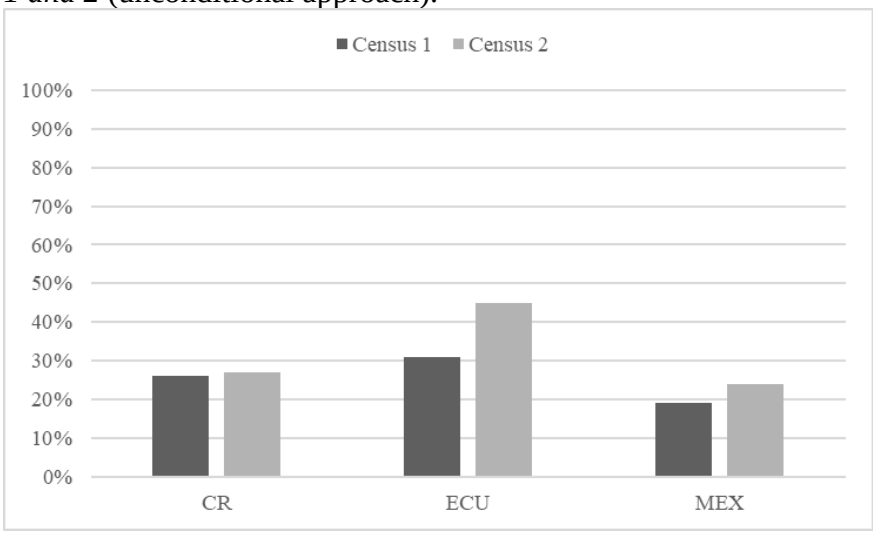
Source: Author's elaboration based on IPUMS International.

Figure 2. Proportion of urban coresidents (aged between 17 or 18 and 24) *with completed upper secondary and who have ever attended higher education for countries within the model of high privatisation* in *Census 1 and 2* (conditional approach).



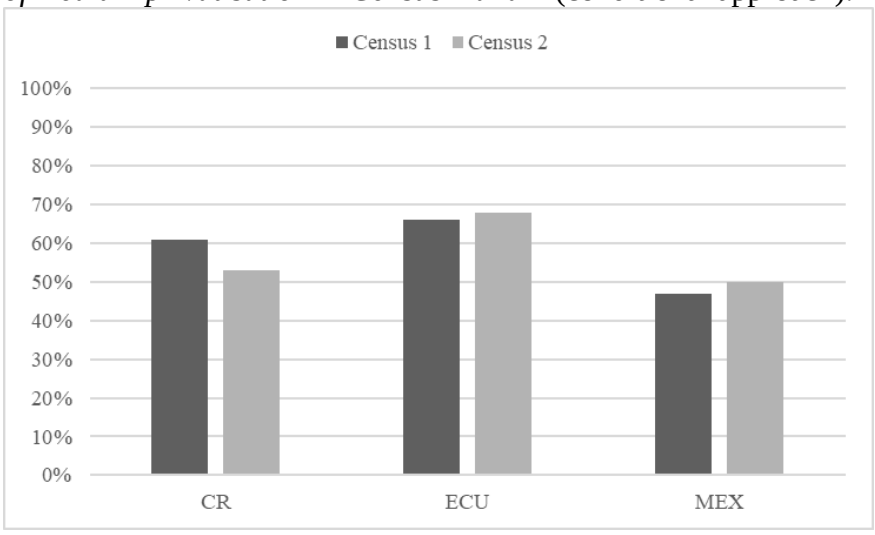
Source: Author's elaboration based on IPUMS International.

Figure 3. Proportion of urban coresidents (aged between 17 or 18 and 24) *who have ever attended higher education for countries within the model of medium privatisation* in *Census 1 and 2* (unconditional approach).



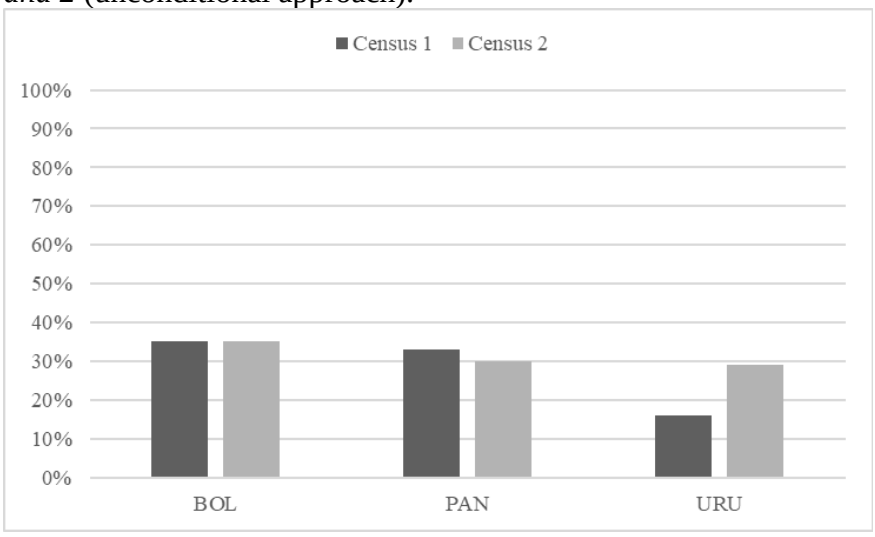
Source: Author's elaboration based on IPUMS International.

Figure 4. Proportion of urban coresidents (aged between 17 or 18 and 24) *with completed upper secondary and who have ever attended higher education for countries within the model of medium privatisation* in *Census 1 and 2* (conditional approach).



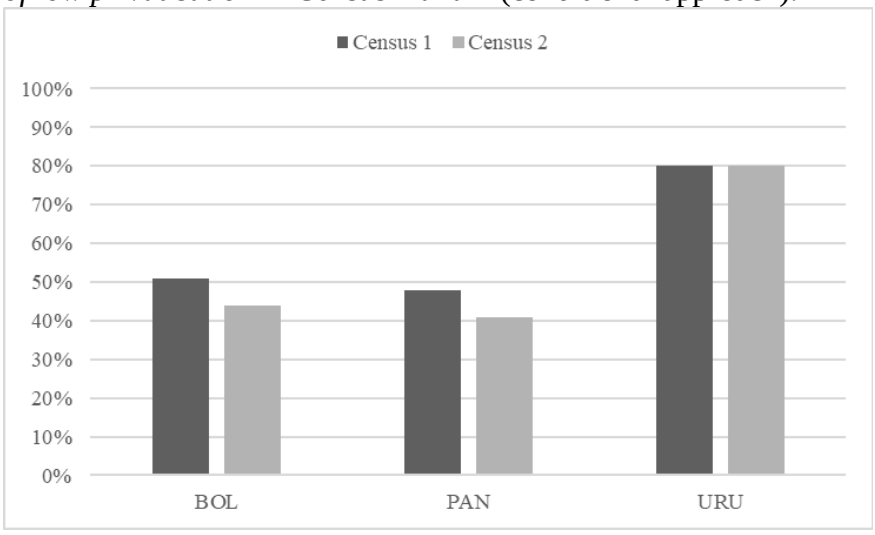
Source: Author's elaboration based on IPUMS International.

Figure 5. Proportion of urban coresidents (aged between 17 or 18 and 24) *who have ever attended higher education for countries within the model of low privatisation* in *Census 1 and 2* (unconditional approach).



Source: Author's elaboration based on IPUMS International.

Figure 6. Proportion of urban coresidents (aged between 17 or 18 and 24) *with completed upper secondary and who have ever attended higher education for countries within the model of low privatisation* in *Census 1 and 2* (conditional approach).



Source: Author's elaboration based on IPUMS International.

From the figures above, it is worth mentioning that only Brazil and Chile – countries with extremely high privatisation – present similar developments in their general attendance and transition rates to higher education: the fact that both showed a rise can be interpreted as preliminary evidence to reject the scenario of a potential bottleneck in higher education. The reader must be reminded that the figure of a bottleneck refers to a situation in which there is a substantial rise in the number of upper secondary graduates which is not accompanied by an equivalent increase in the number of new seats in higher education after expansion. This might be the scenario in the rest of the countries, with either a stagnation or reduction in their general attendance and transition rates to higher education after expansion. For example, a stagnation in general attendance and a decrease in the transition case – such as can be observed in the Panamanian case – might be indicative of the strengthening of socioeconomic barriers in secondary and tertiary education. An increase in the general attendance rate and a reduction or stagnation in the transition to higher education – such as can be observed in the Ecuadorian example – might be related to the consolidation of socioeconomic barriers in higher education.

Due to these potential bottleneck scenarios being reported in countries with a low or medium degree of privatisation, one could suggest that these models of expansion might have a limited capacity to change inequality by social origins in higher education. On the one side, it would be necessary to analyse the education policy context in which expansion took place. For example, in Chile, the educational reform that gave rise to the expansion of higher education also transformed primary and secondary schooling, boosting privatisation at all levels (Torche, 2005a). Other structural characteristics should be also considered, such as macroeconomic and political stability, poverty, and extreme poverty rates, among others. On the other side, it would be also essential to examine the effect of expansion across social groups: previous chapters demonstrated that students from lower, middle, and upper-class backgrounds have been differently affected by the recent expansion. This is precisely what is explored through multivariate analyses in the subsequent section.

4.3.2. Multivariate analyses

Before presenting the estimates at the country-level, three points must be made about their interpretation. It is important to mention again that weighting was not used in the

following calculations. In addition, the focus is on the transition to higher education only, hence, only coefficients obtained through the conditional approach are presented below. Through the main effects model (specified as Model 1) the effect of social origins on the transition from secondary to tertiary education is addressed, and through the interaction effects (specified as Model 2) the potential variation in their effects is evaluated. Lastly, it must be pointed out that estimations are run at the country level, allocating countries within the different models of expansion. The interpretation of the coefficients is centred on the identification of potential outliers within each model of expansion, understanding by 'outlier' to be those country cases that deviate from the trends identified for the group either in the effect of the components of social origins or in the potential variation in their effects after expansion.

Table 1 shows the coefficients obtained in Model 1 and Model 2 for each of the countries classified within the model of high privatisation: Brazil, Chile, Colombia, Dominican Republic, Paraguay, and Peru. Regarding the effect of expansion (census variable), coefficients show that it is not significant in every country: Brazil, Chile, and Peru exhibit large and statistically significant results, while Colombia and Paraguay have no significant variations, and Dominican Republic has a significant decreasing effect. These estimations illustrate that expansion has not increased the likelihood of higher education attendance in every country that has privileged privatisation.

Now, moving on towards analysing the effect related to the different components of social origins, some differences must be noted. Regarding parental sociocultural resources, the effect is positive and statistically significant in all cases, with coefficients over 0.4. In the case of economic resources, two trends are observed: household assets display a positive and statistically significant effect with similar coefficients across countries, whereas the effect of home ownership has a significant effect only in Brazil, Colombia, Paraguay, and Peru.

Regarding the potential variation in the effect of social origins after the expansion, Model 2 indicates that parental education has increased its influence on the likelihood of transition to higher education in Brazil and Colombia. On the contrary, in the case of Chile, parental education has reduced its effect after the expansion, which is in line with the singularity already reported by Torche (2010) for the country during the 1980s. In the cases of

Dominican Republic, Paraguay, and Peru, no statistically significant changes are observed. Now, regarding the variation in the effect of household assets, it can be observed that it has augmented in all countries, apart from Paraguay where no statistically significant changes are reported. Lastly, for the case of home ownership not much can be highlighted: Brazil is the only country where statistically significant coefficients are observed, indicating that it has become less relevant in the likelihood of transitioning after expansion.

Considering the obtained coefficients in Model 1 and Model 2 for the six countries within the group with high privatisation, it is possible to highlight Chile as the most relevant outlier case. It is the only country exhibiting a decline in the effect of parental education after expansion, which might suggest decreasing inequality in the transition to higher education. Nevertheless, the strengthening on the effect of household assets must also be considered with caution. The literature suggests that other education policies – such as student support policies – are key to tackling the socioeconomic barriers in access (Salata, 2018).

Table 1. Logit models (coefficients and p values) for higher education attendance (Model 1) and the interaction effects between social origins and Census 2 (Model 2) for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in countries with *high degree of privatisation* (conditional approach).

	HIGH DEGREE OF PRIVATISATION											
	BRAZIL		CHILE		COLOMBIA		DOMINICAN REPUBLIC		PARAGUAY		PERU	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
CENSUS												
Census	.935***	.601***	.350***	.705***	-.318***	-.189	-.869***	-1.79***	.212**	.334	-.027	.198**
PARENTAL SOCIOCULTURAL RESOURCES												
Parental education	.583***	1.066***	.364***	.794***	.410***	.676***	.403***	.684***	.233***	.442***	.295***	.566***
PARENTAL ECONOMIC RESOURCES												
Home ownership	.179***	.270***	.001	-.082	.194***	.279***	.046	.100	.381***	.647***	.166***	.134***
Household assets	.281***	.257***	.238***	.284***	.261***	.332***	.233***	.119**	.244***	.229***	.185***	.239***
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2												
Parental education		.032**		-.232***		.151***		.102		.017		-.040
PARENTAL ECONOMIC RESOURCES * CENSUS 2												
Home ownership		-.116*		.032		-.094		-.040		-.396		.046
Household assets		.083***		.162*		.059*		.200**		.045		.051*
N	271,749	271,749	23,919	23,919	42,423	42,423	10,694	10,694	3,799	3,799	60,183	60,183

** p<0.05; ** p<0.01; ***p<0.001*

Note: All control variables are included.

Source: Author's elaboration based on IPUMS International (unweighted calculations).

Table 2 below presents the coefficient obtained for the group of countries with a medium degree of privatisation in tertiary education: Costa Rica, Ecuador, and Mexico. With regards with Model 1, it can be observed that all components of social origins display a positive and statistically significant effect on the likelihood of transition. It is noteworthy that the effect of parental education has similar coefficients across countries, but this is not the case with home ownership and household assets. Regarding the interpretation of Model 2, it is noteworthy that the effect of parental education has strengthened in Costa Rica and Ecuador after expansion, whilst it has decreased in Mexico. Opposite results, however, are obtained when analysing the variation in the effect of economic resources: Costa Rica and Ecuador show moderate declines, whereas there is no variation in the Mexican case.

Table 2. Logit models (coefficients and p values) for higher education attendance (Model 1) and the interaction effects between social origins and Census 2 (Model 2) for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in countries with *medium degree of privatisation* (conditional approach).

	MEDIUM DEGREE OF PRIVATISATION					
	COSTA RICA		**ECUADOR**		**MEXICO**	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
CENSUS						
Census	-.426***	-.589	.110**	.046	.104***	.325***
PARENTAL ECONOMIC RESOURCES						
Parental education	.299***	.469***	.364***	.592***	.326***	.667***
PARENTAL ECONOMIC RESOURCES						
Home ownership	.449***	.414***	.115**	.241***	.145***	.199***
Household assets	.097**	.147*	.301***	.335***	.250***	.277***
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2						
Parental education		.166*		.153*		-.064*
PARENTAL ECONOMIC RESOURCES * CENSUS 2						
Home ownership		.069		-.187		-.057
Household assets		-.037**		-.005**		-.016
N	6,519	6,519	17,431	17,431	99,591	99,591

** p<0.05; ** p<0.01; ***p<0.001*

Note: All control variables are included.

Source: Author's elaboration based on IPUMS International (unweighted calculations).

Considering that the group trends reported in Chapter 3 did not show any significant variations in the role of parental education after the expansion, it is possible to argue that Costa Rica and Ecuador are outlier cases: in turn, they illustrate that having parents with higher education attainment has become more important in the likelihood of transition to higher education after expansion. For both countries, then, one could suggest that the sociocultural barriers between secondary and tertiary education have been reinforced after expansion, while economic barriers have remained equally relevant.

Lastly, Table 3 details the estimates obtained for the group of countries with low privatisation: that is, the cases of Bolivia, Panama, and Uruguay. Results obtained in Model 1 indicate that the parental education has a significant and positive effect on the likelihood of transitioning to higher education, as well as household assets, for all the three countries. However, home ownership reports a positive and significant coefficient in the Bolivian case only, probably because this is the poorest country in the South American region (Torche & Spilerman, 2008). Estimates described in Model 2 are statistically relevant to the variation in the effect of parental education: it has declined its role in the transition to higher education in Bolivia and Panama after expansion, but not in Uruguay. In turn, the Southern cone country is the only case with a statistically significant decrease in the effect of household assets, suggesting that economic resources have become less important in the transition to higher education after expansion.

Table 3. Logit models (coefficients and p values) for higher education attendance (Model 1) and the interaction effects between social origins and Census 2 (Model 2) for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in countries with *low degree of privatisation* (conditional approach).

	LOW DEGREE OF PRIVATISATION					
	BOLIVIA		**PANAMA**		**URUGUAY**	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
CENSUS						
Census	-.482***	.199	-.456***	-.663	-1.119***	2.160*
PARENTAL SOCIOCULTURAL RESOURCES						
Parental education	.223***	.623***	.187***	.541***	.361***	1.381**
PARENTAL ECONOMIC RESOURCES						
Home ownership	.148***	-.030	.090	.061	.113	.288
Household assets	.276***	.343***	.204***	.137*	.304***	.691***
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2						
Parental education		-.238***		-.299***		-.879
PARENTAL ECONOMIC RESOURCES * CENSUS 2						
Home ownership		.306		.058		-.180
Household assets		-.132		.153		-.478*
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2						
N	13,879	13,879	4,247	4,247	2,472	2,472

** p<0.05; ** p<0.01; ***p<0.001*
Note: All control variables are included.
Source: Author's elaboration (unweighted calculations).

Uruguay is a remarkable case for the model with low privatisation due to its lack of statistically significant coefficients reported in Model 2 regarding parental education. Let us be reminded that the group trend reported in Chapter 3 showed that expansion is associated with the decreasing effect of parental sociocultural resources in the transition to tertiary education. It must be highlighted that Uruguay experienced a considerable increase in general attendance but not in the transition to higher education. In light of the coefficients reported in Model 2, one could suggest that in the Uruguayan case, the most important barriers between secondary

and tertiary education are sociocultural and not economic, probably as a consequence of important inequalities at lower levels of education.

In order to disentangle the outlier cases that Chile, Costa Rica, Ecuador, and Uruguay represent within their respective models of expansion, I shall continue by estimating the predicted probabilities of transitioning to higher education. Following the results reported in Chapters 2 and 3, the reader must remember that expansion has not affected social groups to the same extent, so either wider or narrower gaps between groups can be found. The methodology I use follows the design presented in previous chapters. The category of reference, again, is the one in the middle (both for parental education and household assets), decision based on distinguishing whether the expansion has affected the existent gaps between those from lower, middle, and/or upper social origins.

Table 4 displays the coefficients obtained in Model 3, presenting the estimates obtained through interaction effects between the different components of social origins and census only for each of the selected countries.

Regarding the variation in the effect of parental education, let us focus on the cases of Chile, Costa Rica, and Ecuador. Let us remember as well, that in the former, its effect has declined after expansion, while in the two latter, estimations showed that the effect has been strengthened. One could argue that the reduction associated with the Chilean case seems to be driven by a narrowing gap between those with parents who have less than primary education and their peers with parents who, at least, have some secondary education. In the Costa Rican and Ecuadorian cases, on the contrary, the change seems to be driven by variations among the most advantaged sectors: coefficients show that the gap between those with parents with higher education and their peers with secondary-educated parents has widened after expansion.

Moving on to the variation in the effect of household assets, let us focus on the cases of Chile and Uruguay. We must be reminded that the statistically significant variations in Chile reported an increasing effect of economic resources, whereas the opposite was described in Uruguay. The strengthening effect in the Chilean case seems to be the result of two dynamics: the narrowing gap between those from the least-affluent background and their counterparts in the middle, and the growing distance between the latter and the ones from the most economically advantaged households. On the contrary, in the Uruguayan case, the declining effect is related to a reduction in the distance between those in the middle and their counterparts from the most affluent households.

Table 4. Logit models (coefficients and p values) for higher education attendance including *the new three-fold variables for parental education and household assets and their interaction effects with Census 2* for urban coresidents (aged between 17 or 18 and 24) by country (conditional approach).

MODEL 3 INTERACTION EFFECTS	DEGREE OF PRIVATISATION			
	HIGH	MEDIUM		LOW
	CHILE	COSTA RICA	ECUADOR	URUGUAY
PARENTAL SOCIOCULTURAL RESOURCES * CENSUS 2				
Parents with a low level of education	.277***	.006	-.015	.809
Parents with a medium level of education (ref)				
Parents with a high level of education	-.180	.366*	.419**	.245
PARENTAL ECONOMIC RESOURCES * CENSUS 2				
Low-asset household	.210***	-.003	.110	.286
Middle-asset household (ref)				
High-asset household	.023*	.041	.047	-.176*
N	23,919	6,519	17,431	2,472

** p<0.05; ** p<0.01; ***p<0.001*

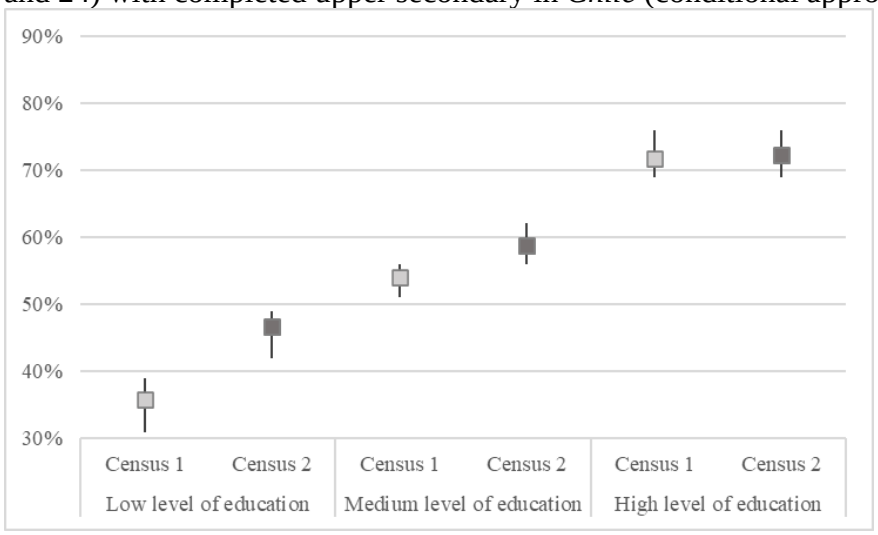
Note: Models are estimated separately, including all explanatory and control variables by country.

Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figures 7 to 14 illustrate the predicted probabilities of transitioning to higher education for each of the cases commented on above. For each country, two figures are presented (one for each component of social origins under evaluation), regardless of the statistical significance of the coefficients described in Table 4.

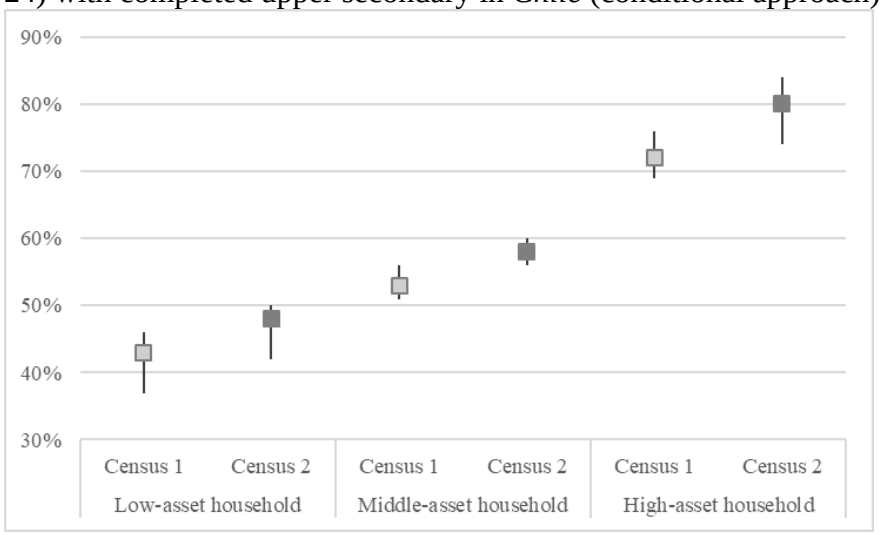
From these estimates, it is important to highlight that Chile is the only example where the predicted probability of transition increased for all social groups after expansion. Hence, the estimates allow us to reject the potential bottleneck scenario at this specific transition. Another relevant aspect is a marked fall in the probabilities of transition across all social groups in Costa Rica after expansion, and, to a lesser extent, the stagnation observed in Ecuador. In these cases, one could propose that, the potential bottleneck between secondary and tertiary education is narrower in the Costa Rican than in the Ecuadorian case: fewer upper secondary graduates, one could expect, find a space in higher education in Costa Rica than in Ecuador. Probably, the strong barrier at this transition is the result of strong socioeconomic inequality at lower levels of education. A final aspect to be highlighted in these figures is the consolidation of those from upper backgrounds: the group at the top of the sociocultural or economic ladder does not show marked variations in probability of transition. Furthermore, if there is the case of a narrowing gap between the top and the group in the middle of distribution, this potential loss is minimal, without risking their advantages.

Figure 7. Predicted probabilities of higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Chile* (conditional approach).



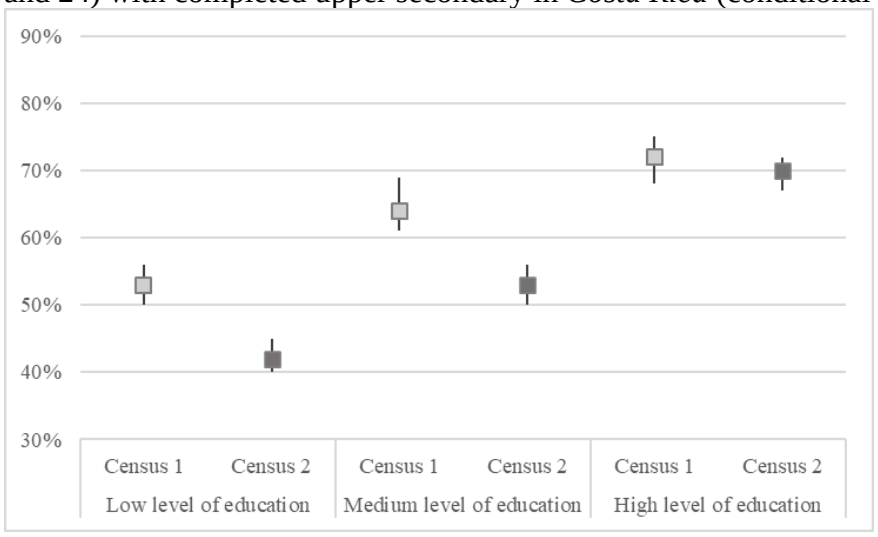
Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 8. Predicted probabilities of higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Chile* (conditional approach).



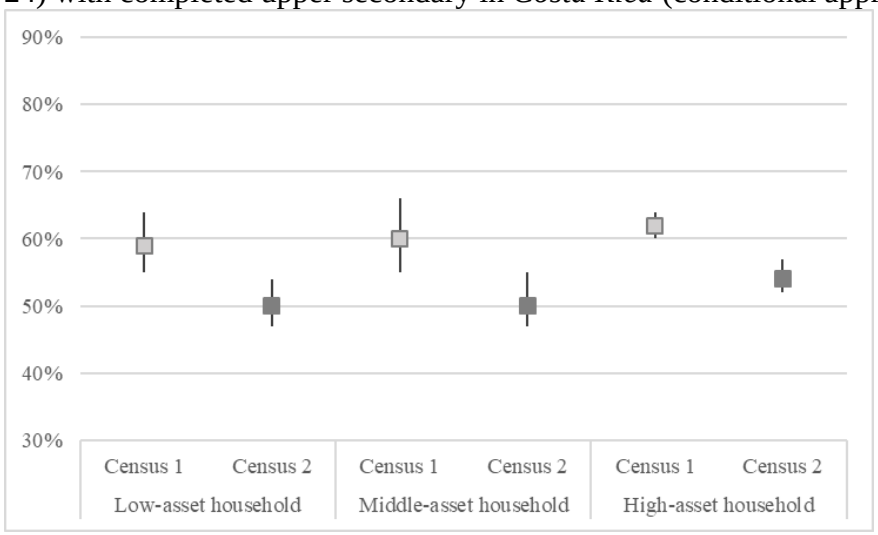
Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 9. Predicted probabilities of higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Costa Rica* (conditional approach).



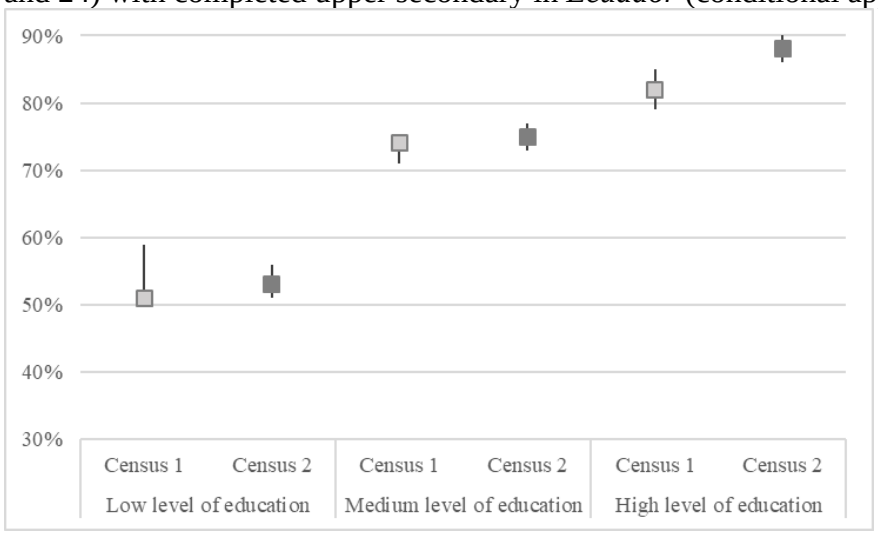
Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 10. Predicted probabilities higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Costa Rica* (conditional approach).



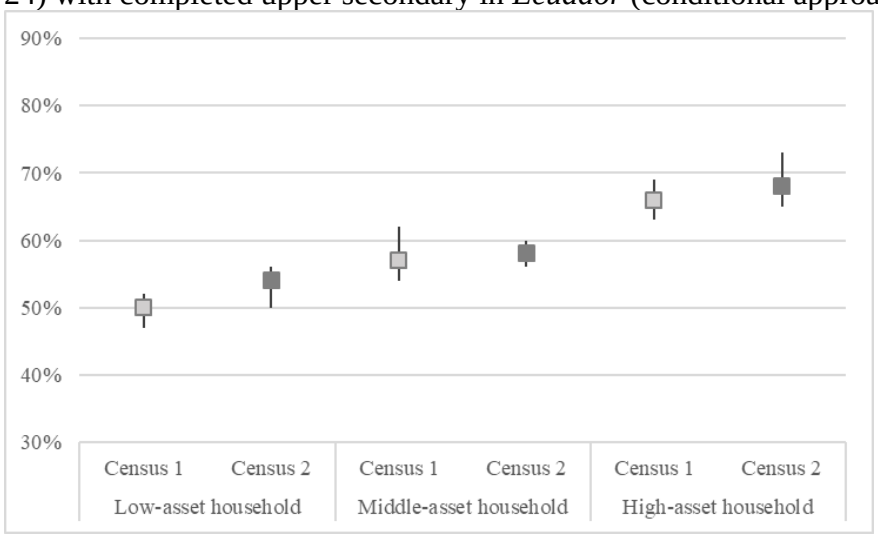
Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 11. Predicted probabilities higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Ecuador* (conditional approach).



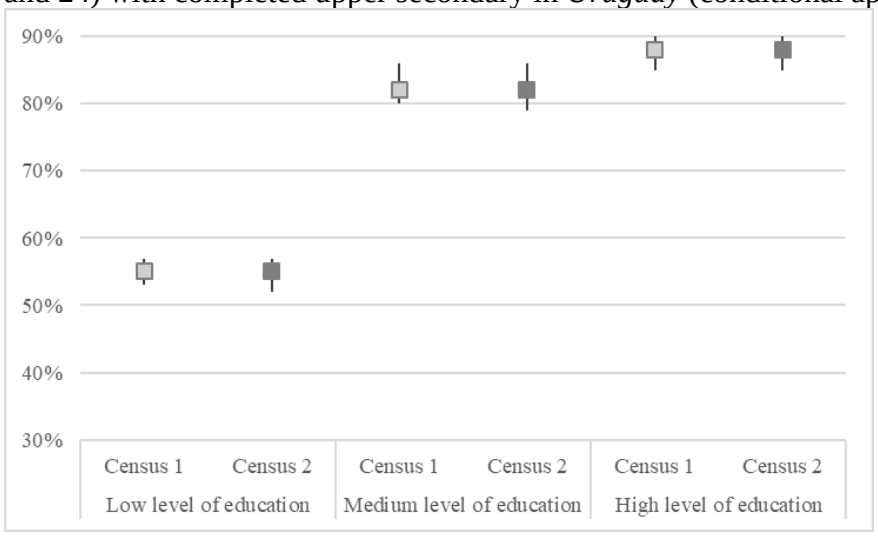
Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 12. Predicted probabilities of higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Ecuador* (conditional approach).



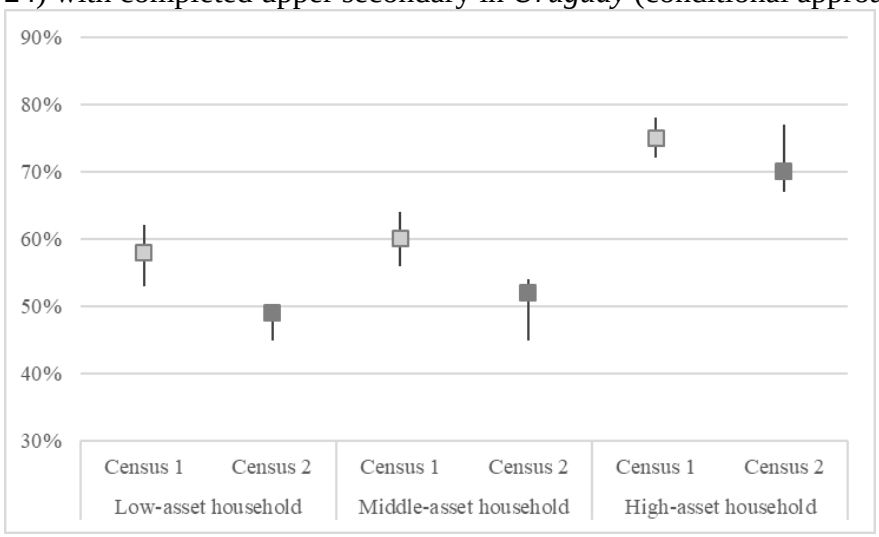
Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 13. Predicted probabilities higher education attendance based on the *new three-fold variable for parental education and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Uruguay* (conditional approach).



Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

Figure 14. Predicted probabilities of higher education attendance based on the *new three-fold variable for household assets and Census 2* for urban coresidents (aged between 17 or 18 and 24) with completed upper secondary in *Uruguay* (conditional approach).



Note: Calculations based on Model 3 (presented in Table 4) with 95% confidence intervals.
Source: Author's elaboration based on IPUMS International (unweighted calculations).

4.4. CONCLUSIONS

In this chapter, the question of whether the effect of the recent expansion on inequality by social origins varies across countries with a similar degree of privatisation was addressed. Specifically, I focused on the conditional approach, based on the results described in Chapter 3 regarding the transition between upper secondary and tertiary education. To do so, I continue to work with census data retrieved from IPUMS International for the 12 Latin American countries included in the sample, but both descriptive and multivariable analyses were conducted at the country level. In this sense, the methodology followed the indications detailed in Chapter 1, with only two exceptions: Multivariate models were conducted without weighting. Both descriptive and multivariate analyses were interpreted in comparison with the group trends reported in Chapter 3, either for the effect of the different components of social origins and for the potential variations in these effects after expansion. Therefore, the focus was on identifying the potential outliers within each model of expansion, understanding *outliers* to be those cases that deviated from the trends reported for each of the models of expansion.

Descriptive analyses illustrated that not all countries have experienced commensurable developments in the evolution of their general attendance and transition rates to higher education. Three scenarios were distinguished: one where both rates increased to a similar extent (e.g., Brazil and Chile), another where general attendance grew but the transition rate from secondary to tertiary education stagnated (e.g., Costa Rica and Ecuador), and a final scenario where general attendance increased but the transition rate to higher education fell after expansion (e.g., Uruguay). These three landscapes provided preliminary evidence to test whether there is a bottleneck in the transition to higher education, understanding *bottleneck* as the following: On the one hand, a situation in which upper secondary graduates cannot find a space in an expanding higher education system, and, on the other hand, the potential limitations of a certain model of expansion in generating opportunities in higher education. These interpretations were confirmed by descriptive analyses, as the cases for each of the scenarios were found in different models of expansion.

Multivariate analyses were necessary to continue the exploration of the potential bottleneck scenarios and the role of the different components of social origins in the transition from upper secondary to tertiary education. Regarding the effect of the components of social origins, both parental sociocultural and economic resources display a positive and statistically significant

effect on the likelihood of transition, as was reported in Chapters 2 and 3. Now, regarding whether expansion has modified the effect of these components, variations were found within each of the models of expansion. In other words, the potential outliers identified through descriptive analyses were confirmed with the coefficients obtained through interaction effect models. Thus, Chile confirmed its adjudicative character within the group with high privatisation, as the effect of parental education decreased after expansion, while the effect of household assets increased. The same happened with the cases of Costa Rica and Ecuador in the group with middle privatisation, as parental education increased, and economic resources decreased their role in the transition to higher education after expansion. Finally, in Uruguay significant variations were observed only regarding the effect of household assets.

With the outlier character of these four countries, I evaluated the social dynamics behind expansion. To do so, I constructed new three-fold variables for parental education and the distribution of household assets with the purpose of identifying lower, middle, and upper background social groups. Interaction effect models showed that expansion has affected social groups differently. Furthermore, models demonstrated that the decreasing effect of parental education is associated with a narrowing gap between those with parents with a low level of education and their peers with secondary-educated parents. In other words, expansion seems to have benefited those from less privileged origins, as is observed in the Chilean case even during the 1980s (Torche, 2010). Models also showed that the increasing effect of either parental education or household assets is related to a widening gap between those at the top of the distribution and their peers in the middle. In other words, expansion seems to have benefited "more" those from more affluent origins, as is observed in the Chilean case, also. No significant variations are observed in the Ecuadorian and Costa Rican cases, whereas in the example of Uruguay, the distance between the middle and the top was reduced after the expansion.

From the above, it is possible to conclude that three out of the four theoretical expectations were confirmed. Social origins do matter in the transition to higher education, both before and after the expansion, displaying a positive and statistically significant effect in all countries, as the first and second expectation stated. Moreover, variations within each model of expansion were confirmed, as the third expectation described. To be specific, Chile, Costa Rica, Ecuador, and Uruguay were outlier cases that deviated from their respective group trends with regards to the variation associated with the components of social origins after the expansion. In addition, the adjudicative character of Chile was confirmed, being the only country where the effect of parental education decreased, as the work of Torche (2010) augurated. Nevertheless,

the fourth expectation referring to social dynamics in contexts of low privatisation cannot be confirmed. On the one hand, the case of Chile is the one with a more marked reduction in the gap between those at the bottom and the middle of the educational ladder. Moreover, this dynamic was not observed in Uruguay, the outlier case selected for the group with low privatisation. On the other hand, low privatisation was the only model associated with a narrowing gap between the top and the middle. Nonetheless, at any point, this is an important decline in the likelihood of transition for those at top. Therefore, the immobility of their privileges already reported by Neidhöfer and colleagues (2017) was also confirmed.

Now that variations within models of expansion have been confirmed, what factors would explain the potential bottlenecks and the effect of expansion across different social groups in the four selected countries? What do the education policy developments in each of these countries state?

In the case of Chile, acknowledging the fact that the recent expansion of higher education took place alongside the reform of education at the primary and secondary level, one could suggest that the student support policies have been effective in preventing a bottleneck in the transition from secondary to tertiary education. However, the effectiveness of measures such as scholarships and student loans to cover tuition fees is limited in terms of preventing dropping out and increasing graduation rates. In this sense, further research should consider whether the developments in these policies have reinforced the trends described in this chapter.

The cases of Costa Rica, Ecuador, and Uruguay share two features: increases in the general attendance rates, accompanied by either the stagnation or decline in the transition rates to higher education, and the maintenance of the distance between the least privileged social groups. These characteristics allow for the proposal that the bottleneck between upper secondary and tertiary education is the result of strong barriers to access at lower levels of education. This has been confirmed by international organisations (UNESCO, 2015a), for example, with the marked differentials in educational attainment between urban and rural areas. Therefore, one could also suggest that because the sample considers only urban coresidents, the gap between lower and middle background sectors might be even wider. In terms of higher education policy developments, these countries also share the phenomenon of boosting expansion without conducting drastic expansion reforms at lower levels (Contera & Gutiérrez, 2014). Of course, further research in each of these cases is necessary, in order to understand the policy architecture (Brunner, 2013) behind these developments.

From the above, the case of Chile is the one that deserves special attention due to the validity and robustness of the decline reported in the effect of parental education on both general attendance and transition to higher education: these results have not been reported in this thesis only, but also by other scholars, even in the context of the economic downturn of the 1980s (Torche, 2005a, 2010). To this stream of research, findings reported in this chapter contribute with the incorporation of the role that economic resources play in the education stratification. Therefore, the second part of this thesis addresses the Chilean case after 2002. It is only then that expansion cemented, as differentiation and stratification processes strengthened within higher education.

PART II

CHAPTER 5:

EXPANSION AND STUDENT SUPPORT POLICIES IN A CONTEXT OF HIGH PRIVATISATION IN HIGHER EDUCATION: THE CASE OF CHILE

5.1. INTRODUCTION

In the first part of this thesis, it was demonstrated that social origins do matter in higher education attendance in Latin America, both before and after expansion. In addition, analyses showed that institutional settings do play a role in inequality in higher education, as countries with a high degree of privatisation not only present persistent inequality in attendance, but also illustrate that the effect of economic resources has been strengthened after the expansion. Within this group of countries, Chile is highlighted as an exception because it is the only case where the effect of parental education has been reduced without an increase in the role of economic resources. For these reasons, the second part of this thesis examines the Chilean case in depth, exploring further institutional features through time and updating the set of indicators related to social origins. For this purpose, this part evaluates the role of social origin on higher education attendance after 2002, which was the year when previous estimations concluded. The reader must be reminded that Chile is part of the sub-group of countries characterised by data timing variability.

Specifically, I decided to focus on a particular feature of institutional settings: student support policies. It must be noted that this discussion has been largely absent in the literature on how institutional settings affect inequality by social origins. However, it is important to emphasise that cost-sharing arrangements in higher education are becoming a central policy and a political demand around the world, as there is growing concern about poverty among the young and student indebtedness. Following the Chilean example, social movements have demanded the abolition of student debt, both before and currently, during the COVID-19 pandemic.

In Latin America, different student support policy models have been implemented, which can be classified in accordance with their focus: either on access to or permanence in higher education (Vargas & Heringer, 2017). In this way, countries tend to privilege access over permanence at this level, which translates into policies that prioritise student loans over measures such as grants to cover livelihood expenses, hardship funds, levelling courses and psychosocial support, among others. Within the group of countries with high privatisation, one could distinguish the case of Brazil, where public institutions are free of charge and support policies are oriented toward the implementation of quotas in favour of underrepresented groups in higher education and student welfare schemes (i.e., installation of nurseries, scholarships, etc). Despite the efforts, access is still unequal, and permanence is still low in higher education due to socioeconomic disparities at lower levels (Noël López, Elizalde, & Rolando, 2015; SIES, 2013; UNESCO-IESALC, 2020).

Within this group, one could also distinguish the case of Chile, a country where, alongside high privatisation, all types of tertiary education are affected by tuition fees. Experts define Chile as an adjudicative case where democratisation of access has been understood as the democratisation of tuition fees schemes, which started to be implemented in the mid-1990s (Vargas & Heringer, 2017). In this way, Chile could be defined as a transitional model with gradual gratuity in higher education and student welfare policies with low efficacy in terms of permanence. These issues do not display differences between public and private sectors because expansion has taken place in the private sector, and students in need of support tend to be found mostly in private and non-selective institutions (Bernasconi, 2005; Pérez Roa, 2014). Although further details on these developments are provided in the subsequent section, it is important to emphasise that Chile is not only considered a frontrunner in the implementation of the neoliberal agenda in education in the world, but also a pioneer in the implementation of student loans in the Latin American context.

Now, opting for a student loan policy over other alternatives to reduce inequality in higher education, of course, is important due to several reasons. Firstly, because in a model with high privatisation, student loans are the foundation upon which higher education financing is founded. Secondly, because such a policy is meant to provide an adequate financial incentive to students from disadvantaged backgrounds, who are underrepresented in higher education and, particularly, in the most selective tiers and institutions. Thirdly, because one could doubt the long-term effectiveness of this policy: it is a fact that despite the impressive rise in overall access rates, dropout and graduation rates have remained persistently low during the last two

decades in Chile (SIES, 2020). Lastly, and considering the findings reported in previous chapters, it is worth wondering to what extent the results obtained for Chile between 1992 and 2002 might change because of the developments in the student support policies. Might the strengthening role of economic resources be seen as a consequence of the student loan schemes?

Before answering the aforementioned question, I shall proceed by presenting the recent expansion of Chilean higher education since 2002, identifying phases and the most relevant student support policies implemented throughout this period. Then, I shall move towards the methodological framework to address the Chilean experience, detailing data, sample, variables, and modelling strategy.

5.2. UNDERSTANDING THE RECENT EXPANSION OF HIGHER EDUCATION IN CHILE

5.2.1. General context

Despite the fact that the last two decades have seen much policy development in Chilean higher education, scholars and policymakers still focus on the impact of the 1981 reform (Gentili, 2008). The scientific and public policy agenda tends to focus on the study of the consequences of the neoliberal agenda – which happened four decades ago – instead of evaluating the impact of specific education policies. Thus, it is worth wondering: Do those (policymakers, politicians, general public) who perceive the Chilean expansion as a "success story" really understand what has happened in the country in the last two decades? (Bernasconi & Rojas, 2003). As an attempt to fill this gap in the literature on educational stratification in Chile, I propose a periodisation of the recent expansion of higher education based on the policies implemented towards increasing the number of students and institutions since 1973. This periodisation, then, comprises the following four phases.

Between 1973 and 1981 an initial phase of *stagnation* can be identified. It is during this period that the Military Junta intervened in higher education, aiming to weaken the public sector: high-ranking military personnel assumed positions as rectors, while professors, students, and administrative staff associated with Allende's government were either expelled, arrested, exiled, tortured, or killed (Levy, 1986). Throughout these years, higher education was a small, homogeneous, and elitist system, composed of eight universities only (2 public and 6 private) (Bernasconi & Rojas, 2003), with enrolment rates that never surpassed 7 percent (Brunner,

1993), and with a student distribution concentrated in the public sector (65 percent) (Gregorutti, Espinoza, González, & Loyola, 2016).

Then, a phase of *early expansion* took place between 1981 and 1990, years during which higher education was radically restructured. The period starts with the 1981 reform, which introduced the neoliberal agenda to the entire education system[21]. In higher education, this meant an expansion through increasing privatisation and marketisation across the system, which established a self-regulation educational market (Bernasconi & Rojas, 2003). For several scholars, the 1981 reform corresponds to the most radical restructuring of an education system ever attempted in the world (Assaél et al., 2011; Mönckeberg, 2005; Schwartzman, 2002; Torres & Schugurensky, 2002).

The reform pushed diversification through the institutional reorganization of the higher education sector as a two-track system, thanks to the incorporation of private actors (and corporations) into educational provision.

On the one side, the university tier faced the subdivision of the former two public universities into 16 new autonomous universities formed from the original regional headquarters of the original two public universities. In addition to the existing six private universities, the public universities integrated the Council of Rectors of Chilean Universities (*Consejo de Rectores de Universidades Chilenas*, also known as CRUCH due to its initials in Spanish). This is the reason why they are known as traditional or CRUCH universities. The bulk of the expansion, both in the number of students and institutions, was led by private universities, which were created in record time and with almost no regulations for their functioning (Bernasconi & Rojas, 2003).

On the other hand, the vocational track was formed through the creation of two types of private and for-profit institutions: professional institutions (known as *Institutos Profesionales* in Spanish, so forth: IP) and vocational training centres (*Centros de Formación Técnica* in Spanish, so forth: CFT). Further characteristics of each of the institutions are presented in Table 1. It must be highlighted to the reader that these four institutions still form the basis of the

[21] For further information about the consequences of the 1981 reform at other levels of education, please see the work of Elacqua (n.d., 2012; Elacqua, Martínez, Santos, & Urbina, 2012) and Serrano, Ponce de León & Rengifo (2012). For some of the effects of this reform on other levels of education, please see the work of Mizala & Torche (2012) and Mizala & Urquiola (2013).

Chilean higher education sector, despite the increasing regulations around functioning and admission policies (Noël López et al., 2015).

Table 1. Definition of the higher education institutions since 1981 in Chile.

1. UNIVERSITY TRACK	
Traditional Universities	Universities which are members of the Council of Rectors of Chilean Universities (CRUCH). The CRUCH is composed of public and private universities founded before the 1981 reform. In 2020, it comprises 27 members (16 public and 11 private universities), who are assigned to the unitary system of higher education admissions (based on the scores obtained in the university selection test). These universities are defined as good quality, and selective institutions, with teaching at the undergraduate and graduate levels, research, and academic outreach.
Private Universities	Private universities founded after the 1981 reform. The bulk of them – with few exceptions – corresponds to non-selective, low quality, and for-profit institutions, with teaching at the undergraduate level only.
2. VOCATIONAL TRACK	
Professional Institutes	Institutions allowed to grant higher-level professional and vocational degrees, but not academic degrees. Most of their programmes last between 2 and 4 years. All professional institutes are private and can operate as for-profit institutions.
Vocational Training Centres	Institutions allowed to grant only postsecondary level vocational degrees. Most of their programmes last between 2 and 3 years. All vocational training centres are private and can operate as for-profit institutions.

Source: Author's elaboration based on SIES (2014, 2020).

During the 1990s, a third phase can be identified under the name of *advanced expansion*. It is during these years that Chilean higher education formally became a mass system, reaching an enrolment rate of 30 percent. The guidelines established in the 1981 reform were not changed, but reinforced, by the Organic Constitutional Law of Teaching[22] (*Ley Orgánica Constitucional de Enseñanza*, in Spanish, also known as LOCE), which did not ban profit-making at any level of education. With a rise in the number of institutions, the focus was placed on democratising access to higher education through the creation of a student loan scheme: The University loan Solidarity Fund (so forth: *Fondo Solidario* due to its name in Spanish) was created in 1994 for this track only (Larraín & Zurita, 2008); whereas loans in private banks and the Chilean Development Agency (so forth: CORFO[23] due to its initials in Spanish) became available for vocational students (CIPER, 2012).

[22] It also created the Higher Education Council (*Consejo Superior de Educación* in Spanish), an autonomous body with representation from diverse sectors of society responsible for ensuring the progress and quality of the educational system. This oversaw the licensing process, supervising institutions until they reached full autonomy. It was not until 1999, with the development of the Programme to Improve Quality and Equity in Higher Education, that the National Commission for Accreditation of Undergraduate Programmes (*Comision Nacional de Acreditación*, in Spanish) put a quality assurance process into place (Gregorutti et al., 2016).

[23] It corresponds to the Corporación de Fomento de la Producción. This government agency is dependent on the Ministry of Economy and oversees entrepreneurship, innovation, and the strengthening human capital in the country. Within the finance system, CORFO supports individuals or companies before the financial institution to obtain a loan, partially compensating banks in the event of a possible default in the repayment of the loan.

Loans were established as an economic incentive to boost enrolment in higher education among potential candidates from poor socioeconomic backgrounds. It is important to note to the reader that the socioeconomic conditions in Chile over the 1990s were far from stable, as a consequence of the high poverty and inequality inherited from the dictatorship (Ffrench-Davis, 2007, 2016). The neoliberal reforms were able to control inflation and to generate fiscal balance. However, they also produced financial and macroeconomic instability, and regressive social spending, contributing to the concentration of political and economic power. In this way, loan conditions were far from favourable for students: they were aimed to cover tuition fees at the undergraduate level only, for students enrolled in CRUCH universities, with an annual interest rate of around 9 percent and a 15 to 20-year repayment period. According to Ossandón (2012), these conditions made student loans very similar to regular bank loans. This problem became evident by the end of the decade, as loan re-payment rates were very low, while dropout rates remained persistently high[24], introducing student indebtedness for Chileans under 23 years of age as one pressing political issue that finally exploded in the student protests of 2006 and 2011 (Fernández, D'Alencon, Cassorla, & Araneda, 2014; Larraín & Zurita, 2008; Mönckeberg, 2013; Sanhueza de la Cruz, 2015).

The final phase corresponds to one of *contested expansion*, taking place since 2002 and characterised by the increasing contestation against the high privatisation and marketisation in higher education. In a context where the demand for the democratisation of educational opportunities in education has become one of the most important drivers for social and political mobilisation, several attempts have been made to transform but not to abolish the student loan system (Bellei et al., 2014; Fernández et al., 2014; Mönckeberg, 2005, 2013). As examples of the former, the reader must be reminded of the Penguins' Revolution of 2006[25], the Chilean Winter of 2011[26], the boycott of the university entrance examination of 2019[27], and the demand

[24] An article published by the electronic newspaper CIPER in 2012, using data up until 2003, revealed that dropout was around 40 percent in higher education and that 60 percent of those students who graduated did not work in a professional occupation (CIPER, 2012).

[25] The 2006 student protests – widely known as *The Penguins' Revolution* because of the students' uniforms – were a series of ongoing protests and strikes conducted by secondary students between April and June. Protesters' demands included the abolition of the Organic Constitutional Act of Teaching (LOCE, established in 1990), an end to municipalisation of public education, a reform of the Full-time School Day policy *(Jornada Escolar Completa* in Spanish), and an improvement in the academic quality of education. For further details, please, see: Disi Pavlic, 2018; Donoso, 2013; Fleet & Guzmán-Concha, 2017, Mönckeberg, 2013, among others.

[26] The 2011 student-led protests took place between April and August – the winter months in Chile – and involved the secondary and tertiary sectors. Protesters' demands included a new educational reform in the country, which should include more direct state participation in primary and secondary education, and the end of profitmaking in education in the country. For further details, please, see: Della Porta, Cini, & Guzmán Concha, 2020

[27] Secondary student-led protests took place in December, during the days PSU should be carried out. Protesters aimed to suspend the test in relation to the uprising that had started in October, claiming the profound unequal

to abolish student debt in 2020[28]. As examples of the latter, three types of student loan regime can be identified as follows:

An *initial regime* in the early 2000s, during which either Fondo Solidario or CORFO loans changed their conditions. However, through executive procedures, the interest rates were lowered to 6 percent and the administrative requirements to obtain or renew loans were simplified.

Between 2006 and 2011, at the height of student mobilisation, a *regime of loan democratisation* can be identified. It is during these years that the State-Guaranteed Loan (*Crédito con Aval del Estado*, in Spanish, so forth: CAE) was created and became available to all students enrolled in accredited[29] universities, regardless of their public or private status. It is important to mention that CAE had a higher interest rate than Fondo Solidario and CORFO loans, but most students opted for it because it was a less bureaucratic loan with a longer re-payment period (Segura, 2016).

Finally, from 2012 onwards, an *accountability regime* can be distinguished as several regulatory measures were implemented in the loan system. Among these, interest rates were fixed at 2 percent and repayment conditions were equivalised between CAE and Fondo Solidario (Guzmán & Riquelme, 2011; Ossandón, 2012; Segura, 2016). In addition, loan democratisation was deepened as CAE became available to all students enrolled in accredited institutions, regardless of their type and public/private status.

The reader must be reminded that this is a critical aspect because profit-making is not banned in higher education and vocational institutions can legally operate as for-profit enterprises. In addition, it is relevant to mention that all higher education institutions can set their tuition fees freely as the system aims to operate as a market. However, the gratuity bill passed in 2018 established the coverage of the reference tuition fees determined by the Ministry of Education, for students from the lowest 3 quintiles enrolled in accredited institutions (Biblioteca del Congreso Nacional de Chile, 2018). These students usually combine gratuity with loans to

character of university access. For further details, please see the following newspaper articles: BioBioChile, 2020; El País, 2020.

[28] The Chamber of Deputies approved the bill which establishes the suspension of payment of student loans due to the state of catastrophe related to the COVID-19 pandemic (Biblioteca del Congreso Nacional de Chile, 2021).

[29] In 2006, Chile established a quality assurance institution (*Consejo Nacional de Acreditación*, in Spanish), an entity in charge of licensing, institutional accreditation, and programme accreditation. In addition, this council oversees the accreditation institutions and certification of private agencies to undertake accreditation procedures (Gregorutti et al. 2016).

cover the difference between their actual tuition fees and the referential fees (Dagnino, 2020; Dooner & Mena, 2020).

5.2.2. Evolution in the number and distribution of students and institutions

Now that four phases have been identified within the recent expansion of Chilean higher education, including three loan regimes from 2011 to the present, I shall proceed by characterising the evolution of the number of students and institutions for each of these stages. To do so, I use public statistics available at UNESCO, in addition to the information collected by the Chilean Higher Education Information System (*Sistema de Información de Educación Superior*, in Spanish, so forth: SIES). Students and institutions, then, are analysed in accordance with their distribution by gender, tier, type of institution, and geographical location.

As a contextualisation of expansion and its phases, Figure 1 shows the general evolution in the number of students between 1970 and 2020. It can be observed that there has been a steady rise since the 1980s, but more markedly in the phase of *advanced expansion* in the early 2000s. It is during this stage that the gender gap was reversed, with women outperforming men in higher education attendance. It is important to note that between 2014 and 2020 – amidst the process of *contested expansion* – the overall number of students surpassed the benchmark of 1.2 million, despite showing a plateau and a slight decline towards the end of the period. This evolution also translated into increasing enrolment rates, which are summarised below in Table 2.

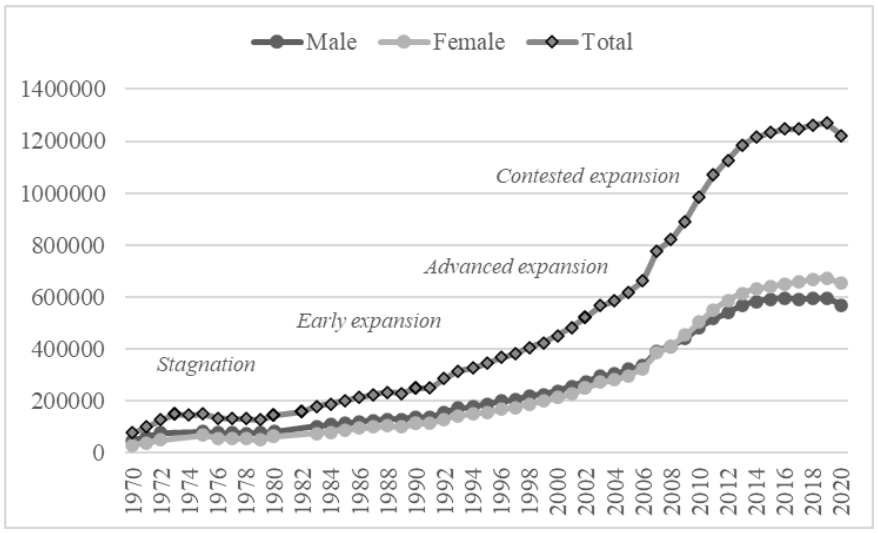
Table 2. Summary of the expansion phases and net enrolment rates[30] in higher education in Chile between 1973 and 2020.

PHASE	TIME PERIOD	NET ENROLMENT RATE	
		Initial	Final
Stagnation	1973-1981	7%	7.2%
Early expansion	1981-1990	7.2%	15%
Advanced expansion	1990-2002	15%	30%
Contested expansion	2002-present	30%	52%

Source: Author's own elaboration based on UNESCO's Institute for Statistics (2019).

[30] UNESCO defines "net enrolment rate in tertiary education" as "the total number of students aged between 18 and 24 enrolled in that level, expressed as a percentage of the total population in that age group".

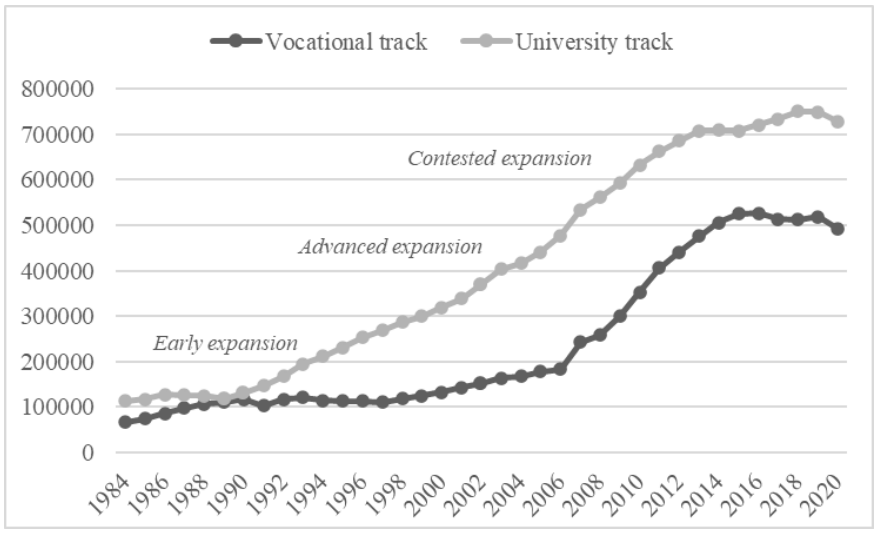
Figure 1. Evolution in the number of students in higher education by gender in Chile between 1970 and 2020.



Source: Author's elaboration based on UNESCO – Institute for Statistics (2019) and SIES (2018, 2019, 2020).

When analysing the evolution in the number of students by track, there are important differences between the university and the vocational tiers. Figure 2 illustrates the evolution in the number of students by track between 1984 and 2020. Despite showing a similar evolution during the *initial phase*, the bulk of expansion was concentrated among universities after the 1990s. The gap between tiers widened over the phase of *advanced expansion* to, then, remain stable during the stage of *contestation*. One could suggest that the expansion was concentrated in the university tier because student loans were created and diversified in the mid-1990s and early 2000s. The existent gap in enrolment between tracks, then, could receive a three-fold interpretation. The loan policy seemed to be effective in acting as an economic incentive to boost access to higher education in the mid-1990s. However, once loans democratised to university and vocational students in the 2000s, it was ineffective in boosting enrolment in vocational institutions. In addition, one could also propose that the gratuity policy did not incentivise enrolment in higher education, regardless of the track, as there is a slight fall in the number of students between 2018 and 2020.

Figure 2. Evolution in the number of students in higher education by track between 1984 and 2020 in Chile.

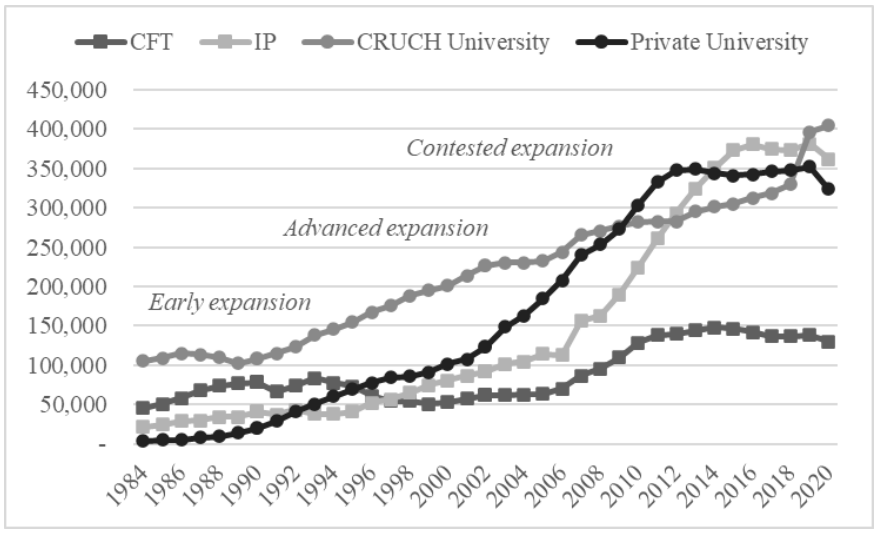


Source: Author's elaboration based on SIES (2018, 2019, 2020).

Continuing with the decomposition of enrolment in higher education, Figure 3 presents the evolution in the number of students by type of higher education institution between 1984 and 2020. During the *initial phase*, no marked differences between institutions can be distinguished. However, during the 1990s, CRUCH universities experienced the sharpest growth, which was then surpassed by private universities and professional institutes in the 2000s, during the phase of *advanced expansion*. The reader must be reminded that loans democratised in this stage, which could be suggested as one of the main forces behind this distribution. It is necessary to reiterate that CAE was targeted at vocational and university students from accredited institutions. In this way, one could suggest that attendance is concentrated these two institutions because, despite being accredited alongside CRUCH universities, their selectivity is significantly lower as they are not part of the national admission system presided over by the CRUCH.

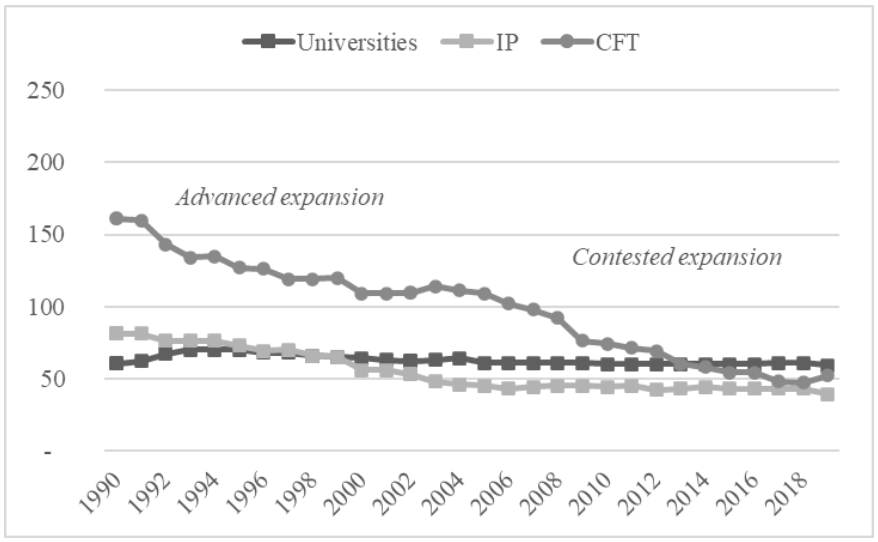
The increase in the number of students did not translate into a parallel growth in the number of institutions. Figure 4 shows that the number of CFTs drastically fell between 1990 and 2018, despite representing the bulk of the body of institutions during the *initial phase*. In contrast, the number of universities and IPs remained stagnant over the same period, despite representing most of the student body. How is this possible?

Figure 3. Evolution in the number of students in higher education by type of institution in Chile between 1984 and 2020.



Source: Author's elaboration based on SIES (2018, 2019, 2020).

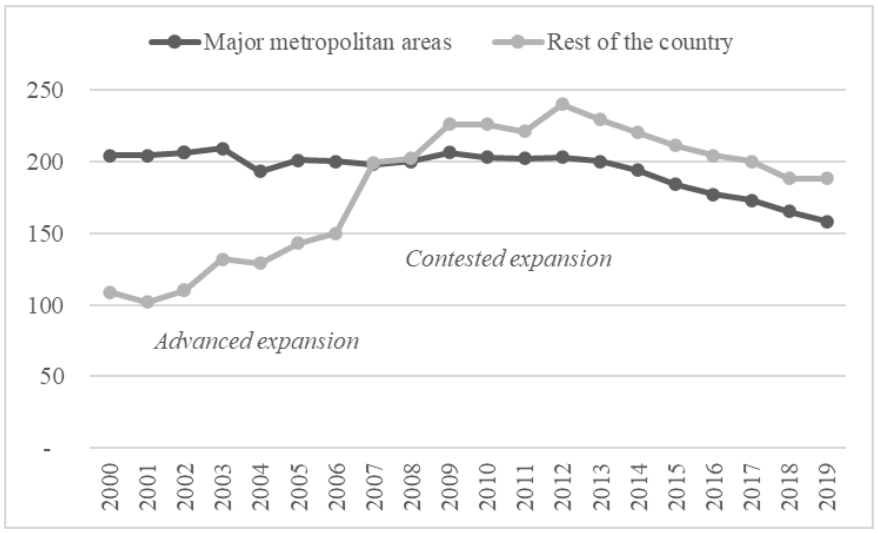
Figure 4. Evolution in the number of higher education institutions by type in Chile between 1990 and 2019.



Source: Author's elaboration based on SIES (2018, 2019).
* Due to data limitations, it was not possible to identify CRUCH and private universities separately.

Figure 5 presents the geographical distribution of higher education institutions between 2000 and 2019. The reader can observe that during the phases of advanced and contested expansion, the system tended towards decentralisation: this means that most institutions were located outside of the three major Metropolitan areas (regions V, VIII, and Metropolitan). However, caution on this point is required: quality differentials have been confirmed between Metropolitan institutions and the rest of the country, with the best and most selective universities concentrated in the three major urban zones (Arango, 2016; Fernández et al., 2014; Torres & Zenteno, 2011).

Figure 5. Evolution in the number of higher education institutions by geographical distribution* in Chile between 1984 and 2019.



Source: Author's elaboration based on SIES (2018, 2019).
* Major metropolitan areas: regions V, VIII, and Metropolitan of Santiago.

From the above, the divergent trends in the evolution of the number of students and institutions might need of a different explanation, as they do not follow the efficiency argument that supported the loan democratisation of the 2000s. Although it is true that this policy did not boost access to vocational institutions, one could suggest that it was efficient in encouraging enrolment in the so-called "best institutions". In this sense, research is consistent in highlighting the predominance of the university sector over vocational institutions as the most reasonable and convenient option if pursuing tertiary education. This, according to Barozet (2017), is another exceptionality of the Chilean expansion, considering that the economic model and the labour market structure are based on commodity exportation. In addition, CFTs are considered the least selective institutions as they offer the lowest-ranked degrees (see Table 2).

This explanation, however, is refuted by Arango (2016). This scholar suggests that the divergent trends between the number of institutions and students should not be interpreted following the efficiency argument. On the contrary, she argues that they correspond to a negative externality of the functioning of the Chilean higher education market: that is, the increasing concentration of higher education opportunities in a reduced number of private providers. In 2016, for example, five institutions represented almost 60 percent of enrolment in the vocational track due to the formation of holdings (Leihy & Salazar, 2017). For example, a single private provider can operate as an IP, CFT, and private university at the same time. This creates important tensions considering that profitmaking is legally allowed for the former

two institutions, while students enrolled in any of these are eligible for loans if the provider is accredited[31]. In this sense, another exceptionality of the Chilean case emerges: How little the distinction in the private/public status of institutions matters for the loan policy (Bernasconi & Celis, 2017). Thus, it is worth questioning: Is the democratisation of the loan scheme an advantage for higher education institutions or for their students?

The recent expansion of higher education in Chile cannot be fully described without mentioning its important accountability deficiencies to date (Lemaitre, Maturana, Zenteno, & Alvarado, 2012). Numerous corruption cases have been exposed since early 2000s, which involve the sale of institutional accreditations and infrastructure as mechanisms to pay political favours back, to avoid bankruptcy, or for personal profit[32] (Diario Uchile, 2014; González & Guzmán, 2012; Mönckeberg, 2005, 2013). Asa result, none of these actions were effective, responsible authorities were either removed from their positions or prosecuted, and social mobilisation demanding changes in higher education has increased progressively. Despite public notoriety, however, scandals have not translated into radical policy reorientation. In fact, even the transition towards partial gratuity has been jeopardised in a context where contestation against privatisation and student indebtedness continues. This discussion, in light of the findings reported in previous chapters, begs several questions. To what extent is it possible to reduce inequality in attendance if the Chilean higher education system is still based on increasing privatisation and marketisation?

This question is addressed in the following chapter. Nevertheless, before doing so, it is necessary to detail the methodological design through which a reply to this question is sought. Hence, the description of the data, sample, variables, and modelling strategy is presented in the subsequent section.

5.3. METHODOLOGY

Chile is not an exception regarding the lack of suitable data to conduct research on inequality by social origins in Latin America. The country does not have good quality panel data, administrative registers, or cross-sectional surveys with retrospective questions and

[31] This is the case, for instance, with INACAP, institutions with headquarters in every region in Chile, either as CFT, IP, and/or university (*Universidad Tecnológica INACAP, Instituto Profesional INACAP, and Centro de Formación Técnica INACAP*, in Spanish).

[32] It was demonstrated that the National Accreditation Commission, the body in charge of certifying academic quality of higher education institutions, was selling accreditations in order to make private universities eligible for CAE. It is important to note that only 'academically accredited' institutions and their student bodies are part of the loan system.

national representation. To overcome this obstacle, as I mentioned in previous chapters, I propose the use of the coresidence approach. This strategy, the reader should be reminded, consists of associating the socioeconomic characteristics of the head of the household (and his/her partner, if any) with those of his/her children still living in the parental home and who are of age to access higher education (Behrman, Gaviria, & Székely, 2001). The coresidence approach, in my opinion, is the most suitable alternative to overcome the lack of appropriate data as the transition to higher education is an event that happens relatively early in life.

In the case of Chile, I analysed the coresidence patterns for the population aged between 18 and 21 years and between 18 and 24 years using the National Socioeconomic Characterisation Survey (*Encuesta de Caracterización Socioeconómica Nacional*, so forth CASEN, due to its initials in Spanish) conducted between 1990 and 2017 (see Appendix 5)[33]. Descriptive analyses confirm that most of the population in these age ranges still reside in the parental home. Moreover, analyses demonstrate that the share of coresidents is slightly higher among those aged between 18 and 21, but differences are significant when compared with individuals aged between 18 and 24 years. The proportion of coresidents oscillates around 70 percent throughout the period under scrutiny, without showing important discrepancies between urban and rural areas, or between men and women.

Despite the fact that the coresidence approach seems suitable for the Chilean case and is aligned with the research objectives behind this thesis, it is not exempt from criticism. Specifically, regarding the potential socioeconomic bias arising from this approach, which are associated with the overrepresentation or underrepresentation of certain socioeconomic groups. In the Chilean case, considering the characteristics of CASEN, the bias could be associated with the underrepresentation of the new households formed during the inter-survey period and income underreporting among the wealthiest sectors (División Observatorio Social, 2020)[34].

5.3.1. Data

As it has already been stated, I opted to work with CASEN, which has a probabilistic, stratified, multi-stage design, and has been conducted by the Ministry of Social Development and Family (former Ministry of Planning or *Ministerio de Planificación*, in Spanish) on a

[33] In addition, Annex 1 also presents the differences in the proportion of co-residents for the age frame between 18 and 21 years of age, as it was suggested by examiners. However, in order to guarantee the comparability with the rest of the chapters, I opted to keep working with the original age range between 18 and 24 years of age.
[34] It is important to add that Salata (2018) uses the co-residence approach to address inequality in access to higher education in Brazil between 1995 and 2015.

biennial or triennial basis since 1990. On average, each version of CASEN surveys around 65,000 households and 270,000 individuals, with a response rate of over 85 percent (División Observatorio Social, 2020). The sample is representative at the country, regional, and provincial levels; and it has incorporated the country's administrative changes since 2002 when three more regions were created.

To the best of my knowledge, CASEN corresponds to the most widely used dataset by researchers and policymakers in Chile because of the broad range of available indicators on living conditions. The survey consists of a well-structured instrument with fixed sections on demographic and household characteristics, including specific questions on respondents' education, health, household, income, and working conditions[35].

Specifically, I work with the CASEN versions conducted after 2002: that is, I selected, harmonised, and merged the surveys conducted in 2003, 2006, 2009, 2011, 2013, 2015, and 2017. It is important to note that the survey conducted in 2017 corresponds to the latest CASEN publicly available.

5.3.2. Sample

The sample is composed of individuals (both men and women) aged between 18 and 24 years, living in the parental home in urban or rural areas when surveyed. It is important to highlight that this is a novelty of this part of the thesis, as the analyses conducted in previous chapters considered urban populations only. Additionally, the reader must be reminded that the expressions *young coresidents, coresidents,* and *respondents* are used interchangeably to refer to the sample in the following chapters.

5.3.3. Variables

Even though CASEN is based on a well-structured instrument with a comprehensive set of questions, it was necessary to harmonise and recode the selected dependent, explanatory, and control variables.

Three dependent variables were identified for *higher education attendance.* The first of them is the *general higher education attendance* to capture the share of respondents with access to

[35] According to the times, the set of questions has been updated, changed, or removed in several different years. For example, questions on social origins were included in 2009 for the head of the household only, a new question on life satisfaction and subjective well-being was incorporated in 2011, multidimensional poverty indicators were included in 2013, 2015, and 2017, and questions on discriminatory experiences were incorporated only in 2017.

the higher education sector. It was coded as a dummy variable, for which (0) is *"Never attended higher education"* and (1) is *"Higher education attendance".* The second corresponds to a categorical variable for *track attendance*, where (0) is *"Never attended higher education"*, (1) *"University attendance"* and (2) is *"Vocational attendance"*. The third dependent variable refers to *institutional attendance*, with (0) as "*Never attended higher education",* (1) *"CRUCH university attendance",* (2) *"Private university attendance"*, (3) as *"IP attendance",* and (4) *"CFT attendance".* It is necessary to mention that institutions follow a pattern that starts with the most selective (CRUCH university) and ends with the least selective institution (CFT). Furthermore, the reader must be reminded that I use the terms of *attendance* and *access* interchangeably.

Moving on, three groups of explanatory variables were included in the analysis, acknowledging the need for capturing the change over time using cross-sectional data and providing a comprehensive definition of social origins.

To capture the change over time in the effect of social origins (if any), I opted for a year approach like CASEN, due to its cross-sectional character. Therefore, the first exploratory variable is *survey year* formulated as a categorical variable as follows: (0) is *"2003",* (1) *"2006"*, (2) *"2009"*, (3) *"2011"*, (4) *"2013"*, (5) *"2015"*, and (6) *"2017"*.

To capture the effect of social origins (if any), I identified *parental sociocultural and economic resources,* following the line of work already presented in Chapter 1 (Bukodi & Goldthorpe, 2013; Prieto, 2021; Torche & Costa-Ribeiro, 2012; Torche & Spilerman, 2008).

Parental sociocultural resources are conceptualised as *parental educational attainment*. To fulfil one of the gaps acknowledged by the literature, I opted for a comprehensive definition to avoid working with the dominance approach. The variable, then, replicated the categories described in Chapter 1.

Household economic resources are operationalised in three sets of variables: *Home ownership, household assets,* and *household disposable income.*

Home ownership is defined as a dummy variable where (0) is *"No"* and (1) is *"Yes".*

Household assets were coded as an index, following the methodology explained in Chapter 1; however, it is necessary to highlight that the list of indicators was updated according to the changes introduced in each of the versions of CASEN. This list responds more accurately to the massification of goods and services that, in the 1990s, were considered exclusive to certain

economically well-off sectors, but which became popular in the early 2000s (Silva-Burgos, 2013). The list, then, comprises the following assets as dummy variables: *sewage, water supply, electricity, hot water supply, access to Internet, computer, mobile phone, telephone, paid TV services,* and *heating.* Likewise, *employment status of the head of the household* was included in the index considering that labour market participation is particularly low among women, even when acting as head of their households (Piras & Rucci, 2014). Therefore, the index includes scores between 0 and 11, which were normalised and converted into *z scores*.

Household disposable income was operationalised as a *continuous log-transformed variable*. It must be noted that household disposable income was not available for all countries in the data retrieved from IPUMS International, meaning this is another novelty of the chapters dedicated to Chile.

It must be stated that other explanatory variables were evaluated but not included in the analyses. The inclusion criterion is based on the results obtained in the correlation matrix: variables with correlation coefficients over 0.7 were excluded to avoid collinearity (for further details, see Appendix 6).

Moving on, two types of control variables were included in the analyses*: Respondent's demographics* and *household characteristics.*

Respondent's demographics were operationalised as *gender, age,* and *indigenous background. Gender* was coded as a dummy variable, where (0) *is "Female"* and (1) *is "Male". Age,* on the contrary, was defined as a continuous variable with values ranging between *18* and *24 years.* Finally, *indigenous background* was operationalised as a dummy variable, with (0) as *"Non-indigenous background"* and (1) as *"With indigenous background"*.

It is important to note that *indigenous background* was not included in previous chapters due to data limitations. Past research on educational inequality in Chile has reported that having an indigenous background is not statistically significant (Torche, 2005a, 2010). However, because of the different methodologies used in previous studies and the political notoriety that indigenous movements have achieved in recent years (Krausova, 2019; Sepúlveda Sánchez, 2018), I opted for the inclusion of *indigenous background* as a control variable in this chapter.

Household characteristics was operationalised as *household location* and *household structure.*

Household location was included as two dummy variables. The first of these variables is *urban location,* where (0) corresponds to *"rural location"* and (1) is *"urban location".* The second

variable is *"living in a major Metropolitan area",* where (0) is *"non-Metropolitan household"* and (1) corresponds to *"household located in a major Metropolitan area (either V, VIII, or Metropolitan region)"*. It must be noted that the three major Metropolitan areas contain around 11 million people, equivalent to over 65 percent of the population living in Chilean territory (Instituto Nacional de Estadísticas, 2018).

Household structure was operationalised as *family size, residing in a two-parent household,* and *residing in a female-headed household. Family size* was defined as a continuous variable, ranging from 2 to 23 people. It must be noted that no single-person households were included in the analyses because of the co-residence approach. *Residing in a two-parent household* was coded as a dummy variable, with (0) as *"one-parent household"* and (1) as *"two-parent household". Residing in a female-headed household,* finally, was included as a dummy variable, where (0) is *"Male-headed household"* and (1) is *"Female-headed household".*

It must be highlighted that considering both the type of household and the gender of the head of the household represents another novelty of the chapters dedicated to Chile. They were considered because many changes have affected the composition of Chilean households in the last two decades, including size reduction, structural diversification, a growing proportion of female-headed household, and the feminization of poverty (Silva-Burgos, 2013).

The full list of variables and their measurement level is presented below in Table 3. Then, Table 4 displays descriptive statistics for the pooled sample[36].

Table 3. List of variables.

NAME	TYPE	CATEGORIES
1. DEPENDENT VARIABLES		
General higher education attendance	Dummy	0 Never attended higher education 1: Higher education attendance
Track attendance	Categorical	0: Never attended higher education 1: University attendance 2: Vocational attendance
Institutional attendance	Categorical	0: Never attended higher education 1: Attending CRUCH universities 2: Attending private universities 3: Attending IPs 4: Attending CFTs
2. EXPLANATORY VARIABLES		
2.1. SURVEY YEAR		
CASEN year	Categorical	0: 2003 1: 2006 2: 2009 3: 2011

[36] For descriptive statistics for each of the versions of CASEN, please see Appendix 8.

		4: 2013 5: 2015 6: 2017
2.2. PARENTAL SOCIOCULTURAL RESOURCES		
Parental education	Ordinal	1: One parent with primary education 2: Two parents with primary education OR one parent with secondary education 3: One parent with secondary education and one parent with primary education 4: Two parents with secondary education OR one parent with tertiary education and one parent with primary education 5: One parent with tertiary education and one parent with secondary education 6: One parent with tertiary education OR two parents with tertiary education
2.3. PARENTAL ECONOMIC RESOURCES		
Home ownership	Dummy	0: No 1: Yes
Household assets index	Continuous	Z scores, formed by the following 11 dummy variables: sewage, water supply, electricity, hot water supply, internet access, computer, mobile, telephone, paid TV services, heating, and employment status of the head of the household
Disposable Household Income	Continuous	Natural logarithm (log)
3. CONTROL VARIABLES		
3.1. DEMOGRAPHIC CHARACTERISTICS		
Gender	Dummy	0: Female 1: Male
Age	Continuous	0: 18 years 1: 19 years 2: 20 years 3: 21 years 4: 22 years 5: 23 years 6: 24 years
Indigenous background	Dummy	0: Non-indigenous 1: Indigenous
3.2. SOCIODEMOGRAPHIC CHARACTERISTICS		
3.2.1. HOUSEHOLD LOCATION		
Urban area	Dummy	0: Rural 1: Urban
Major Metropolitan area	Dummy	0: Non-metropolitan area 1: Metropolitan area
3.2.2. HOUSEHOLD STRUCTURE		
Family size	Continuous	Between 2 and 23 members
Type of household	Dummy	0: One-parent household 1: Two-parent household
Female-headed household	Dummy	0: Male 1: Female

Source: Author's elaboration.

Table 4. Descriptive statistics at the general level.

NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLE					
General higher education attendance	136,721	.404	.490	0	1
Track attendance	136,721	.526	.701	0	2
Institutional attendance	127,465	.713	1.098	0	4
2. EXPLANATORY VARIABLES					
2.1. SURVEY YEAR					
Year	136,721	2.879	1.867	0	6
2.2. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	136,701	3.530	1.496	1	6
2.3. PARENTAL ECONOMIC RESOURCES					
Home ownership	136,721	.726	.446	0	1
Household assets index	136,007	2.327	1	2.21e-07	3.963
Disposable income (log)	135,602	13.140	.936	5.099	18.402
3. CONTROL VARIABLES					
3.1. DEMOGRAPHIC CHARACTERISTICS					
Gender	137,008	.580	.493	0	1
Age	137,008	2.599	1.965	0	6
Indigenous background	136,920	.123	.328	0	1
3.2. HOUSEHOLD CHARACTERISTICS					
3.2.1. HOUSEHOLD LOCATION					
Urban area	137,008	.751	.432	0	1
Major Metropolitan area	137,008	.435	.495	0	1
3.2.2. HOUSEHOLD STRUCTURE					
Family size	137,008	4.553	1.572	1	23
Type of household	137,008	.806	.395	0	1
Female-headed household	137,008	.229	.420	0	1

Source: Author's elaboration based on CASEN, versions between 2003 and 2017.

5.3.4. Modelling strategy

Logistic and multinomial regression models were conducted to estimate the effect of social origins on general higher education attendance, track attendance, and institutional attendance, respectively. Two types of regression models were necessary due to the characteristics of the dependent variables (either dummy or categorical variables).

Considering that CASEN corresponds to a cross-sectional survey, 7 of its versions were pooled so variations through time (if any) were captured through a year approach. In this sense, to address whether the recent expansion has changed (or not) the effect of social origins on the different types of higher education attendance, interaction effects were included. In addition, to capture whether social groups differ in the predicted probability of higher education attendance, marginal effects were estimated.

All estimations took two approaches into account: On the one hand, the *unconditional approach* considers the whole sample, providing the probability of attendance regardless of

respondents' educational attainment. On the other hand, the *conditional approach* considers only the sample eligible to transition to higher education (that is, with completed upper secondary). As explained in the first part of this thesis, the use of these approaches aims to gauge when inequality in higher education attendance emerges: either throughout the educational career (as a cumulative effect) or at a specific point in the educational career (in the transition from upper secondary to tertiary education). This is what the unconditional and conditional approaches capture, respectively.

Before proceeding with the analyses for the Chilean case itself, it is necessary to mention that weighting was used to compensate for the different sample sizes in each of the CASEN versions that were pooled. Specifically, I decided to work with the weightings provided by each of the versions of CASEN at the national level.

Finally, robustness was verified by replicating analyses on the sub-sample of coresidents aged between 18 and 21 years. In all cases, there were no significant differences either in the effect or strength of the obtained coefficients.

CHAPTER 6:

CHANGING EDUCATIONAL INEQUALITY IN CONTEMPORARY CHILE?

6.1. INTRODUCTION

The first part of this thesis examined whether the expansion of higher education has affected the role of social origins in access to this level of education in Latin America. Analyses at the regional level and by country groups showed that social origins do matter, both before and after expansion, and without exception. However, results by country groups signalled the relevance of institutional settings in inequality by social origins in higher education: identified in accordance with the degree of privatisation in higher education, estimations revealed that this aspect has affected the components of social origins differently. It was demonstrated that the effect of household economic resources on the likelihood of higher education attendance strengthened after expansion, widening the disparities between the most advantaged sectors and the rest of society. When each of the countries with high privatisation was analysed as a case study, Chile emerged as an exception: not only did the effect of household economic resources strengthen after expansion, but the role of parental education also decreased. How could we explain this, considering Chile is a worldwide pioneer in the implementation of the neoliberal agenda in education?

Three explanations can be elaborated. Firstly, one could argue that the results obtained for the Chilean case are biased because of the period under scrutiny: data availability allowed for estimations for the period between 1992 and 2002 only. However, as already stated in the first part of the thesis, this stage is comparable with the higher education development shown by other Latin American countries in the first decade of the 2000s, because they introduced the neoliberal agenda in education one decade after (e.g., Brazil, Ecuador, and Peru in the 1990s).

Now that further information has been provided about the Chilean expansion of higher education, a second explanation could refer to the character of the 1981 reform, which

transformed the entire education system. Considering it is also known as a "privatisation reform", one could expect increasing inequality in the unconditional and conditional access to higher education, as Torche (2005a) described for the late 1980s. Nevertheless, this is not the case, as previous chapters of this thesis demonstrated the opposite. In this sense, the work of Torche (2010) explains why inequality grew at higher but not at lower transitions in education: policies aimed to promote and protect education at lower levels played a key role.

From the above, a third explanation can be proposed: inequality by social origins in the transition to higher education declined in Chile in the subsequent decades as a consequence of policies aiming to expand enrolment at this level. Among these, I suggest that student support policies have played a central role. Specifically, the different loan regimes presented in Chapter 5 are key to understanding the exceptionality of the Chilean case within the Latin American region. Especially, considering the country has focused the democratisation of access to higher education on the increasing democratisation of student loans to cover tuition fees. It is important to remember that the country has only recently advanced towards a transition model where gratuity in tertiary education is restricted to students from the three poorest income quintiles who are enrolled in accredited institutions, to cover the tuition fees of reference determined by the Ministry of Education. Furthermore, politicians and policymakers have justified the successive loan regimes, claiming that loans have opened the doors to social mobility for more than 1.2 million students (Arango, 2016).

Bearing in mind that previous chapters examined whether the expansion of higher education has affected inequality by social origins in attendance between 1992 and 2002, the objective of this one is to explore what has happened in this regard afterwards. To do so, I address the following research questions: *Did inequality by social origins in higher education attendance change in Chile after 2002? If so, how have the components of social origins been affected? Is it possible to relate these changes (if any) to the student loan regimes introduced after 2002?*

To answer these research questions, I apply the methodological design presented in Chapter 5, which, in turn, replicates one of the first parts of this thesis but with a different dataset: specifically, the coresidence approach is applied to the CASEN surveys conducted after 2002 (versions 2003, 2006, 2009, 2011, 2013, 2015, and 2017). To the best of my knowledge, CASEN corresponds to the most used survey in social research in Chile, due to its national representation and the broad range of indicators on household and living conditions. In this sense, I opted to work with it because it allowed me not only to replicate the methodological

strategy, but also to update and extend the indicators used to define social origins and the number of demographic and household controls.

A research endeavour such as this is not exempt from limitations considering the criticism attached to the coresidence approach. Nonetheless, it is also relevant to social stratification and policy research. For the field of social stratification, this chapter seeks to provide and test a more comprehensive and up-to-date definition of social origins, considering that existent literature limits them to parental educational attainment. Additionally, this piece also aims to continue the exploration of the role of institutional settings in educational stratification, now examining the effect of the different loan regimes established in Chile after 2002. Both contributions, to the best of my knowledge, are two of the novelties presented in this thesis, as there is no published research that has explored these matters.

From the perspective of policymaking, this piece includes the presentation of useful knowledge for the debates to come. The reader must be reminded that no major modifications have been conducted in higher education since the privatisation reform of 1981. In this sense, there are authorities suggesting that there is a pending reform at this level (Valle, 2016). One could expect, then, that in a context of increasing contestation on the current state of higher education, in addition to the rising rates of poverty among the young and student indebtedness during the COVID-19 pandemic, it is crucial to examine evidence of the role that institutional settings play in educational stratification.

After this introduction, the chapter proceeds as follows: the second part provides a general overview of the existing literature on inequality by social origins in higher education in Chile. Moving on, the third section presents the general expectations. The fourth part includes the main results, both descriptive and multivariate statistics. Finally, the main conclusions are presented, including some policy implications and recommendations for further research.

6.2. PAST RESEARCH

Previous chapters show that social origins do matter in higher education attendance across Latin America, both before and after its expansion. They also provide evidence of the role of institutional settings in this scenario: countries with high privatisation exhibit that household economic resources have increased their importance in the likelihood of access or transition to higher education. Within this group, Chile emerges as an exception, being the only country where this trend is combined with a significant reduction in the effect of parental

sociocultural resources, which, in turn, is reflected in the increasing probability of higher education attendance for all social groups. It is worth wondering, then, to what extent these trends have been maintained through time or not. Have the changes in the higher education system reinforced, weakened, or maintained the effect of social origins in attendance after 2002? To shed some light on the potential scenarios, let us revise the available literature on the Chilean case.

Studies point out that trends in upper secondary graduation are an important factor to consider when addressing inequality in higher education attendance. In the case of Chile, persistent inequality has been reported in secondary graduation rates, with marked gaps by gender, zone of residence, and socioeconomic groups. In this way, most barriers to entering higher education are reported at lower levels of education, in terms of unequal access to good quality secondary education (Torche, 2005; Forest & Altbach, 2007; Noël López, Elizalde, & Rolando, 2015; Avitabile, 2017; SIES, 2020). The share of secondary graduates has not only grown, but their willingness to pursue a higher education degree in a context where the number of seats at this level has also expanded. One could ask, then, to what extent might the recent expansion have changed these differences or reinforced them in tertiary education?

To the best of my knowledge, there is just a handful of studies which have addressed inequality by social origins in higher education: two of them are centred on the specificities of the Chilean case (Sevilla Encinas, 2018; Torche, 2005a), while the other four consider Chile within the international context (Hout, 2006; Neidhöfer et al., 2017; Pfeffer, 2008; Torche, 2010). What all these studies have in common is the use of cross-sectional data and working with a definition of social origins limited to parental educational attainment. In addition, it is important to highlight that none of these investigations includes loan regimes in their analysis.

Past research confirms that social origins do matter in higher education attendance, and that their effect has remained stable over time. Notwithstanding the differences between the methodologies in use, the effect of parental education shows no significant variations between the 1970s and 2010s (Hout, 2006; Neidhöfer et al., 2017; Pfeffer, 2008; Torche, 2005a). It is important to note that this stable effect is conditional on upper secondary graduation (Torche, 2005a), and is also weaker than the one displayed in upper secondary graduation (Sevilla Encinas, 2018). This means that important socioeconomic barriers remain at lower levels of education, influencing, in turn, the opportunities not only to enter higher education, but also to access to certain tracks and institutions.

The aforementioned differences, according to these studies, confirm that the effect of social origins varies between strata: it is stronger among those located at the bottom and the top of the social ladder, stimulating a pattern of inequality driven by the top (Neidhöfer et al., 2017). Acknowledging that expansion contributed to an increase in educational mobility among those with low-educated parents, it is necessary to mention that it has not changed the ability of those with highly-educated parents to keep the best opportunities for themselves. For example, the effect of social origins is stronger in access to university than to vocational institutions (Sevilla Encinas, 2018). The reader must be reminded that there are important differences in selectivity and type of programmes offered by the two. The fact that there are stronger barriers to accessing the former indicates that the likelihood of entering university increases as parental educational attainment also rises, probably diverging those with less-advantaged backgrounds to lower-quality tracks and institutions.

Now, past research provides evidence to support the idea that both the MMI (Hout, 2004, 2006; Raftery & Hout, 1985) and EMI (Lucas, 2001, 2009) approaches apply in the Chilean case. On the one hand, studies show that inequality by social origins has remained stagnant when evaluating general higher education attendance: that is, without distinguishing between tracks and institutions, but considering tertiary education as an unitarian system. This persistence is aligned with the prediction exposed by the MMI approach, which is that inequality is unlikely to decline unless saturation is reached at the level under expansion. On the other hand, studies also show that inequality has increased when examining the role of social origins in track and institutional attendance: that is, when comparing educational quality within higher education. These findings are in line with what the EMI hypothesis states, suggesting that qualitative inequality might increase in scenarios where inequality in access to a certain level remains stagnant or even decreases.

Despite the undeniable contribution that previous studies have made to the understanding of educational stratification in Chile, the truth is that none of them addresses the timeframe proposed in this chapter. Therefore, some questions remain pending. For example, what is the effect of household economic resources not only on general higher education attendance, but also on the access to different tracks and institutions? Have the student loan regimes affected the role of social origins on these? Have the gaps between social groups varied? These are some of the queries that this piece aims to address.

6.3. EXPECTATIONS

Now that past research on inequality by social origins in higher education attendance in Chile has been reviewed, and commonalities with the predictions stated by the MMI and EMI approaches, I shall proceed by detailing the theoretical expectations behind this chapter. Before doing so, it is important to point out the use of the term *"expectations"* instead of *"hypotheses"* due to the exploratory character of this research.

Moving on to the expectations themselves, the first of them states that social origins do matter in higher education attendance. In this way, past research suggests that the question is not whether social origins and higher education are related, but to what degree they are associated and to what extent the changes introduced in the student loan regime might have affected this relationship. Therefore, it is also possible to expect that the effect of social origins is not the same when analysing track and institutional attendance. Following the findings of Sevilla-Encinas (2018) and Torche (2005a, 2010), a more significant role in access to universities rather than to vocational institutions is expected to be found.

The second expectation refers to the latter point, claiming that the role of the components of social origins in higher education attendance were differently affected by expansion after 2002. Regarding the effect of parental sociocultural resources, past research shows that it has remained stagnant despite the important differences between methodologies. However, these studies do not consider the timeframe after 2002, a period under which enrolment drastically grew despite increasing contestation in higher education. Therefore, in addition to the findings reported in the first part of this thesis, a decreasing effect in the role of parental education on higher education attendance is expected to be reported in the next chapter. Now, regarding the effect of household economic resources on higher education attendance, one could suggest that it has changed due to the introduction of different student loan regimes. The reader must be reminded that Fondo Solidario and CAE were considered policy tools to democratise access to higher education, incentivising enrolment among less affluent sectors, who were previously excluded due to their inability to cover tuition fees. Specifically, a significant and increasing effect of economic resources on attendance is expected to be found after 2006, once CAE became available to all students enrolled in accredited institutions.

The third expectation is related to the effect of social origins on track and institutional attendance and can be divided in two parts. On the one hand, one could suggest that the effect

of parental sociocultural resources on both track and institutional attendance has decreased because of the impressive growth in enrolment experienced in Chile after 2002.

On the other hand, however, the effect of economic resources has not been reduced in all cases. In this way, one could expect that the changes in the student loan regime have not affected access to all types of institutions equally. The reader must remember that loan democratisation meant that they became available to all students enrolled in an accredited institution with the amount of funds to cover their tuition fees only. Therefore, it is possible to propose that Fondo Solidario and CAE have not incentivised enrolment across the whole institutional spectrum, benefiting private universities and IPs mostly. In this sense, a declining effect of economic resources is expected to be found on access to these institutions only, but not on attendance at the extremes of the selectivity ladder: that is, CRUCH universities and CFTs.

In the case of CRUCH universities, the most selective institutions in the Chilean higher education system, past research has reported stronger effects of social origins on access because it is restricted to students' results in the university entrance examination and the grades obtained throughout secondary education.

In the case of CFTs, the least selective institutions of the system, the effect of economic resources is expected to remain stable because the changes in the student loan regime have not modified their enrolment pattern. The limited scope of policy tools such as Fondo Solidario and CAE – aiming to cover tuition fees only – does not transform them into an incentive to boost enrolment in CFTs due to two potential reasons: most of these institutions have not accredited their academic quality, hence, their students are not eligible for the loan regime. Second, because these students – usually from a poor socioeconomic background – might not consider attending a CFT a strong enough incentive to remain in education, and they would prioritise attending a more selective institution (that is, a CRUCH university) when considering whether to continue to higher education.

In dialogue with the main approaches developed to understand educational stratification in contexts of expansion, the expectations describe above can be summarised as follows: in the case of contemporary Chile, a country with a model of expansion based upon increasing privatisation, changes introduced in the loan regimes might have been enough to cause a decline in quantitative inequality in higher education, but not to overcome qualitative inequality within this sector.

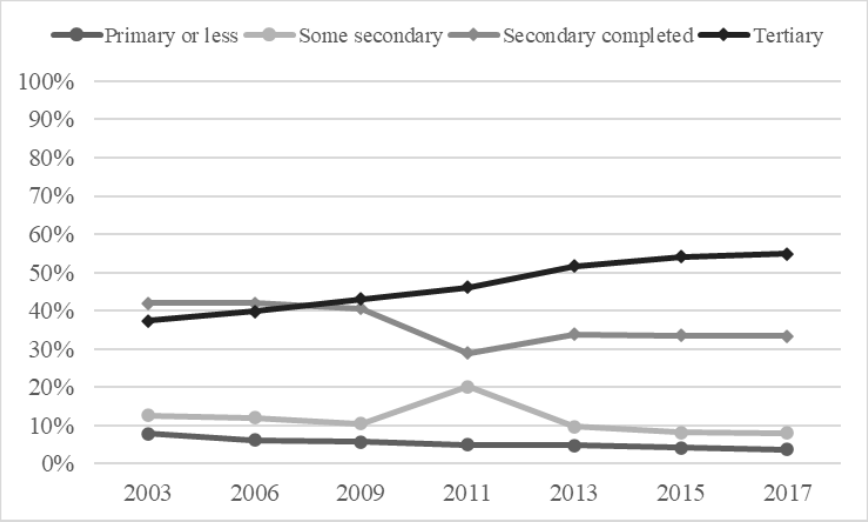
6.4. RESULTS

Now that the general expectations articulated in this chapter have been explained, I shall proceed with the presentation of both descriptive and multivariate analyses. It is noteworthy to restate that findings are presented from a general to a specific perspective, addressing general higher education attendance before moving towards track and institutional attendance.

6.4.1. Descriptive analyses

Let us start with a general contextualisation of educational attainment for the group of coresidents aged between 18 and 24 years in Chile after 2002. Figure 1 shows that it has significantly increased between 2003 and 2017. There is a consistent reduction in the proportion of coresidents with a low level of education and a persistent growth in the share of those with completed secondary and tertiary education (either complete or incomplete). Furthermore, the irregular evolution of secondary education in 2011 must be highlighted as it indicates a breaking point. The reader must be reminded that in 2010 the three major Metropolitan areas were affected by an earthquake, with important consequences in terms of human development. One of these consequences, one could argue, is the variation shown in Figure 1 for secondary education. Despite this, Table 1[37] illustrates that the average years of education has steadily grown through time, oscillating from 12.2 in 2003 to 13.0 in 2017.

Figure 1. Evolution in educational attainment (proportions) among coresidents (aged between 18 and 24) in Chile between 2003 and 2017.



Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations)

[37] For descriptive statistics by gender, please see Appendix 9.

Table 1. Evolution in the average years of education among coresidents (aged between 18 and 24) in Chile between 2003 and 2017.

CASEN	2003	2006	2009	2011	2013	2015	2017
Years of education	12.2	12.4	12.6	12.7	12.8	12.9	13.0

Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Considering the potential bias arising from the coresidence approach, I decided to compare the estimations presented in Figure 1 with the educational attainment of the general population aged between 18 and 24 years in the census of 2017. There is a gap of around 15 percentage points in favour of coresidents when compared with the share of the general population with tertiary education within the same age range (38 percent)[38,39]. This indicates that young individuals with access to higher education might be overrepresented in the sample. It could be argued that coresidence rates might have increased among "young adults" as a consequence of expansion itself: it is becoming more common due to the increasing number of available alternatives to attend higher education close to the parental home, or because the costs related to attendance (i.e. tuition fees and other expenses) might have delayed nest-leaving (Ferreyra, 2017).

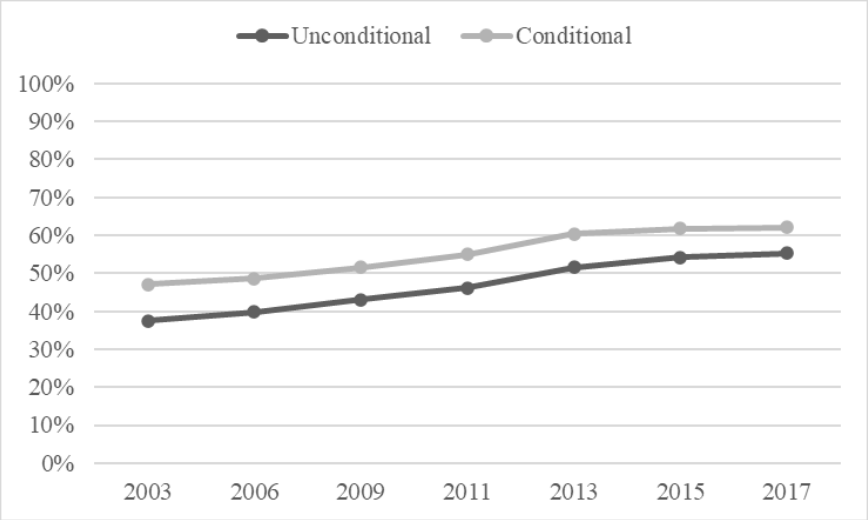
Moving on to the characterisation of general higher education attendance, Figure 2 illustrates its evolution between 2003 and 2017, applying the unconditional and conditional approaches. As could be expected, there are differences between these two, with the unconditional approach replicating the trend exhibited in Figure 1 and the conditional approach showing a higher proportion in higher education attendance in every year considered. In other words, the differences between the unconditional and conditional approaches indicate that the recent expansion has increased transition rates from upper secondary to tertiary education to a greater extent than it has boosted attendance rates across coresidents regardless of their educational attainment. This is the case for each of the CASEN versions considered, with a consistent growth in conditional higher education attendance, surpassing 60 percent in 2017.

Now, the gap between approaches has tended to shrink since 2015, from 10 to around 5 percent. One could suggest that this reduction is mainly driven by a stagnation in the proportion of conditional attendance, possibly due to the hardening of the socioeconomic barriers between upper secondary and tertiary education. This *plateau* might indicate persistent, or even increasing, inequality in the transition from upper secondary to tertiary education. This is one

[38] The proportion with primary education was equivalent to 7 percent, and with secondary education (either complete or incomplete) to 55 percent.
[39] Author's elaboration based on REDATAM, ECLAC.

of the possibilities that Torche (2010) discusses for the case of secondary education in Chile in the 1980s: not only did quantitative inequality in higher education increase with fewer – or, in this case, with stagnant – transitions to this level, but qualitative inequality also grew as a result of the privatisation reform.

Figure 2. Evolution in the proportion of coresidents (aged between 18 and 24) who have ever attended higher education in Chile between 2003 and 2017 (unconditional and conditional approaches).



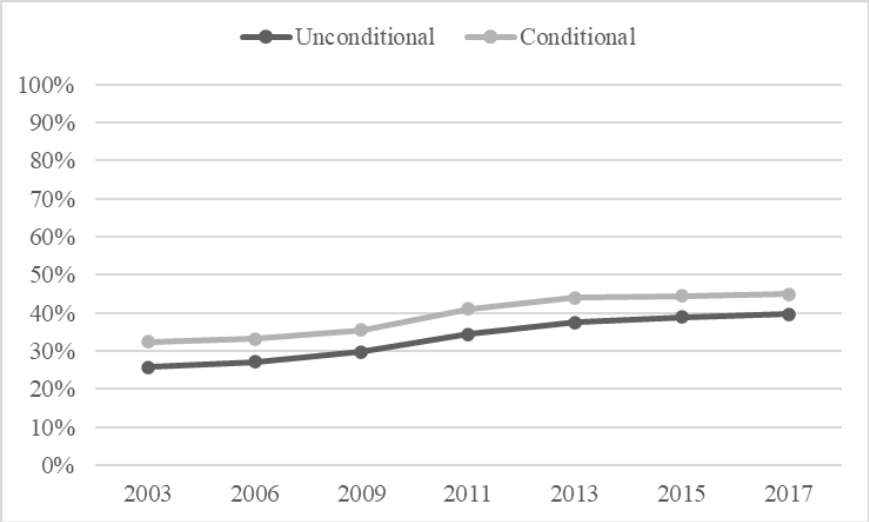
Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

In order to test Torche's argument in the case of higher education after 2002, I shall explore unconditional and conditional rates in track attendance. The reader must be reminded that most enrolment in higher education is concentrated in private institutions, with the vocational tier being entirely privatised since the 1981 reform. Figures 3 and 4 present the evolution of the university and vocational tiers, respectively. In both figures, conditional attendance is higher than unconditional attendance, signalling that an increasing proportion of secondary graduates are transitioning to higher education regardless of track. Furthermore, regardless of the year or the approach, the proportion of coresidents who have ever attended university is higher than the share of their peers who have ever attended the vocational tier.

Now, there are two important differences between figures: One refers to the gap between approaches, which is always wider in the university track than in the vocational tier. This might suggest that the barriers between secondary and tertiary education are more significant than those in the transition to vocational postsecondary education. The other difference refers to the growth in attendance rates: whereas attendance at university track grew between 2003 and 2013, before arriving at a *plateau* this year, vocational attendance rates remained stagnant throughout the period.

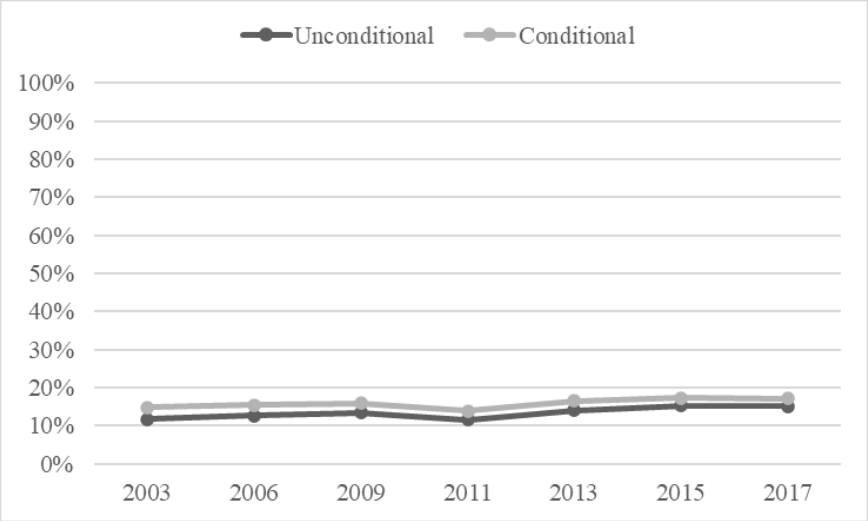
Figures 3 and 4 demonstrate that expansion has favoured the growth of the university sector over the vocational tier. In this way, it could be useful to remark that higher education attendance has risen as the result of an increasing number of upper secondary graduates as well as the growth of university supply. The latter has been favoured by the student loan regime as most accredited institutions correspond to universities. On the contrary, to the best of my knowledge, there have been no policies aimed at incentivising enrolment in vocational institutions. This imbalance between tiers might suggest that even in a scenario where quantitative inequality might have decreased, qualitative inequality might have increased.

Figure 3. Evolution in the proportion of coresidents (aged between 18 and 24) who have ever attended the university track in Chile between 2003 and 2017 (unconditional and conditional approaches).



Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Figure 4. Evolution in the proportion of coresidents (aged between 18 and 24) who have ever attended the vocational track between 2003 and 2017 in Chile (unconditional and conditional approaches).

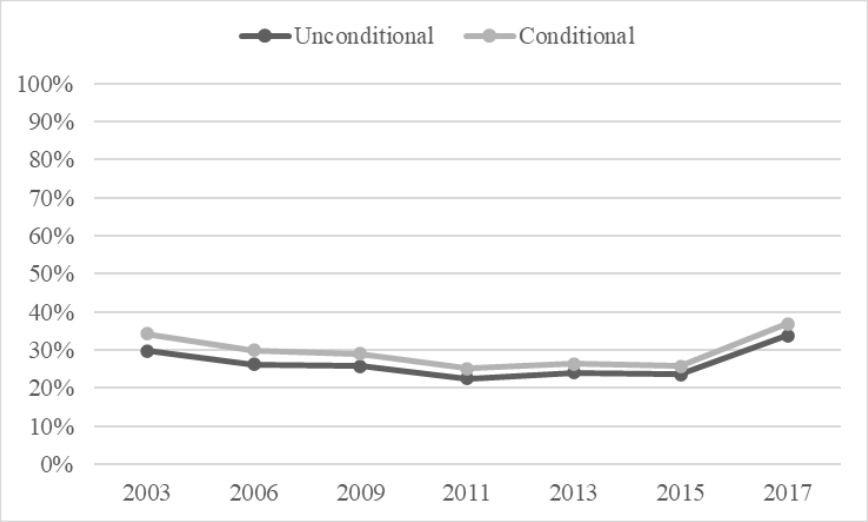


Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations)

Now that differences by track have been confirmed, Figures 5, 6, 7, and 8 present the evolution of institutional attendance rates between 2003 and 2017, ranging from the most to the least selective institution. Gaps between unconditional and conditional attendance are observed regardless of the type of institution, with much wider gaps in the case of CRUCH universities than the rest. In fact, the gap tends to reduce with the degree of institutional selectivity, being almost non-existent in the case of CFTs. These observations indicate that expansion might have had a different effect on the access barriers of each of these institutions, either by incentivising the growth of some institutions over others or boosting enrolment in some of them through modifications in the application processes, type of programmes offered, or in the student loan regime.

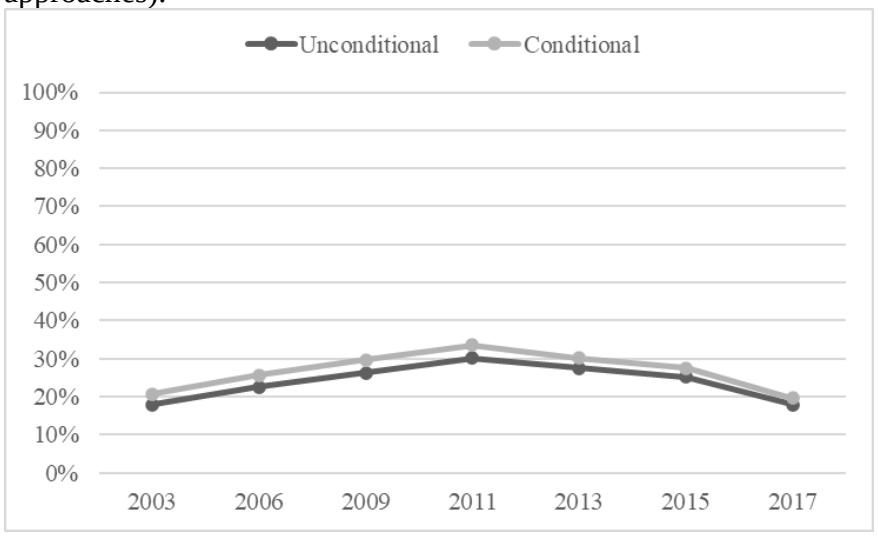
Regarding the evolution of attendance rates, in the case of IPs and CFTs, they remained stagnant between 2003 and 2017, with a very slight increase among the former towards the end of the period. On the contrary, the evolution of attendance among CRUCH and private universities show some complementary variations. The proportion of coresidents attending CRUCH universities was around 30 percent in 2003, but then started a decline that lasted until 2015, after which it grew again to around 40 percent. In the meantime, the share of respondents attending private universities started at around 20 percent in 2003, then steadily grew until 2015, after which it decreased to its starting level. The complementary character of these variations might have been influenced by the changes introduced in the student loan regime, which diversified the type of institutions whose students became eligible for this policy.

Figure 5. Evolution in the proportion of coresidents (aged between 18 and 24) who have ever attended CRUCH universities when surveyed in Chile between 2003 and 2017 (unconditional and conditional approaches).



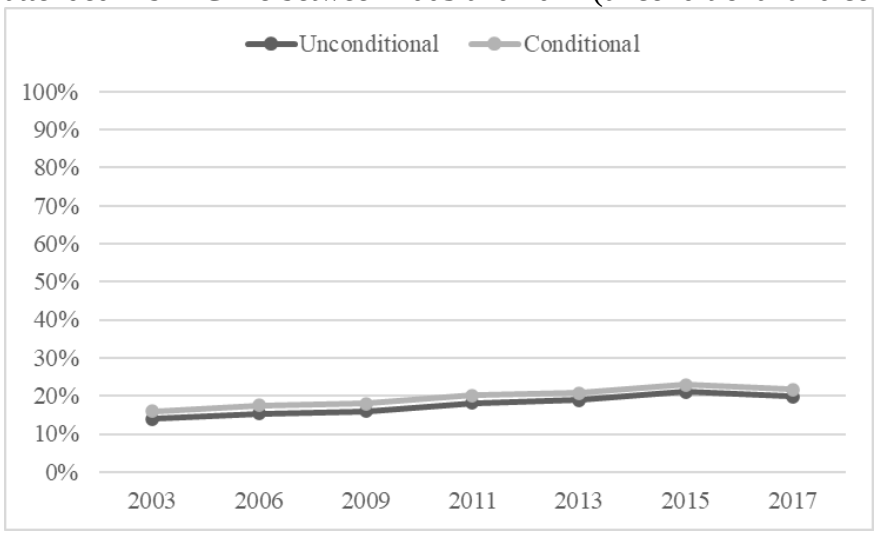
Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Figure 6. Evolution in the proportion of coresidents (aged between 18 and 24) who have ever attended private universities in Chile between 2003 and 2017 (unconditional and conditional approaches).



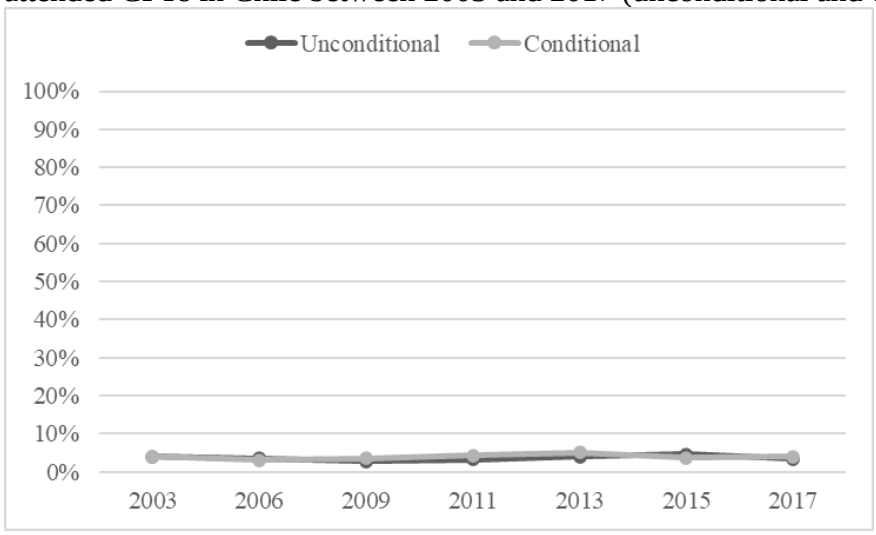
Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Figure 7. Evolution in the proportion of coresidents (aged between 18 and 24) who have ever attended IPs in Chile between 2003 and 2017 (unconditional and conditional approaches).



Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

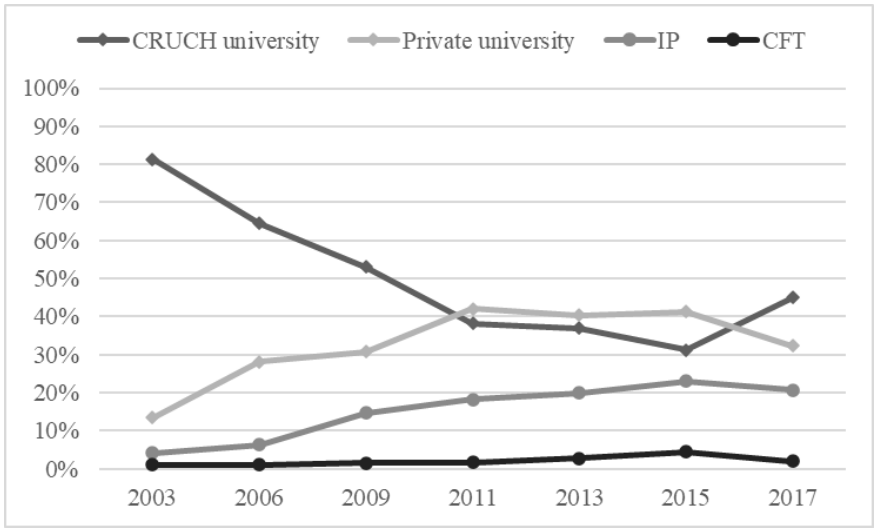
Figure 8. Evolution in the proportion of coresidents (aged between 18 and 24) who have ever attended CFTs in Chile between 2003 and 2017 (unconditional and conditional approaches).



Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

The complementary variations in the evolution of attendance rates in CRUCH and private universities among coresidents are evident in Figure 9. This presents the evolution in the proportion of coresidents who were undertaking and who held a student loan when surveyed between 2003 and 2017. The university tier possesses a concentration of students with loans, with most of them enrolled in CRUCH universities at the beginning and the end of the period. With the modifications introduced in the student loan regime in 2006, private universities benefited from these changes with most of the students with loans concentrated in these institutions until 2015.

Figure 9. Evolution in the proportion of coresidents (aged between 18 and 24) with a student loan and who were attending higher education by type of institution in Chile between 2003 and 2017.



Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Previous figures allow for the suggestion that not only might expansion have affected inequality in higher education attendance, but also the changes introduced in the loan regime. In this way, both processes might have helped to reduce or to maintain quantitative inequality as both the number of secondary graduates and the number of seats in higher education rose. Additionally, these processes might also have contributed towards increasing qualitative inequality, as expansion and the loan regime have boosted enrolment in certain institutions only. These differences are evident in the gaps between unconditional and conditional attendance, which highlight that there are barriers (of different 'sizes') in the transition to certain tracks and institutions. Previous figures, however, do not indicate whether expansion and the modifications in the loan regime have changed the effect of social origins on attendance. These issues, precisely, are the ones addressed in the next section.

6.4.2. Multivariate analyses

The main objective of this chapter is to explore whether the recent expansion has changed the effect of social origins on higher education attendance in Chile after 2002. The potential changes are evaluated in comparison with the trends presented in previous chapters, where expansion has contributed towards the decreasing effect of parental education and the increasing effect of economic resources on the general higher education attendance. To achieve this goal, I utilised logit and multinomial regression models to evaluate the role of social origins on general higher education attendance, track attendance, and institutional attendance between 2003 and 2017. In dialogue with past research, quantitative inequality is explored through the estimations regarding general higher education attendance, whereas qualitative inequality, through the estimations concerning track and institutional attendance. Tables 2 and 3 present the main effect models for each of the dependent variables, applying the unconditional approach and the conditional approach, respectively. The reader must be reminded that coefficients are interpreted based upon three criteria: the sign of the relationship, the strength of the relationship, and the statistical significance of this relationship.

Starting with general higher education attendance, coefficients show that all components of social origins display a positive and statistically significant effect: that is, students from more privileged backgrounds – either sociocultural or economic – are more likely to access higher education. Moreover, the likelihood of higher education attendance has increased during the recent expansion, considering both general attendance (unconditional approach) and the transition from upper secondary to tertiary education (conditional approach).

Moving on towards the evaluation of attendance by tier, coefficients confirm that expansion has increased the likelihood of higher education attendance, regardless of the type of tier. Additionally, social origins do play a positive role in the likelihood of enrolment in either university or vocational tier. Nevertheless, the effect of social origins is stronger on university attendance than on vocational, which is in line with the findings reported by Sevilla-Encinas (2018).

Regarding institutional attendance, differences begin to arise. In the transition from the democratisation period and the accountability, no statistically significant differences are observed in the likelihood of access to CRUCH universities. However, a point must be noted: when comparing the democratisation period to 2003, inequality of opportunity declined throughout the spectrum, including CRUCH universities. Now, this is not the scenario during the period of accountability, where no positive and statistically significant changes are observed in the rest of the institutional spectrum. This is also the case for parental education, highlighting that those students with more educated parents are more likely to transition to tertiary education. On the contrary, there are disparities in the role that economic resources play throughout the institutional spectrum, as they are only positive and statistically associated with access to universities. In this sense, household income and home ownership do not play a significant role in the transition to IPs or CFTs.

It is relevant to note that all control variables behave as expected. In line with the control variables reported in the previous chapter, the likelihood of higher education attendance prevails among women and increases with age. On the contrary, the likelihood decreases for students with larger families and those who reside in one-parent homes or female-headed households. Regarding the new control variables, results show that indigenous background is not statistically significant, in line with the findings reported by Torche (2005a), and indicating a Chilean exceptionality within the Latin American context. In addition, coefficients reveal that residing in one of the major the three urban areas is significant in the likelihood of attendance, in contrast with urban residence, providing new clues for the understanding of centralisation in contemporary Chile.

From the above, it is possible to argue that the first theoretical expectation has been confirmed: expansion has increased the likelihood of higher education attendance, and social origins play a positive role in this matter. This is the case when evaluating general and track attendance. Nonetheless, there are differences when distinguishing access to different institutions. On the

one hand, the recent expansion has not increased the likelihood of access to CRUCH universities, regardless of whether we are looking at unconditional or conditional attendance. On the other hand, expansion has increased the likelihood of attending private universities, IPs, and CFTs, although not all components of social origins are statistically significant.

Table 2. Logit and multinomial regression models (coefficients and p values) for *higher education attendance, track attendance, and institutional attendance* (Model 1) for coresidents (aged between 18 and 24) in Chile between 2003 and 2017 (unconditional approach).

MODEL 1 MAIN EFFECTS	**UNCONDITIONAL APPROACH**						
	General attendance	**Track attendance**		**Institutional attendance**			
	Higher education	University track	Vocational track	CRUCH universities	Private universities	IPs	CFTs
SURVEY YEAR							
CASEN year	.034***	.035*	.028**	.003	.015**	.098***	.065**
PARENTAL SOCIOCULTURAL RESOURCES							
Parental education	.361***	.446***	.169***	.496***	.415***	.198***	.124***
PARENTAL ECONOMIC RESOURCES							
Home ownership	.128***	.171***	.036	.214***	.138***	.103**	-.019
Household assets (index)	.466***	.512***	.381***	.526***	.533***	.385***	.226***
Household income	.268***	.353***	.088***	.229***	.494***	.042	.059
CONTROL VARIABLES							
Gender	-.617***	-.651***	-.543***	-.595***	-.770***	-.430***	-.605***
Age	.380***	.396***	.347***	.347***	.363***	.292***	.248***
Indigenous background	-.008	-.031	.030	-.057	-.013	.013	.033
Urban zone	.004	.036	.026	.022	.026	-.030	.045
Metropolitan area	.043*	.115***	.092**	.379***	.024	.286***	-.011
Family size	-.194***	-.216***	-.152***	-.201***	-.242***	-.135***	-.171***
Two-parent household	.281***	.329***	-.104	.339***	.305***	-.140	.199
Female head of the household	-.055***	-.026	-.125*	.029	-.129*	-.135*	.008
N	133,902	133,902	133,902	124,766	124,766	124,766	124,766

** p<0.05; ** p<0.01; ***p<0.001*

Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Table 3. Logit and multinomial regression models (coefficients and p values) for *higher education attendance, track attendance, and institutional attendance* (Model 1) for coresidents (aged between 18 and 24) with completed upper secondary in Chile between 2003 and 2017 (conditional approach).

MODEL 1 MAIN EFFECTS	**CONDITIONAL APPROACH**						
	General attendance	**Track attendance**		**Institutional attendance**			
	Higher education	University track	Vocational track	CRUCH universities	Private universities	IPs	CFTs
SURVEY YEAR							
CASEN year	.047***	.051**	.043***	.017	.003**	.112***	.078***
PARENTAL SOCIOCULTURAL RESOURCES							
Parental education	.330***	.416***	.133***	.468***	.386***	.164***	.180***
PARENTAL ECONOMIC RESOURCES							
Home ownership	.107***	.148***	.016	.189***	.113**	.082	-.041
Household assets (index)	.376***	.423***	.282***	.439***	.449***	.288***	.132*
Household income	.221***	.304***	.037**	.181***	.448***	-.006	.008
CONTROL VARIABLES							
Gender	-.482***	-.521***	-.399***	-.468***	-.645***	-.291***	-.461***
Age	.370***	.385***	.339***	.335***	.350***	.281***	.236***
Indigenous background	-.004	-.028	.032	-.054	-.011	.014	.036
Urban zone	.011	.032	.026	.015	.021	-.022	.049
Metropolitan area	.048*	.120***	.090**	.383***	.019	.285***	-.013
Family size	-.153***	-.176***	-.107***	-.163***	-.204***	-.090***	-.125***
Two-parent household	.311***	.362***	.124	-.378***	.344***	.165*	.228
Female head of household	-.065	-.037	-.132*	.017	-.144**	-.145*	-.001
N	108,399	108,399	108,399	99,211	99,211	99,211	99,211

** p<0.05; ** p<0.01; ***p<0.001*

Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

The next step, then, is to test whether the effect of social origins has changed due to the modifications introduced to the student loan regime since 2003. To do so, I apply the distinction of three different regimes within the phase of contested expansion, which were described in Chapter 5. An *initial regime* was identified in the early 2000s, during which either Fondo Solidario or CORFO loans changed their conditions. Then, a *democratisation regime* took place between 2006 and 2011, during which CAE was created and all loans expanded their targeting: not only did university students become eligible for the system, but all students enrolled in accredited institutions, regardless of their private/public or university/vocational character. Finally, it is possible to identify an accountability regime from 2012 onwards, the aim of which is to increase regulation within higher education after numerous corruption scandals and increasing social mobilisation against profitmaking.

Tables 4 and 5 present the interaction effects between the components and social origins and different loan regimes identified for the period between 2003 and 2017. It is worth mentioning that Table 4 displays the coefficients obtained through the unconditional approach, whereas those calculated through the conditional approach can be seen in Table 5. Before being presented with the results, the reader must be warned that the democratisation regime was used as reference because all the changes of interest took place during this stage.

To begin with, it is noteworthy that the likelihood of attendance has increased after the democratisation of loans, regardless of the type of track or institution. This increase is evident in both the unconditional and conditional likelihood of attendance. Nevertheless, coefficients obtained in the estimation of institutional attendance must be highlighted: specifically, the likelihood of accessing CRUCH universities is significant at a less restrictive level of confidence. This means that attendance has been affected to a lesser extent than it has for the other higher education institutions. One of the reasons might be the selectivity mechanisms associated with the national university entrance examination and other CRUCH regulations.

Let us now turn our attention to whether the democratisation of loans has changed the effect of the different components of social origins. Regarding parental education, no statistically significant variations are observed in any of the types of attendance under scrutiny. However, the story is different regarding economic resources. On the one hand, no statistically significant variations are observed in the effect of home ownership, apart from the case of conditional transition to CRUCH universities. In this case, the role of household assets and income increased their effects on the likelihood of attendance after loan democratisation. On the other

hand, the effect of household assets significantly decreased only in access to the university track, either CRUCH or private universities, regardless of the type of attendance (either unconditional or conditional). In the case of household income, its effect significantly decreased regarding access to private universities, IPs, and CFTs, without modifications in its effect on CRUCH university attendance.

Results presented in Tables 4 and 5 confirm the second theoretical expectation: that is, the effect of the components of social origins on higher education attendance has been different after 2002. Furthermore, coefficients confirm that the likelihood of higher education attendance has increased through the system after the democratisation of loans in 2006. Nevertheless, the third expectation can only be partially confirmed. On the one hand, the modifications to the loan regime did not affect the role that parental education plays in attendance, which is the finding that departs from the decreasing effect described in previous chapters. The reader must be reminded that the phase under study in the first part of this thesis corresponds to the one of early expansion, which took place between 1991 and 2002. On the other hand, results indicate that the increased likelihood of attendance is driven by a significant decline in the effect of household income on access to private universities, IPs, and CFTs. Again, CRUCH universities deviate from the general trend, in the sense that the democratisation of student loans did not affect the role that social background plays in access. On the contrary, the effect of home ownership even experienced a growth.

From the above, it could be argued that the recent expansion has led to declining inequality in general higher education attendance but increasing inequality in institutional attendance. In other words, this means that the likelihood of accessing higher education has grown in spite of the growing inequality between institutions. The democratisation of loans, despite being originally aimed at boosting access to universities, did not change the effect of economic resources on the transition to CRUCH universities, even though it lessened this effect on access to less selective institutions: private universities, IPs, and CFTs. These findings suggest that the persistent character of inequality is driven by the maintenance of privileges at the top of the social ladder, as Neidhöfer et al. (2017) described for Latin America. In this sense, it could be possible that this is the case for Chile regarding inequality by social origins in higher education attendance.

Table 4. Logit and multinomial regression models (coefficients and p values) for *higher education attendance, track attendance, and institutional attendance* including interaction effects between *social origins* and the *student loan regimes* within the phase of contested expansion (Model 2) for coresidents (aged between 18 and 24) in Chile between 2003 and 2017 (unconditional approach).

MODEL 2 INTERACTION EFFECTS	**UNCONDITIONAL APPROACH**						
	General attendance	**Track attendance**		**Institutional attendance**			
	Higher education	University track	Vocational track	CRUCH universities	Private universities	IPs	CFTs
LOAN REGIME							
Initial (2003)	-5.405***	-6.393***	-4.251***	-5.754***	-9.305***	-5.756***	.003
Accountability (2013-2017)	3.066***	3.338***	2.380***	1.401*	3.774***	3.377***	4.579***
INTERACTION EFFECTS							
LOAN REGIME * PARENTAL EDUCATION							
Initial * Parental education	.279***	.307***	.287***	.277***	.382***	.365***	-.160
Accountability * Parental education	-.021	-.030	-.014	-.015	-.006	-.006	-.088
LOAN REGIME * HOME OWNERSHIP							
Initial * Home ownership	-.071	-.161	.097	-.085	-.277	.064	-.052
Accountability * Home ownership	.057	.049	.066	.150*	-.069	.061	.387
LOAN REGIME * HOUSEHOLD ASSETS (INDEX)							
Initial * Household assets	-.015	-.064	.062	-.094	-.135	.102	.449
Accountability * Household assets	-.185***	-.194**	-.183***	-.190	-.284***	-.106	-.073
LOAN REGIME * HOUSEHOLD INCOME (LOG)							
Initial * Household income	.329***	.401***	.230***	.394***	.581***	.289***	.033
Accountability * Household income	-.172***	-.187**	-.124**	-.056	-.215***	-.208***	-.292***
N	133,902	133,902	133,902	124,766	124,766	124,766	124,766

** p<0.05; ** p<0.01; ***p<0.001*

Note: All control variables are included. Models estimated with democratisation regime (2006-2011) as reference.

Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Table 5. Logit and multinomial regression models (coefficients and p values) for *higher education attendance* including interaction effects between *social origins* and the *student loan regimes* within the phase of contested expansion (Model 2) for coresidents (aged between 18 and 24) with completed upper secondary in Chile between 2003 and 2017 (conditional approach).

MODEL 2 INTERACTION EFFECTS	**CONDITIONAL APPROACH**						
	General attendance	**Track attendance**		**Institutional attendance**			
	Higher education	University track	Vocational track	CRUCH universities	Private universities	IPs	CFTs
LOAN REGIME							
Initial (2003)	-5.118***	-6.180***	-3.889***	-5.494***	-9.250***	-5.478***	.344
Accountability (2013-2017)	3.122***	3.458***	2.518***	1.482*	3.863***	3.481***	4.671***
INTERACTION EFFECTS							
LOAN REGIME * PARENTAL EDUCATION							
Initial * Parental education	.252***	.277***	.270***	.246***	.347***	.346***	-.175
Accountability * Parental education	-.019	-.029	-.013	-.012	-.004	-.003	-.086
LOAN REGIME * HOME OWNERSHIP							
Initial * Home ownership	-.046	-.128	.109	-.049	-.235	.079	-.042
Accountability * Home ownership	.049	.043	.055	.145	-.074	.049	.373
LOAN REGIME * HOUSEHOLD ASSETS (INDEX)							
Initial * Household assets	-.019	-.061	.044	-.096	-.112	.102	.414
Accountability * Household assets	-.150***	-.162***	-.121***	-.158	-.254***	-.066	-.038
LOAN REGIME * HOUSEHOLD INCOME (LOG)							
Initial * Household income	.244***	.387***	.202**	.378***	.578***	.266**	.009
Accountability * Household income	-.181***	-.200***	-.140***	-.067	-.226***	-.221***	-.303***
N	108,399	108,399	108,399	99,211	99,211	99,211	99,211

** p<0.05; ** p<0.01; ***p<0.001.*

Note: All control variables are included. Models estimated with democratisation regime (2006-2011) as reference.

Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

To further examine this scenario, I shall proceed by testing whether expansion and the modifications in the student loan regimes have affected social groups differently. To do so, the conditional probabilities of attending different types of higher education institutions are calculated, following the structure presented in the first part of this thesis: a new version of the three main explanatory variables is constructed to create new three-fold categorical variables for parental education and economic resources. Regarding the latter, I opted to keep working with household assets and income, due to the statistically significant variations observed after loan democratisation. The new categorical variables and their descriptive statistics are presented below in Table 6.

Table 6. Construction of the new *three-fold variables* for *parental education. household assets and household income*, and its descriptive statistics (conditional approach).

NEW VERSION	CATEGORIES	N	MIN	MAX	MEAN	SD
Parental education	(1) Parents with a low level of education	136,399	2.460	.614	1	3
	(2) Parents with a medium level of education					
	(3) Parents with a high level of education					
Household assets	(1) Low-asset household	137,006	2.015	.877	1	3
	(2) Middle-asset household					
	(3) High-asset household					
Household income	(1) Low-income household	137,006	2.147	.788	1	3
	(2) Middle-income household					
	(3) High-income household					

Source: Author's elaboration based on CASEN (from 2003 to 2017).

Table 7 presents the interaction effects between the 3-fold variables for parental education, assets, and household income, and the different student loans regimes. It is important to highlight that the middle categories for each of the new three-fold variables were chosen as reference. Therefore, to extent to which the distance between the middle and the bottom groups and the middle and the top might have changed due to loan democratisation is evaluated in five scenarios: higher education attendance and access to the four types of institutions that form the Chilean postsecondary education system. Specifically, conditional attendance is addressed for each of these scenarios, which means focusing only on the predicted probabilities of the sub-sample of coresidents with completed upper secondary.

Regarding general higher education attendance, the distance between the bottom and the middle was reduced after the democratisation of student loans, regardless of the indicator under scrutiny. In other words, the predicted probabilities of those coresidents with parents with primary education increased, which has led to a reduction in the gap between them and their

peers with parents with secondary education. The reader must be reminded that these results are in line with the growing rates in upward educational inequality among the least educated sectors, already reported by Neidhöfer et al. (2017) in several sections of this thesis.

Continuing with the analysis of changes in access but now within the institutional spectrum, it is evident that the democratisation of loans affected the most and least selective institutions differently. On the one hand, no statistically significant variations between social groups are observed in the transition to CRUCH universities, the most selective institutions. This is also the case at the other extreme of the selectivity spectrum but within the vocational tier: there are no significant variations between social groups in the transition to CFTs, apart from a narrowing gap between coresidents from high-income households and their middle-income peers. On the other hand, loan democratisation has reduced differences in access to private universities and IPs, both in sociocultural and economic terms. For example, the gaps narrowed at both ends of the economic distribution regarding access to private universities, signalling a positive effect of loan democratisation on the reduction of inequality between strata. The gap between the middle and the top also narrowed when comparing the distribution of sociocultural resources, both in access to private universities and IPs. For the latter, however, the economic differences are reduced between the middle and the top only, as loan democratisation did not reduce the gap in access between those with parents with a low level of education and their counterparts with parents with secondary education or higher.

Results from above highlight the limitations of loan democratisation as a strategy to democratise higher education attendance. Despite boosting enrolment in higher education and reducing the differences in strata at both ends of the social scale, this is not the situation when evaluating its impact on access to institutions. In this sense, this strategy was not able to reduce the differences between strata in enrolment at either end of the institutional spectrum, as the lack of statistically significant coefficients indicates for the cases of CRUCH universities and CFTs. For those institutions in the middle, differences between strata were reduced at both ends of the distribution in the case of private universities only. These findings are presented in the figures below, which illustrate the differences in the predicted probabilities of attendance within the institutional spectrum.

Table 7. Logit models (coefficients and p values) for *higher education attendance and institutional attendance* including interaction effects between *social origins* and the *different student loan regimes* within the phase of contested expansion (Model 3) for coresidents (aged between 18 and 24) with completed upper secondary in Chile between 2003 and 2017 (conditional approach).

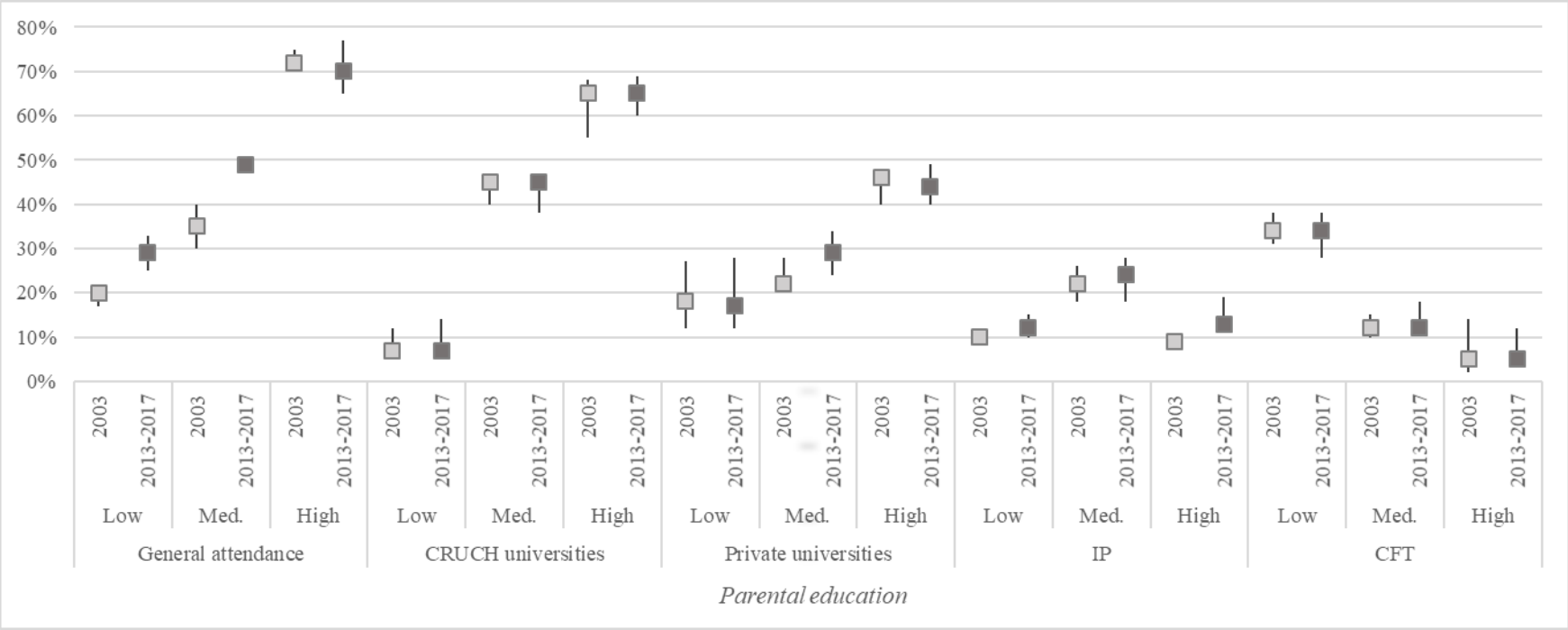
MODEL 3 INTERACTION EFFECTS	**CONDITIONAL ATTENDANCE**									
	Higher education		**CRUCH universities**		**Private universities**		**IPs**		**CFTs**	
	2003	2013-2017	2003	2013-2017	2003	2013-2017	2003	2013-2017	2003	2013-2017
PARENTAL EDUCATION * LOAN REGIME (ref: Democratisation 2006-2011)										
Parents with a low level of education	3.860***	-.125	.089	.104		-.119	-.741	-.055	6.407***	-.099
Parents with a medium level of education (ref)										
Parents with a high level of education	.563***	-.172*	.728***	-.049	-.016	-.221**	.1.406**	-.156**	.366	-.332
HOUSEHOLD ASSETS *LOAN REGIME										
Low-asset home	-.217	.378***	.024	.256	.051	.404***	-.264	.080	.049	.691
Middle-asset home (ref)										
High-asset home	.103	-.144*	.340	.049	-.309	-.323***	.013	-.095	-.367	.100
HOUSEHOLD INCOME * LOAN REGIME										
Low-income household	-.358***	.156**	-.273*	.110	-.147	.402***	-.495***	-.029	.200	.115
Middle-income household (ref)										
High-income household	.611***	-.339*	.352**	-.058	.980***	-.122*	.072	-.335***	-.298	-.503*
N	109,476	109,476	109,476	109,476	109,476	109,476	109,476	109,476	109,476	109,476

** p<0.05; ** p<0.01; ***p<0.001.*

Note: All control variables are included.

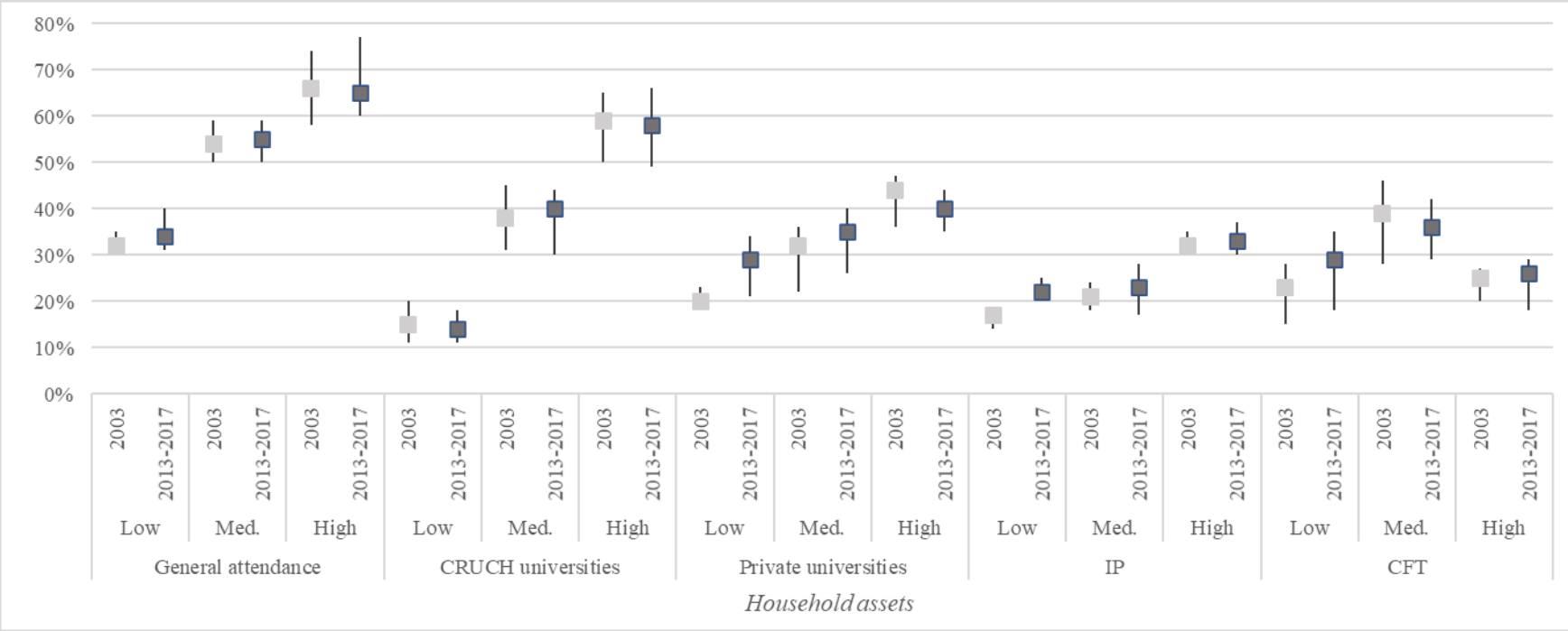
Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Figure 10. Predicted probabilities for higher education and institutional attendance based on parental education and the student loan regimes within contested expansion for coresidents (aged between 18 and 24) with completed upper secondary in Chile between 2003 and 2017.



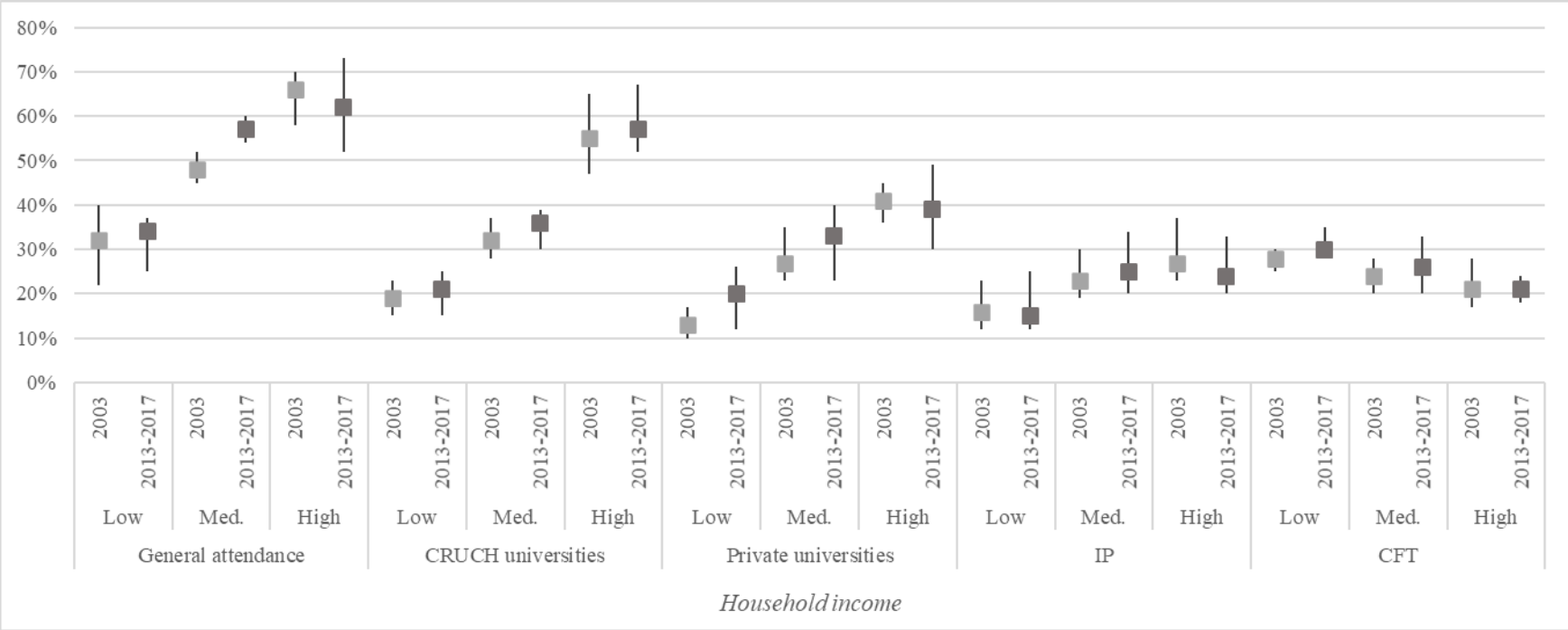
Note: Calculations based on Model 3 (presented in Table 7) with 95% confidence intervals. The author opted to illustrate the first and last regime only to facilitate the interpretation of results. The loan regimes identified are the following: initial regime (2003), democratisation regime (2006-2011), and accountability regime (2013-2017)
Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Figure 11. Predicted probabilities for higher education and institutional attendance based on household assets and the student loan regimes within contested expansion for coresidents (aged between 18 and 24) with completed upper secondary in Chile between 2003 and 2017.



Note: Calculations based on Model 3 (presented in Table 7) with 95% confidence intervals. The author opted to illustrate the first and last regime only to facilitate the interpretation of results. The loan regimes identified are the following: initial regime (2003), democratisation regime (2006-2011), and accountability regime (2013-2017)
Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

Figure 12. Predicted probabilities for higher education and institutional attendance based on household income and the student loan regimes within contested expansion for coresidents (aged between 18 and 24) with completed upper secondary in Chile between 2003 and 2017.



Note: Calculations based on Model 3 (presented in Table 7) with 95% confidence intervals. The author opted to illustrate the first and last regime only to facilitate the interpretation of results. The loan regimes identified are the following: initial regime (2003), democratisation regime (2006-2011), and accountability regime (2013-2017).
Source: Author's elaboration based on CASEN (from 2003 to 2017) (weighted calculations).

6.5. CONCLUSIONS

The aim of this chapter was to continue the exploration of the case of Chile, a country portrayed as an outlier within Latin America both by previous chapters and scientific literature on educational stratification. The piece examined whether inequality by social origins in higher education attendance changed in Chile in the period from 2002 to 2017, specifically regarding the potential influence of the different student loan regimes on the reported effects of the components of social origins. To do so, CASEN surveys conducted between 2003 and 2017 were harmonised and merged, which allowed for the expansion and updating of the number proposed by the two-fold definition of social origins proposed in the first part of the thesis, as well as the number of control variables. Then, some descriptive analyses were presented to identify the main trends in higher education attendance, in dialogue with the phases of the process presented in Chapter 5. Later, multivariate analyses were conducted to estimate the effects of social origins, and whether the modifications to the student loan regime have changed the probability of social groups accessing different types of tertiary education tracks and institutions.

In the first place, it is possible to conclude that social origins do matter in higher education attendance, regardless of the track or type of institution. Social origins play a stronger role in access to the most selective tracks and institutions, specifically, in the university track and CRUCH universities. It is noteworthy that the size, strength, and statistical significance of the effects displayed by sociocultural and economic resources are similar in both unconditional and conditional attendance.

In the second place, modifications to the student loan regime did not affect the different components of social origins to the same extent. On one side, democratisation of loans did not change the effect of parental education on attendance, regardless of the tier or institutions under evaluation. On the other side, democratisation affected the role of economic resources on attendance, specifically the effect associated with household assets and income in the case of general attendance and access to the least selective institutions. In this way, one could argue that expansion and the modifications introduced in the loan system have contributed towards increasing stratification within higher education, centred on the type of institution instead of the type of postsecondary education.

In the third place, as the reader must have concluded already, the recent developments in the Chilean higher education system have not led to the equalisation of opportunities between

social groups in their probability of attendance. Despite the narrowing gaps between social groups regarding their probability of transitioning to higher education, the story is different throughout the institutional spectrum: Loan democratisation did not produce any statistically significant changes in the transition probability between strata at either end of the selectivity ladder. This means that the access patterns to CRUCH universities and CFTs remained stable. On the contrary, loan democratisation modified the transition probability between social groups in the middle of the spectrum, which includes private universities and IPs. The reduction in the gaps between strata, however, is different: while the bottom and the top tended towards the middle in the case of private universities, only a reduction in the gap between the top and the middle was observed in the case of CFTs.

From the above, it is possible to confirm the three theoretical expectations. In addition, and in dialogue with the main approaches within the literature of educational stratification, recent developments in the Chilean higher education system can be summarised as follows: the modifications introduced in the loan regime have contributed to the decline of quantitative inequality in general higher education attendance, which is in line both with the MMI approach and with research on the Chilean case (Sevilla Encinas, 2018). Nevertheless, there is sufficient evidence to suggest that these modifications have contributed to increasing stratification within higher education. This has translated into increasing qualitative inequality, which is in line with the EMI approach and with research conducted on the effect of privatisation on secondary education (Torche, 2005a). The stratification process, understood in terms of opportunities in access to tertiary education, is not related to the division between tiers, but to the separation of CRUCH universities and the rest of the institutional spectrum.

Now, let us interpret these results in the context of the phases within the process of expansion described in Chapter 5. It was during the phase of advanced expansion (1990-2002) that inequality by social origins in higher education attendance declined because of a situation where the effect of parental education declined, but the effect of economic resources increased. From a policy perspective, one could argue that the variations in the role of parental education are an extension of the trends described by Torche (2010) during the 1980s: it was during the economic downturn that the country implemented policies to protect investments in education, which meant that the rise of educational inequality that other Latin American states experienced during this decade was avoided.

Turning to the phase of contested expansion (2002-present), inequality by social origins in higher education has continued to decline, but this is due to the opposite variation in the role of social origins: the effect of parental education did not vary, while the effect associated with economic resources declined after loan democratisation. These variations, however, contributed to increasing stratification within higher education, with growing differences between social groups in their probability of accessing to different types of institutions. In this sense, the main divide is not between tracks but between CRUCH universities and the rest. This separation is not only a consequence of the privatisation reform of 1981, but it has also been reinforced by the student loan regimes and stratification within secondary education.

From a policy perspective, findings serve to exemplify the limitations of the Chilean model of expansion and the existent student support policies. On the one hand, and notwithstanding the general expansion, students' chances of accessing higher education and student support policies remain unequally distributed. In other words, the "invisible hand" of the higher education market did not, on its own, guarantee quality or lead to the equality of opportunities to access this level. On the other hand, findings also reinforce the need for continued exploration of the role of student support policies in democratising attendance in the medium and long term. Examples such as the quota policies in favour of underrepresented populations in higher education, along with academic support courses and counselling services, might point in the right direction (Vargas & Heringer, 2017). From a general perspective, it is also necessary to discuss a comprehensive reform of higher education, with the aim of modernising from the structure of postsecondary programmes and applying equity criteria to its financing. In other words, the "invisible hand" of the higher education market has to be supplemented and regulated by the "visible hand" of politics and policymaking.

CONCLUSIONS

The main objective of this thesis was to explore whether the recent expansion of higher education in Latin America has reduced inequality in attendance at this educational level according to social origins. The focus was on the higher education expansion reforms that took place between the 1990s and early 2000s in the following 12 countries: Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, and Uruguay. This research started with describing the regional landscape and finished with an analysis of the Chilean case during the 2000s. Throughout this journey, the strategy consisted of moving from the general to the specific, following the purpose of presenting different matters of interest to the reader, such as the commonalities and differences between countries regarding the characteristics of the higher education systems, institutional settings, and available data. In this sense, it is worth acknowledging that this endeavour was not exempt from challenges in terms of making, both for academia and policymaking.

This section, then, proceeds as follows: it begins with a summary of main findings and presents the main contribution. Then, it presents the main limitations and future areas of research. Finally, the policy implications that can be derived from this thesis will be discussed.

1. SUMMARY OF MAIN FINDINGS

In broad terms, this thesis is composed of two theoretical chapters and four empirical chapters. The reader was able to distinguish between the two because questions were used as titles for each of the empirical chapters. These questions are mentioned again to summarise the main findings of this thesis.

In *"The more… the merrier in higher education?"* (Chapter 2) the focus was on evaluating the effect of expansion on inequality in access to higher education in the Latin American region. The title questions the general perception that the recent expansion has been a positive change, as *"the more, the merrier"* implies that expansion should democratise access to higher education by default. However, analyses showed that expansion has benefited from a growth

in the number of upper secondary graduates. Nevertheless, what could be interpreted as a success turns into a "zero sum" when a stagnation in the transition rates from secondary to tertiary education is demonstrated. Multivariate analyses showed that social origins have had a persistent impact on higher education attendance, both before and after expansion. It must be said that expansion affected the components of social origins differently: while the effect associated with parental education declined, the one related to economic resources strengthened in the transition from upper secondary to higher education. This might explain why the recent expansion did not have a democratising effect as expected: Although it is true that those from the least advantaged social origins increased their predicted probabilities of access, expansion did not reduce the gap for those with the most advantaged backgrounds and the rest of society. It is the persistence of the gap between those at the top and the rest of society what supports the high level of inequality that characterises Latin America, which some scholars define as "inequality driven by the top" (Neidhöfer, 2016; Neidhöfer et al., 2017). Therefore, and returning to the title of this chapter, it is this gap which also prevents *"the more"* from meaning *"the merrier"* in higher education.

After demonstrating that expansion is not enough to reduce inequality in tertiary education, the following chapter aimed to examine the role of institutional settings on this relationship. Specifically, in Chapter 3, titled *"Does privatisation matter?"*, the role of privatisation on inequality on higher education attendance was explored. To do this, a typology of higher education expansion models for Latin America was proposed, based upon the degree of privatisation at this level. Three groups of countries were identified and analysed: those with a high, medium, and low degree of privatisation, respectively. Results showed that *privatisation does matter in inequality of access*. On the one hand, only the group with high privatisation exhibited a considerable growth in the transition rates from upper secondary to tertiary education. However, on the other hand, it was only for this group that the effect of parental education and economic resources increased after expansion. The dynamic behind these results is one where the gap between the top and the rest of the society widened after expansion, confirming that it has contributed to a pattern of persistent "inequality driven by the top". In this sense, even in contexts where all social groups can benefit from expansion, the most advantaged ones benefit the most from it.

In *"To what extent do countries differ?"* (Chapter 4) analyses were conducted at the country level to reveal if there were any *outliers* within the expansion models. Special interest was given to the group with high privatisation in higher education due to the results obtained in the

previous chapter. Within this group, Chile was the only country where the effect of one of the components of social origins declined after expansion, deviating from the trend where both parental education and economic resources increased their influence. The decreasing effect of parental education in access to higher education reinforced the adjudicative character of Chile, already described by Torche (2010) during the 1980s. In this way, the expansion in Chile has both an *equalising effect* between the bottom and the middle sectors, as the gap in their attendance probabilities narrowed; and, also, a *persistently inequitable effect* between the middle and the top, as the gap in their probabilities widened after expansion, in accordance with the findings already reported by Neidhöfer et al. (2018).

The last empirical chapter titled *"Changing educational inequality in contemporary Chile?"* continued to explore this adjudicative. Specifically, analyses considered the period between 2003 and 2017 and examined the role of social origins on access to higher education and its different tiers and types of institutions. The role of institutional settings was included, but now in accordance with the student loan regimes implemented during the period under analysis. Modifications in the student loan regimes only produced a decline in the effect of economic resources on attendance, without changing the role of parental education. In addition, it was demonstrated that social origins had a stronger effect on access to the most selective institutions and tiers, which remained stagnant despite the loan democratisation of 2006. Surprisingly, the role of social origins on access to the most and least selective institutions did not show significant variations. Turning to the title of this chapter, it was possible to conclude that *inequality by social origins in access to higher education did change in Chile*, combining *declining quantitative inequality* regarding general attendance as enrolment has grown at this level, and *increasing qualitative inequality and stratification* regarding access to the most selective tiers and institutions.

In summary, the title of this thesis starts with "*between persistence and change"* to reinforce the main ideas behind the empirical chapters. *Change*, because during the last two decades, Latin American higher education has seen many policy developments, ranging from an explosive growth in the number of students and institutions, to increasing privatisation and social mobilisation. These changes, undoubtedly, boosted expectations of democratisation that exceeded the capacity of the opportunities created in higher education. In this sense, the changes were not sufficient to transform the *persistence* of inequality that characterises the region: one with a pattern that permits low-range mobility and the democratisation of certain

opportunities at the bottom half of the social ladder, while enhancing the concentration of resources, privileges, and the best opportunities at the top.

2. CONTRIBUTIONS

This section outlines how the thesis contributes to academic literature and methodological approaches designed to address educational expansion and inequality in Latin America. The four empirical chapters and the two theoretical chapters present several novelties, which I shall describe below.

From an academic perspective, this thesis has the strength of *setting matters* within the stream of research on educational stratification. Firstly, the dissertation highlights the exclusion of the developing world from the main debates on educational inequality. In fact, only a handful of experiences have received attention from social stratification scholars in Latin America, Eastern Europe and Asia (see, for example, the compilatory work of Chan & Ngok, 2011; Constantin, 2015; Shavit et al., 2007), despite that these regions are facing similar challenges in higher education in terms of privatisation and fast-paced expansion (UNESCO-IESALC, 2020). In this sense, the thesis pursues the objective of including Latin America within international comparative research on educational inequality, considering that studies have only been conducted in a handful of countries across the region. Following this, the inclusion of 12 countries in the analyses boosts comparative research within the region, as well as highlights the specificities of higher education expansion in Latin America.

Secondly, the dissertation also emphasises the role of institutional settings in the reduction of educational inequality. A typology of models of expansion was proposed for the Latin American context, based upon one of the most challenging but under-addressed features of higher education: that is, its increasing privatisation, according to which the growth in the number of students and institutions in tertiary education is related to the (more or less regulated) incorporation of private actors into educational provision. Moreover, for the case of Chile – a country usually referred to as the 'front-runner' in relating expansion and privatisation across all levels of education – a more detailed periodisation of the recent expansion and institutional settings is presented. This periodisation considers the evolution of enrolment between 1973 and 2020 (depending on the data source), emphasising not only the role that privatisation plays, but also the impact of other policies, such as the student loan regimes.

What previous contributions teach us is that *theories are not necessarily fully applicable to other contexts*, without considering their own institutional settings and political, social, economic, and cultural contexts. In this way, it is important to understand that there is a dual relationship in studying inequality: theories shape how institutional settings and political, social, economic, and cultural contexts are interpreted; but, in turn, these settings and contexts must also contribute to the development of theories. For example, the dissertation highlights the contribution of theories developed in institutional settings and contexts of industrialised economies, which are totally different to Latin America. However, the thesis also takes the specificities of Latin America, highlighting the role of privatisation in shaping institutional settings in higher education. This is a relevant exercise considering that privatisation in education is also prevalent in some industrialised countries (e.g., the United States) or has gained terrain across the developed world (e.g., Central Europe).

From the above, it is important to keep in mind the Latin American experiences and lessons, considering that the politics, policymaking, and economies of some industrialised regions are becoming "more Latin American" than ever (Sánchez-Ancochea, 2021). For example, it is undeniable that the COVID-19 pandemic has reinstalled the debate on inequality at the front of the policy agenda. Furthermore, it has also shown the political role of policymaking, often defined as 'technical' knowledge. This is also evident across the arena of educational stratification. The increasing complexity of higher education systems – either due to privatisation in Latin America or to their integration at the European level – shows that policymaking has become increasingly decentralised. The latter, in the sense that coordination is not only necessary at the state level, but between states and a myriad of different actors: from private investors and international organisations to potential students transitioning from adolescence to adulthood.

From an empirical perspective, the lack of suitable data on social origins was overcome through a dual strategy: the use of the coresidence approach on cross-sectional data and expanding the definition of social origins to sociocultural and economic resources. Regarding the former, applying the coresidence approach is not a novel strategy to overcome the lack of data across the developing world, so it is not exempt from criticism. However, the benefits of its application in the specific case of this dissertation outweighed the potential socioeconomic biases arising. Regarding the latter, it must be noted that the distinction between different components of social origins is not new (Bukodi & Goldthorpe, 2013), but its use in research on Latin America is a novelty. The inclusion of both parental sociocultural and economic

resources was a pending task considering the persistently high economic inequality that characterises Latin America since, at least, the mid-1900s.

3. LIMITATIONS AND FUTURE AREAS OF RESEARCH

As noted above, some of the methodological decisions are not exempt from criticism and can even be considered as some of the limitations behind this research. For example, the application of the *coresidence approach* has been criticised in other developing contexts due to its relation to the *downward bias* (Emran, Greene, & Forhad, 2016). This, specifically, refers to the coresidence restriction used in the definition of households, which is associated with an underrepresentation of newly created households. However, the reader must be reminded that the coresidence approach was considered the most appropriate solution to the lack of suitable data on social origins due to the characteristics of the research: the focus on access to higher education, a transition that happens relatively early in life, and usually before the age of nest-leaving in the Latin American context.

It is relevant to note, however, that coresidence rates among young adults (under 25 years of age) are higher in urban than in rural areas in Latin America. This is probably a consequence of factors associated with the age of nest leaving, such as socioeconomic status, gender, and education (De Vos, 1989; Marchionni, Conconi, Glüzman, & Tornarolli, 2011). In this sense, one could expect that differences in the effect of social origins could be even more marked if considering rural coresidents as well. In general terms, rural areas are characterised by a larger share of its population with lower socioeconomic status and educational attainment than urban areas (De Vos, 1989). Therefore, one could argue that that the differences in the effect of social origins between groups might have reflect some variations. For example, between respondents from less-advantaged background and their counterparts from the middle. Contrarily, not much variation could have been observed between the latter and their peers from the most advantaged origins as most affluent sectors reside in major urban areas in Latin America (Harvey, 1989; Sabatini, 2003; Sassen, 2007).

Another potential limitation related to the coresidence approach is the effect that higher education expansion might have had on the age of nest-leaving, which remains unclear. Research has shown that educational inequalities tend to show greater variability within countries rather than between countries (Permanyer & Boertien, 2019). As the way expansion has progressed differs between countries, one could expect that the potential bias arising from urban coresidence also varies. For example, Chile is one case where living in one of the three

major urban areas of the country plays a major role in higher education attendance (UNDP, 2018), even larger that the effect of urban versus rural residence (see Chapter 6). Uruguay, on the contrary, is an unique example where more than 90 percent of its population lives in its capital, without a significant share of rural population and with no other major urban settlement (World Bank, 2018). Other differences between areas or territories could emerge depending on the country, with the relevant distinction between "*o norte"* and "*o sul"* in the case of Brazil, or between "*Lima"* and "*la sierra"* in Peru. In this case, further research is necessary to estimate the extent of the potential bias arising, considering the national scenarios.

Another potential limitation consists of using *national household surveys,* specifically CASEN in the chapters dedicated to Chile. This survey, despite being nationally representative, has been related to the *underrepresentation of the most affluent sectors*. In this way, these instruments have been criticised for not measuring well the income of rich households due to either the characteristics of the questionnaire or the low response rate associated with income questions among rich individuals (División Observatorio Social, 2020; Sánchez-Ancochea, 2021). However, again, the reader must be reminded that CASEN was chosen as the most suitable data to work with not only because of the lack of suitable data, but also for the range of indicators on living conditions that this survey offers. Only CASEN allowed for the expansion of both the years under observation (between 2003 and 2017) and the definition of social origins to include parental sociocultural and economic resources.

Now, some scepticism might arise, precisely, from the definition of social origins considering the *limited number of economic indicators*. This selection is dependent on the available indicators across all the censuses and the versions of CASEN that were included in the analysis. This selection is far from being sufficient to define economic advantage or wealth; however, robustness in their measurement and availability through time were advantages. In this sense, the goal was simply to include household assets – understood as parental economic resources – in the puzzle of inequality by social origins in access to higher education in Latin America.

Finally, some criticism might arise from *data timing*, specifically associated with the use of censuses conducted in different years. Despite that the thesis aims to capture the variation in the effect of social origins between 2000 and 2010, 6 out of the 12 selected countries do not fall into this range. Specifically, censuses in these cases were conducted either in the 1980s and 1990 (Chile) or in the 1990s and the 2000s (Bolivia, Colombia, Paraguay, Peru, and Uruguay). In this sense, the results might be associated with data timing differences rather than to

variations in the effect of social origins. Supporting this interpretation, it is possible to mention how macroeconomic and political contexts varied between the 1990s and 2010s, in terms of democratic consolidation, economic growth, poverty and extreme poverty rates, among other factors. Contrary to this interpretation, it is possible to argue that the data timing differences are somewhat captured by the variations in implementation of expansion policies. For example, Chile is the first country that implemented these policies in the 1980s, followed by Colombia in the early 1990s and Uruguay in the mid-1990s; states that are the ones with the stable democratic systems in South America. However, this is the scenario in Bolivia, Paraguay, and Peru. Further empirical research is necessary to resolve this dilemma. In this sense, the magnitude or the direction of the bias associated with the coresidence approach should be studied in more detail. Moreover, further research should work with a combination of administrative registers and the harmonisation of national household surveys and censuses. Researchers must bear in mind that the availability of data with information on social origins is not going to change anytime soon, given the dissimilar quality of the statistical infrastructure of Latin American countries. That is why projects such as IPUMS International and SEDLAC play an important role in comparative research in the region.

Three potential areas of research can be suggested from the perspective of social stratification. First, one could address *the relationship between coresidence and expansion of higher education.* To date, it remains unclear whether expansion has had a positive or negative effect on coresidence (Ferreyra, 2017). There are arguments supporting a positive effect as the expectations of pursuing a postsecondary education degree have democratised more rapidly than the opportunities at this level (Barozet, 2017), delaying the age for nest-leaving in favour of remaining in education. On the contrary, there is also evidence suggesting that expansion might have facilitated this transition, as young individuals would leave the parental home and move to other cities to pursue better opportunities in higher education (Arango, 2016). Coresidence, in my opinion, might be a fruitful area of research because the COVID-19 pandemic has reinstalled educational attainment, labour market participation, the risk of poverty, and changed cohabitation patterns among the young, especially women.

Second, *the role of institutional settings in shaping educational inequality should also be explored in more detail*. Specifically, I would suggest paying special attention to the role of student support policies in this matter (Vargas & Heringer, 2017), as access is only the first milestone towards the democratisation of opportunities in higher education. The reader must be reminded that, despite the dramatic expansion, dropout and graduation rates in higher

education have not substantially changed in the last two decades in Latin America. Therefore, the typology of models of expansion could be improved through the incorporation of other variables, such as: education policy context – such as upper secondary graduation patterns, the degree of privatisation at other levels of education, the timing of the implementation of expansion policies in secondary education, and the type and coverage of student support policies – and macroeconomic and political characteristics at the country level.

Third, I would recommend *exploring the link between higher education expansion and labour market outcomes, especially for the case of Latin American women*. It must be noted that research on educational stratification has ignored the gender component. For example, Torche's aforementioned studies (2005a, 2005b, 2010) address the association between the educational attainment of fathers and sons. Data limitations aside, it has been demonstrated that women have outnumbered men, both in terms of educational attainment and achievement: today, representing more than half of higher education students and graduates (Ferreyra et al., 2017). One could think, then, that women are the ones who have benefited the most from expansion. However, when analysing labour market outcomes, the gender gap has remained stable or worsened to the detriment of women. Among higher education graduates, this occurs in the case of labour market participation, unemployment rate, wages, and in the so-called "glass ceiling effect" (International Labour Organisation, 2019). Therefore, it is worth wondering to what extent institutional settings and the increasing stratification in tertiary education might contribute to gender inequality in labour market returns to higher education, in addition to policies aimed at reducing labour market disparities between men and women.

4. POLICY IMPLICATIONS

To conclude this research and in light of its findings, I would like to highlight some of the implications that Latin American governments, policymakers, and social movements face. To do this, let us start with the following remarks: No Latin American government has fully responded to the long-lasting demand for democratising opportunities in education, which has fuelled social mobilisation around educational inequality since early 2000s. Furthermore, the COVID-19 pandemic has reinstalled the problem of student indebtedness and poor-quality education for a generation that trusted in higher education as a secure path for social integration and social mobility. Therefore, the debate on the short, mid, and long-term consequences of policies introduced more than two decades ago is more important than ever. In this sense, working towards the democratisation of education opportunities in a context of inequality

"driven by the top" should consider aspects to reduce both the effects of sociocultural and economic resources of origin.

Research has shown that policies aimed at reducing the effect of economic resources have a fast but short-term effect on the democratisation of access to higher education. This is what the findings presented in the chapters dedicated to Chile, along with the effect that the changes in the student loan regime had on higher education attendance. These chapters showed that loan democratisation has contributed very little towards the reduction of qualitative inequality in access. Social mobilisation has highlighted that student indebtedness and centring the debate on free education only are not effective strategies, either to reduce inequality by social origins on access or to secure social cohesion across very unequal societies. In this sense, more creativity is needed and expected from politicians, researchers, and policymakers because expanding access to higher education is just the first milestone towards the democratisation of opportunities.

From the above, some recommendation to reduce the effect of economic resources on access to higher education might include the following: A more equitable funding system (Ferreyra et al., 2017) alongside a broader range of student support policies (Vargas & Heringer, 2017). Regarding the former, a more equitable system should consider baseline funding and accountability mechanisms for both public and private institutions. Historically, private actors have always played a key role in promoting education in Latin America, and the for-profit involvement of some of them should not deviate the debate towards the elimination of private provision in higher education. Regarding the latter, and based upon the Chilean example, it is possible to argue that free education or loans to finance tuition fees are not enough to boost the willingness or the material conditions of individuals to remain and succeed in higher education. In this sense, policies should not ignore the insufficiencies and cumulative inequalities at lower levels of education, which range from stronger networks and cultural capital among those with more advantaged social origins, to the lack of information and low expectations among those from less privileged backgrounds (Murakami & Blom, 2008). Some policies that might serve as examples are: to provide psychological support and academic levelling courses in upper secondary and tertiary education for vulnerable students, admission quotas, living cost subsidies, nurseries for students with children, among others. It is true that some of these policies have been implemented by certain universities in some countries for circa a decade (see, for example, the *Propedéutico* programmes in some universities in Chile or the quota

policies in Brazilian public universities); however, Latin American states should introduce them at the state level, considering both universities and vocational postsecondary institutions.

Research has also shown that policies aimed at reducing the effect of parental sociocultural resources are more difficult to implement but have a long-term effect on the democratisation of access to higher education. The more difficult implementation is due to such policies requiring thinking beyond the limits of the higher education system and acknowledging the cumulative character of socioeconomic inequalities throughout the educational ladder. In addition, qualitative inequality is present throughout the education system, with most affluent sectors concentrating the opportunities of best quality education at all levels (Torche, 2005a). Therefore, some policies that might help to diversify and democratise access to higher education should consider changes in the undergraduate curricula and making vocational postsecondary education a key area for social and economic development.

The fact that undergraduate programmes are too long in Latin America has been well-documented, with an average duration of five years (10 semesters) (Brunner & Villalobos, 2014). One could suggest that the duration is one of the factors involved in the stagnation in the dropout and graduation rates, also contributing to student debt and a late incorporation in the labour market (Adrogué & de Fanelli, 2018; Arango, 2016; Ossandon, 2012; Pérez Roa, 2014; Segura, 2016). In this way, undergraduate programmes should be shortened and streamlined to promote mobility and labour market-oriented training, similar to the Bologna reform conducted in Europe, which noticeably shortened the duration of undergraduate programmes.

Boosting postsecondary vocational training has been a demand advocated mostly from the perspective of social scientists, but it has not been well prioritised by the states (Sanhueza de la Cruz, 2015). One must highlight that, in this sense, their response has been insufficient, despite the key role that technical training plays in the economic stability of the region. The reader must be reminded that Latin American economies rely heavily on commodity exportation, a sector with limited technical capacity and development due to the lack of a skilled workforce with adequate training. One must also be reminded that expansion in the region is not linked to the process of industrialisation, as it happened in Western and Central Europe after the Second Word War. In Latin America, expansion took off during the installation of the neoliberal agenda, a period characterised by promotion of deindustrialisation. In this way, states should promote and invest in postsecondary vocational training as a central

area for innovation, entrepreneurship, personal development, and labour market integration. This, of course, is not an easy task considering that the expectations related to university attendance (Barozet, 2017) and the university-centred character of expansion are two other central features of expansion, which have democratised more rapidly than access itself.

These implications and policy recommendations are just some of the many examples that could be mentioned. In fact, they might not differ greatly from the pending challenges of many industrialised countries. Nevertheless, it is necessary to highlight that Latin America has the singularity of experiencing a pattern of persistent inequality which is driven by the top. In this sense, the debate on inequality by social origins in higher education attendance is embedded in political and policy debates on social inequality because this is not just about income concentration, but also the redistribution of power and opportunities; thus, it requires combined efforts from politics and policymaking. As Sánchez-Ancochea (2021) emphasises: the concentration of power and influence at the top (the so-called "elite") explains why inequality has persisted in Latin America; hence, policy recommendations pursuing the decline of inequality must consider the political conditions required to drive this change. In contexts closer to the Anglo-Saxon tradition in policymaking, one might find this strange. However, this is far from arbitrary in Latin America. In a case where the reader is familiar with the region or is fluent in Spanish or Portuguese, it is worth noting that "policy", "polity", and "politics" can be translated and summarised into a single word: *política.* Therefore, the democratisation of opportunities in higher education does require the democratisation of opportunities in *política*, in any of its meanings.

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APPENDICES

APPENDIX 1:

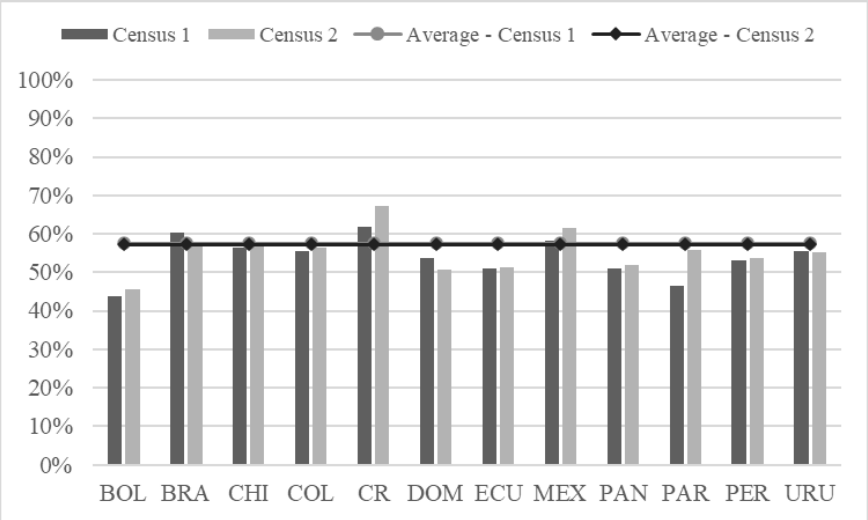
CO-RESIDENCE RATES IN LATIN AMERICA

To overcome the lack of suitable data to address inequality, the co-residence approach is the one selected for the purposes of this chapter. In order to assess the potential bias arising from this approach, respondents in within the age frame to enter higher education (therefore, 'respondents') were characterised by their relationship to the head of the household. Then, only those related as 'child' (therefore, coresident children) were characterised by zone of residence and gender. Descriptive statistics were calculated by country and census.

1.1. Distribution of respondents by their relationship to the head of the household

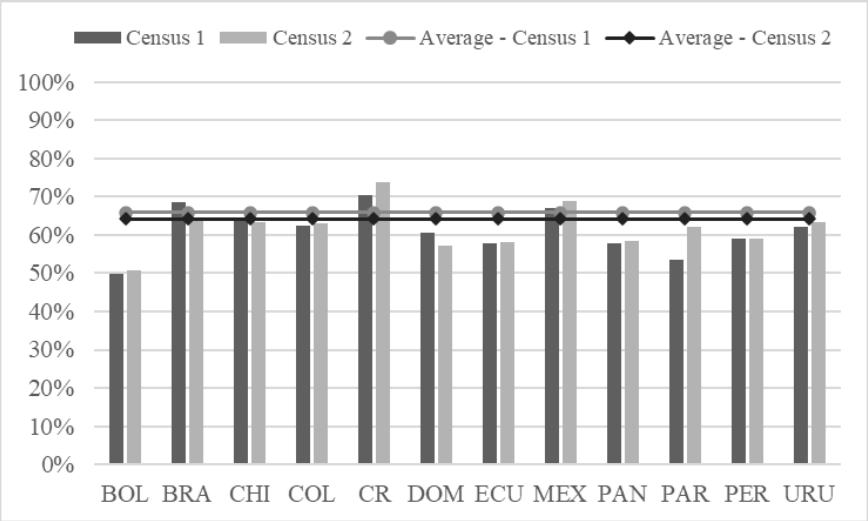
Figure 1.1 shows that the proportion of respondents related as 'child' to the head of the household reaches at least 50 percent in every country in census 1 and 2. Moreover, it also shows that this proportion has remained stable during the intercensal period, with no significant variations by country. In census 1, the highest proportion of coresident children is shown in Brazil (62 percent) and the lowest in Bolivia (50 percent); whereas in census 2, by Costa Rica (69 percent) and Bolivia (49 percent), respectively.

FIGURE 1.1: Proportion of respondents (aged between 17 or 18 and 24) related as 'child' to the head of the household by country in census 1 and census 2.



Source: Author's elaboration based on IPUMS International

FIGURE 1.1: Proportion of respondents (aged between 17 or 18 and 21) related as 'child' to the head of the household by country in census 1 and census 2.



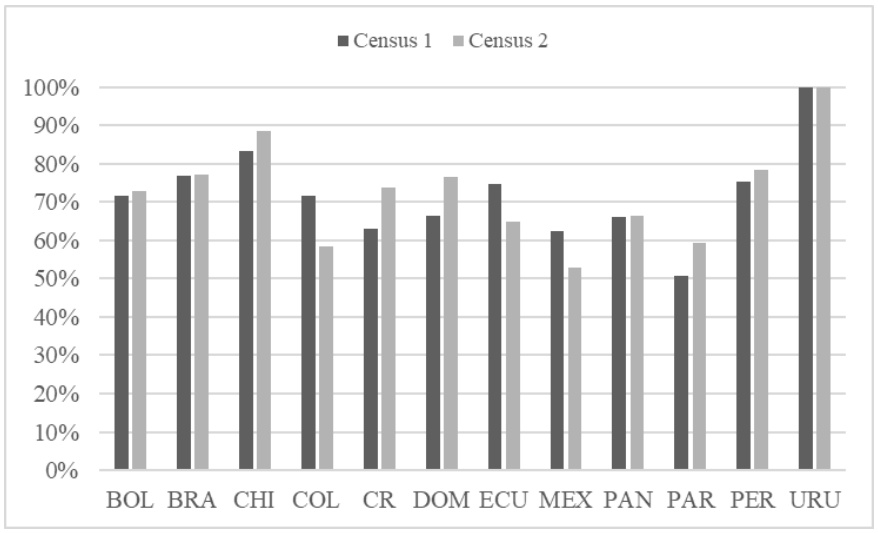
Source: Author's elaboration based on IPUMS International.

1.2. Distribution of coresident children by zone of residence

Only the subsample of respondents related as child to the head of the household (therefore, coresident children) where characterised by zone of residence (that is, whether the household where they lived when surveyed is in an urban or rural area). Figure 1.2 shows that coresident children mostly lived in urban areas in every country for the intercensal period. It is important to mention that the total sample of coresident children was considered urban in Uruguay because of the country's particularly high urbanisation rates (over 95 percent). For the rest of countries, in census 1 the highest proportion of urban coresident children is observed in Chile (84 percent) whereas the lowest in in Peru (51 percent). In census 2, Chile again exhibits the highest proportion of coresidents (89 percent) and Mexico the lowest one (53 percent). It is important to highlight that co-residence in urban areas remained stable during the intercensal period, but also showed an increase in most of countries with the exemptions of Colombia and Mexico.

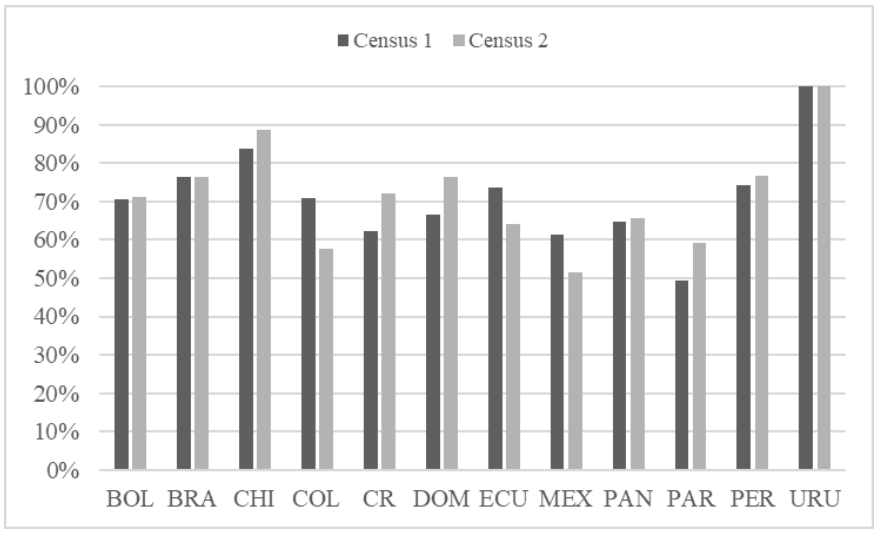
In order to keep the highest proportion of coresident children, we decided to include only those living in urban areas in the following analyses.

FIGURE 1.2: Proportion of coresidents (aged 17 or 18 and 24) living in urban areas by country in census 1 and census 2.



Source: Author's elaboration based on IPUMS International.

FIGURE 1.2: Proportion of coresidents (aged 17 or 18 and 21) living in urban areas by country in census 1 and census 2.



Source: Author's elaboration based on IPUMS International.

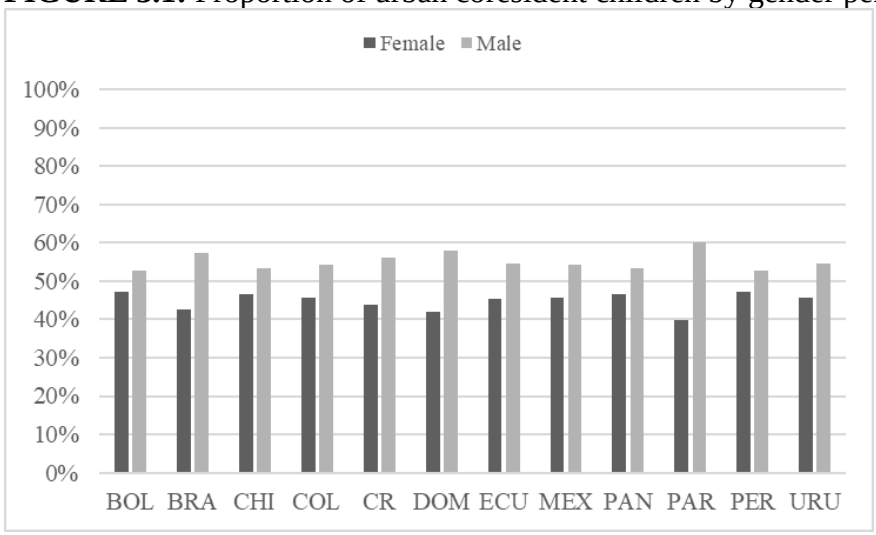
1.3. Distribution of urban coresident children by gender

The sub-sample of respondents related as child to the head of the household and living in urban areas (therefore, urban coresident children) was characterised by gender. Figures 3.1 and 3.2 show that the proportion of urban coresidents is slightly dominated by men in both censuses. Whereas in census 1 the highest proportions for male respondents are observed in Uruguay (57 percent), Dominican Republic (56 percent), and Brazil (56 percent), the lowest proportions correspond to the cases of Peru (51 percent) followed by Bolivia, Chile, and Colombia (52 percent). In census 2, these trends are maintained by the same countries. The male predominance in co-residence patterns is not surprising due to the gender differences reported

for the age of first marriage or the age of first child, as these occur earlier in life amongst women (Egondi, Kabiru, Beguy, Kanyiva, & Jessor, 2013; Warner & Houle, 2018).

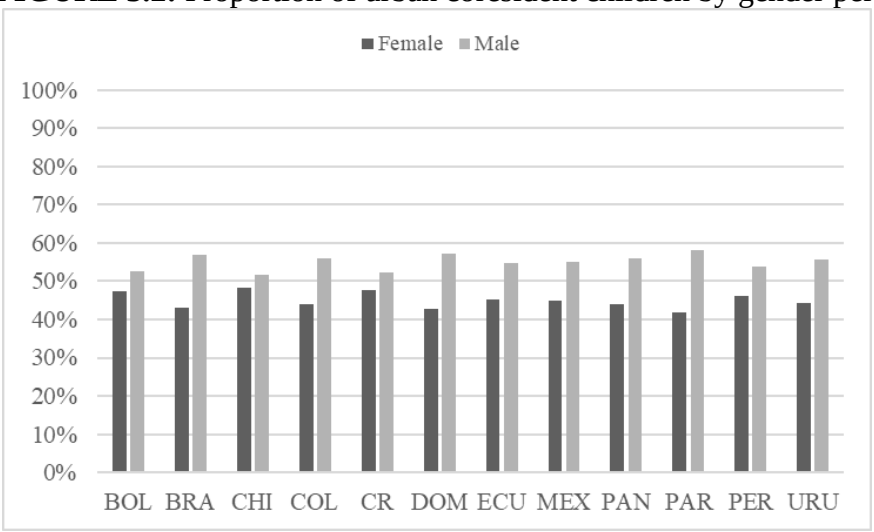
As there are not statistically gender differentials and the male predominance has remained stable for the intercensal period, male and female respondents are both kept in the sample for the analyses on educational inequality presented in these chapters.

FIGURE 3.1: Proportion of urban coresident children by gender per country in census 1.



Source: Author's elaboration based on IPUMS International

FIGURE 3.2: Proportion of urban coresident children by gender per country in census 2.



Source: Author's elaboration based on IPUMS International.

APPENDIX 2:

CORRELATION MATRIX BETWEEN EXPLANATORY VARIABLES

Table 2.1 shows the correlation coefficients between the available explanatory variables. Coefficients above 0.70 indicate that these variables must be removed from analyses.

TABLE 2.1: Correlation matrix between explanatory variables.

Variables	Census Year	Parental Education	Household Ownership	Household Assets Index
Census Year	1.000			
Parental Education	0.095	1.000		
Household Ownership	-0.035	0.042	1.000	
Household Assets Index	0.025	0.335	0.045	1.000

Source: Author's elaboration based on IPUMS International.

APPENDIX 3:

INVENTORY OF ORIGINAL VARIABLES IN IPUMS INTERNATIONAL

Table 3.1: Respondents' sociodemographic information.

Variable	Dataset	Country											
		BOL	BRA	CHI	COL	CR	DOM	ECU	MEX	PAN	PAR	PER	URU
Census year	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Zone of Residence	Census 1	x	x	x	x	x	x	x	x	x	x	x	n/a
	Census 2	x	x	x	x	x	x	x	x	x	x	x	n/a
Relationship to the household head	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Gender	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x

Source: Author's own elaboration based on IPUMS International.
Note: **S** = Indicates there is a specific variable for this country only, x = Information available, n/a = Information not available

Table 3.2: Respondents' education.

Variable	Dataset	Country											
		BOL	BRA	CHI	COL	CR	DOM	ECU	MEX	PAN	PAR	PER	URU
Educational attainment	Census 1	**s**	x	**s**	x	x	x	x	x	x	x	x	x
	Census 2	**s**	x	**s**	x	x	x	x	x	x	x	x	x
Years of schooling	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	n/a	x	x	x	x	x	x	x	x	x	n/a

Source: Author's own elaboration based on IPUMS International
Note: **S** = Indicates there is a specific variable for this country only, x = Information available, n/a = Information not available

Table 3.3: Parental education.

Variable	Dataset	Country											
		BOL	BRA	CHI	COL	CR	DOM	ECU	MEX	PAN	PAR	PER	URU
Mother's Educ. Attainment	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Father's Educ. Attainment	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x

Source: Author's own elaboration based on IPUMS International.

Note: **S** = Indicates there is a specific variable for this country only, x = Information available, n/a = Information not available

Table 3.4: Household economic resources.

Variable	Dataset	Country											
		BOL	BRA	CHI	COL	CR	DOM	ECU	MEX	PAN	PAR	PER	URU
Dwelling Ownership	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Electricity	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Water supply	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Sewage	Census 1	x	x	x	n/a	x	x	x	x	x	n/a	x	x
	Census 2	x	x	x	n/a	x	x	x	x	x	x	x	x
Refrigerator	Census 1	n/a	x	x	n/a	x	x	n/a	x	x	x	x	x
	Census 2	x	x	x	n/a	n/a	x	n/a	x	x	x	x	x
Television	Census 1	x	x	x	n/a	x	x	n/a	x	x	x	x	x
	Census 2	n/a	x	x	n/a	x	x	n/a	x	x	x	x	x
Number of rooms	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Labour force participation	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x

Source: Author's own elaboration based on IPUMS International

Note: **S** = Indicates specific variable for this country only, x = Information available, n/a = Information not available

Table 3.5: Household characteristics.

Variable	Dataset	Country											
		BOL	BRA	CHI	COL	CR	DOM	ECU	MEX	PAN	PAR	PER	URU
Gender - head of the household	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	n/a	x	x	x	x	n/a	x	n/a	x	x	x
Number of own children under 5	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Number of families	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x
Number of own family members	Census 1	x	x	x	x	x	x	x	x	x	x	x	x
	Census 2	x	x	x	x	x	x	x	x	x	x	x	x

Source: Author's own elaboration based on IPUMS International.

Note: **S** = Indicates there is a specific variable for this country only, x = information available, n/a = information not available

APPENDIX 4:

DESCRIPTIVE STATISTICS BY COUNTRY AND CENSUS

4.1. BOLIVIA

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	8,871	0	1	.347	.476
EXPLANATORY VARIABLES					
Parental education	8,827	1	6	2.201	1.232
Home ownership	8,871	0	1	.728	.449
Household assets index (z scores)	8,828	3.46e-07	5.176	3.879	1.144
CONTROL VARIABLES					
Gender	8,871	0	1	.513	.499
Age	8,871	1	7	3.554	1.955
Number of families	8,871	0	1	.890	.312
Family size	8,871	2	20	6.034	2.406
Number of own children under 5	8,871	0	1	.057	.233
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	11,736	0	1	.348	.476
EXPLANATORY VARIABLES					
Parental education	11,196	1	6	2.360	1.405
Home ownership	11,732	0	1	.717	.450
Household assets index (z scores)	11,732	3.46e-07	5.176	4.459	.899
CONTROL VARIABLES					
Gender	11,736	0	1	.514	.499
Age	11,736	1	7	3.638	2.007
Number of families	11,736	0	1	.944	.228
Family size	11,736	2	22	5.421	2.158
Number of own children under 5	11,736	0	1	.063	.243

Source: Author's elaboration based on IPUMS International (unweighted calculations).

4.2. BRAZIL

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	319,197	0	1	.097	.297
EXPLANATORY VARIABLES					
Parental education	318,689	1	6	2.224	1.165
Home ownership	318,257	0	1	.842	.363
Household assets index (z scores)	318,138	3.46e-07	5.176	4.196	.945
CONTROL VARIABLES					
Gender	319,197	0	1	.555	.496
Age	319,197	1	7	3.471	1.943
Number of families	319,197	0	1	.980	.137
Family size	319,197	2	28	5.366	2.161
Number of own children under 5	319,197	0	1	.079	.270
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	279,459	0	1	.241	.427
EXPLANATORY VARIABLES					
Parental education	279,033	1	6	2.451	1.318
Home ownership	279,232	0	1	.819	.384
Household assets index (z scores))	279,196	3.46e-07	5.176	4.198	.933
CONTROL VARIABLES					
Gender	279,452	0	1	.551	.497
Age	279,452	1	7	3.688	1.977
Number of families	279,452	0	1	.982	.129
Family size	279,452	2	30	4.705	1.852
Number of own children under 5	279,452	0	1	.072	.259

Source: Author’s elaboration based on IPUMS International (unweighted calculations).

4.3. CHILE

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	20,062	0	1	.225	.417
EXPLANATORY VARIABLES					
Parental education	20,062	1	6	2.171	1.012
Home ownership	20,062	0	1	.817	.386
Household assets index (z scores)	20,022	3.46e-07	5.176	3.982	.975
CONTROL VARIABLES					
Gender	20,062	0	1	.521	.499
Age	20,062	1	7	3.622	1.970
Number of families	20,062	0	1	.919	.271
Family size	20,062	2	19	5.375	1.961
Number of own children under 5	20,062	0	1	.096	.294
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	21,870	0	1	.329	.470
EXPLANATORY VARIABLES					
Parental education	21,870	1	6	2.513	1.202
Home ownership	21,870	0	1	.801	.398
Household assets index (z scores)	21,815	.862	5..176	4.376	.904
CONTROL VARIABLES					
Gender	21,870	0	1	.513	.499
Age	21,870	1	7	3.679	1.954
Number of families	21,870	0	1	.938	.239
Family size	21,870	2	19	4.900	1.703
Number of own children under 5	21,870	0	1	.095	.293

Source: Author's elaboration based on IPUMS International (unweighted calculations).

4.4. COLOMBIA

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	48,824	0	1	.155	.362
EXPLANATORY VARIABLES					
Parental education	47,716	1	6	1.948	.864
Home ownership	48,400	0	1	.770	.420
Household assets index (z scores)	48,824	0	1	.518	.499
CONTROL VARIABLES					
Gender	48,824	0	1	.518	.499
Age	48,824	0	7	3.103	2.303
Number of families	48,824	0	1	.905	.292
Family size	48,824	2	39	6.099	2.453
Number of own children under 5	48,824	0	1	.071	.257
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	45,154	0	1	.210	.407
EXPLANATORY VARIABLES					
Parental education	44,538	1	6	2.205	1.207
Home ownership	43,939	0	1	.665	.471
Household assets index (z scores)	43,387	3.46e-07	5.176	3.901	1.140
CONTROL VARIABLES					
Gender	45,154	0	1	.534	.498
Age	45,154	0	7	3.007	2.284
Number of families	45,154	0	1	.936	.244
Family size	45,154	2	25	5.308	2.166
Number of own children under 5	45,154	0	1	.097	.296

Source: Author’s elaboration based on IPUMS International (unweighted calculations).

4.5. COSTA RICA

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	5,618	0	1	.259	.438
EXPLANATORY VARIABLES					
Parental education	5,618	1	6	2.623	1.450
Home ownership	5,618	0	1	.808	.393
Household assets index (z scores)	5,618	3.46e-07	5.176	4.596	.850
CONTROL VARIABLES					
Gender	5,618	0	1	.537	.498
Age	5,618	0	7	2.880	2.222
Number of families	5,618	0	1	.952	.212
Family size	5,618	2	16	5.315	1.957
Number of own children under 5	5,618	0	1	.062	.242
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	7,990	0	1	.273	.445
EXPLANATORY VARIABLES					
Parental education	7,989	1	6	2.704	1.595
Home ownership	7,849	0	1	.790	.407
Household assets index (z scores)	7,990	3.46e-07	5.176	4.453	.872
CONTROL VARIABLES					
Gender	7,990	0	1	.521	.499
Age	7,990	0	7	3.186	2.255
Number of families	7,990	0	1	.972	.164
Family size	7,990	2	15	4.807	1.700
Number of own children under 5	7,990	0	1	.067	.250

Source: Author’s elaboration based on IPUMS International (unweighted calculations).

4.6. DOMINICAN REPUBLIC

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	9,917	0	1	.304	.460
EXPLANATORY VARIABLES					
Parental education	9,850	1	6	2.245	1.326
Home ownership	9,917	0	1	.698	.458
Household assets index (z scores)	9,914	3.46e-07	5.176	4.029	1.004
CONTROL VARIABLES					
Gender	9,917	0	1	.555	.496
Age	9,917	1	7	3.599	1.949
Number of families	9,917	0	1	.969	.171
Family size	9,917	2	18	5.453	2.027
Number of own children under 5	9,917	0	1	.075	.264
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	12,464	0	1	.350	.477
EXPLANATORY VARIABLES					
Parental education	12,457	1	6	2.505	1.517
Home ownership	12,464	0	1	.671	.469
Household assets index (z scores)	12,102	3.46-07	5.176	3.820	1.0301
CONTROL VARIABLES					
Gender	12,464	0	1	.558	.496
Age	12,464	1	7	3.514	1.969
Number of families	12,464	0	1	.93	.160
Family size	12,464	2	18	5.008	1.756
Number of own children under 5	12,464	0	1	.080	.271

Source: Author’s elaboration based on IPUMS International (unweighted calculations).

4.7. ECUADOR

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	15,695	0	1	.305	.460
EXPLANATORY VARIABLES					
Parental education	15,633	1	6	2.241	1.219
Home ownership	15,695	0	1	.763	.424
Household assets index (z scores)	15,267	3.46e-07	5,176	3.849	1.116
CONTROL VARIABLES					
Gender	15,695	0	1	.542	.498
Age	15,695	1	7	3.602	1.954
Number of families	15,695	0	1	.940	.235
Family size	15,695	2	26	5.827	2.282
Number of own children under 5	15,695	0	1	.078	.269
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	15,352	0	1	.476	.499
EXPLANATORY VARIABLES					
Parental education	15,218	1	6	2.612	1.468
Home ownership	15,352	0	1	.708	.454
Household assets index (z scores)	15,352	3.46e-07	5.176	4.160	1.044
CONTROL VARIABLES					
Gender	15,352	0	1	.536	.498
Age	15,352	1	7	3.602	1.978
Number of families	15,352	0	1	.965	.181
Family size	15,352	2	19	5.203	2.021
Number of own children under 5	15,352	0	1	.090	.286

Source: Author’s elaboration based on IPUMS International (unweighted calculations).

4.8. MEXICO

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	112,605	0	1	.186	.389
EXPLANATORY VARIABLES					
Parental education	109,813	1	6	2.178	1.124
Home ownership	110,779	0	1	.865	.341
Household assets index (z scores)	110,755	3.46e-07	5.176	4.185	1.014
CONTROL VARIABLES					
Gender	112,605	0	1	.528	.499
Age	112,605	1	7	3.582	1.989
Number of families	112,605	0	1	.976	.152
Family size	112,605	2	30	5.921	2.329
Number of own children under 5	112,605	0	1	.082	.274
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	120,956	0	1	.239	.426
EXPLANATORY VARIABLES					
Parental education	120,797	1	6	2.310	1.193
Home ownership	120,475	0	1	.854	.352
Household assets index (z scores)	118,724	3.46e-07	5.176	4.252	.947
CONTROL VARIABLES					
Gender	120,956	0	1	.539	.498
Age	120,956	1	7	3.596	1.979
Number of families	120,956	0	1	.980	.138
Family size	120,956	2	35	5.563	2.249
Number of own children under 5	120,956	0	1	.112	.315

Source: Author’s elaboration based on IPUMS International (unweighted calculations).

4.9. PANAMA

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	2,969	0	1	.327	.469
EXPLANATORY VARIABLES					
Parental education	2,969	1	6	2.556	1.459
Home ownership	2,966	0	1	.841	.365
Household assets index (z scores)	2,966	3.46e-07	5.176	4.308	.946
CONTROL VARIABLES					
Gender	2,969	0	1	.520	.499
Age	2,969	1	7	3.644	1.961
Number of families	2,969	0	1	.941	.234
Family size	2,969	2	21	5.428	2.273
Number of own children under 5	2,969	0	1	.108	.311
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	3,433	0	1	.292	.454
EXPLANATORY VARIABLES					
Parental education	3,429	1	6	2.969	1.608
Home ownership	3,427	0	1	.872	.333
Household assets index (z scores)	3,422	3.46e-07	5.176	4.278	.900
CONTROL VARIABLES					
Gender	3,433	0	1	.540	.498
Age	3,433	1	7	3.652	1.979
Number of families	3,433	0	1	.933	.249
Family size	3,433	2	22	.5064	2.227
Number of own children under 5	3,433	0	1	.090	.286

Source: Author’s elaboration based on IPUMS International (unweighted calculations)

4.10. PARAGUAY

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	2,881	0	1	.144	.351
EXPLANATORY VARIABLES					
Parental education	2,872	1	6	2.070	1.010
Home ownership	2,877	0	1	.816	.387
Household assets index (z scores)	2,854	3.46e-07	5.176	3.438	1.228
CONTROL VARIABLES					
Gender	2,881	0	1	.553	.497
Age	2,881	1	7	3.590	1.962
Number of families	2,881	0	1	.881	.322
Family size	2,881	2	19	6.444	2.614
Number of own children under 5	2,881	0	1	.081	.273
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	5,783	0	1	.202	.401
EXPLANATORY VARIABLES					
Parental education	5,783	1	6	2.188	1.126
Home ownership	5,682	0	1	.877	.327
Household assets index (z scores)	5,535	3.46e-07	5.176	3.951	1.040
CONTROL VARIABLES					
Gender	5,783	0	1	.538	.498
Age	5,783	1	7	3.484	1.931
Number of families	5,783	0	1	.912	.283
Family size	5,783	2	23	6.221	2.479
Number of own children under 5	5,783	0	1	.086	.280

Source: Author’s elaboration based on IPUMS International (unweighted calculations).

4.11. PERU

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	35,663	0	1	.383	.486
EXPLANATORY VARIABLES					
Parental education	35,311	1	6	2.372	1.257
Home ownership	35,663	30	1	.781	.413
Economic advantage index (z scores)	35,656	3.46e-07	5.176	3.505	1.097
CONTROL VARIABLES					
Gender	35,663	0	1	.516	.499
Age	35,663	0	7	3.019	2.280
Number of families	35,663	0	1	.904	.293
Family size	35,663	2	25	6.468	2.498
Number of own children under 5	35,663	0	1	.058	.235
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	43,593	0	1	.475	.499
EXPLANATORY VARIABLES					
Parental education	43,593	1	6	2.843	1.432
Home ownership	43,593	0	1	.761	.425
Household assets index (z scores)	43,593	3.46e-07	5.176	3.832	1.142
CONTROL VARIABLES					
Gender	43,593	0	1	.522	.499
Age	43,593	0	7	3.145	2.272
Number of families	43,593	0	1	.941	.233
Family size	43,593	2	26	5.639	2.220
Number of own children under 5	43,593	0	1	.068	.253

Source: Author's elaboration based on IPUMS International (unweighted calculations)

4.12. URUGUAY

CENSUS 1					
NAME	**N (VALID)**	**MIN**	**MAX**	**MEAN**	**SD**
DEPENDENT VARIABLE					
Higher education attendance	4,865	0	1	.158	.365
EXPLANATORY VARIABLES					
Parental education	4,841	1	6	2.012	.913
Home ownership	4,818	0	1	.693	.461
Economic advantage index (z scores)	4,694	3.46e-07	5.176	4.206	1.016
CONTROL VARIABLES					
Gender	4,865	0	1	.544	.498
Age	4,865	1	7	3.557	1.964
Number of families	4,865	0	1	.946	.224
Family size	4,865	2	18	4.863	2.024
Number of own children under 5	4,865	0	1	.063	.243
CENSUS 2					
DEPENDENT VARIABLE					
Higher education attendance	4,734	0	1	.290	.454
EXPLANATORY VARIABLES					
Parental education	4,734	1	6	2.348	1.225
Home ownership	4,665	0	1	.662	.472
Household assets index (z scores)	4,665	3,46e-07	5.176	4.383	.942
CONTROL VARIABLES					
Gender	4,734	0	1	.558	.496
Age	4,734	1	7	3.551	1.972
Number of families	4,734	0	1	.976	.150
Family size	4,734	2	15	4.448	1.762
Number of own children under 5	4,734	0	1	.067	.251

Source: Author's elaboration based on IPUMS International (unweighted calculations).

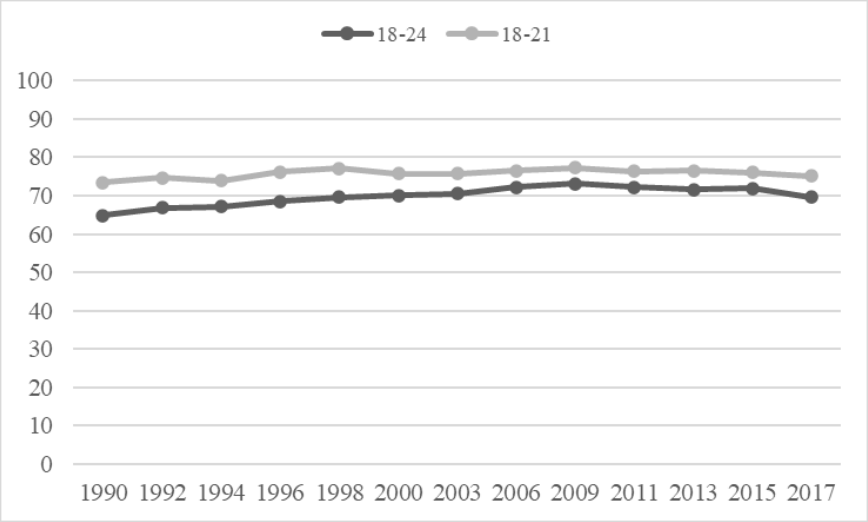
APPENDIX 5:

EVOLUTION IN CO-RESIDENCE RATES IN CHILE BETWEEN 1990 AND 2017

As co-residence has been arisen as a potential bias of the research by the assessors, two trends are evaluated here: first, whether there is a significant variation in the proportion of young adults living in the parental home by age range, considering the group between 18 and 21 and between 18 and 24 years. Then, considering that previous chapters addressed co-residence in Chile until 2002 using census data, I now assess the evolution of co-residence rates until 2017. To do so, I use the National Survey of Socioeconomic Characterisation Survey (CASEN). The following figures, then, illustrates the co-residence rates using the CASEN surveys conducted between 1990 and 2017 (1990, 1992, 1994, 1996, 1998, 2000, 2003, 2006, 2009, 2011, 2013, 2015, and 2017).

Figure 5.1 shows that the differences in the proportion of coresidents by age range are not marked. Despite it is true that the proportion is slightly higher for the group between 18 and 21 years-old, the gap between group tends to reduce across time. Moreover, after 2003 the co-residence rate seems to stabilise for the rest of the period. Due to the small differences between groups and it order to privilege comparability with previous chapter, I decided to continue working with the group of coresidents aged between 18 and 24 years.

FIGURE 5.1: Evolution in the proportion of coresidents by age range in Chile between 1990 and 2017.

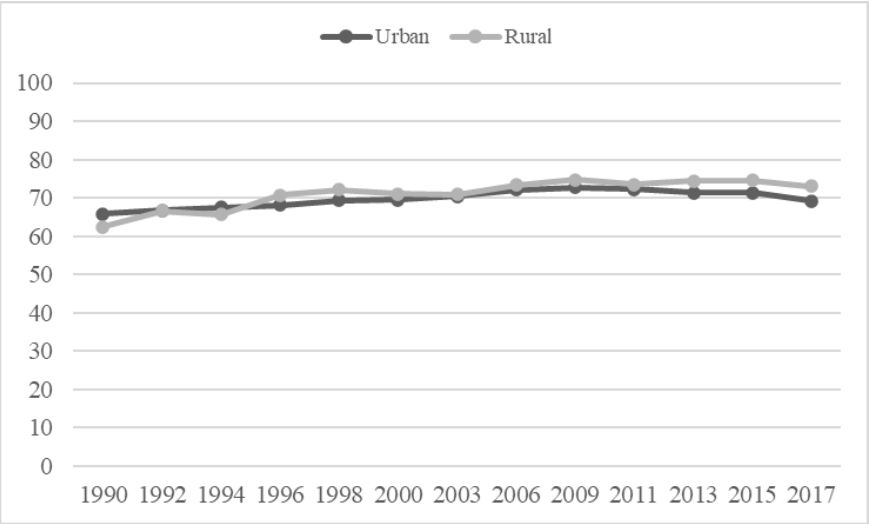


Source: Author's elaboration using CASEN, versions from 1990 to 2017 (unweighted calculations).

Secondly, I characterised the proportion of coresidents aged between 18 and 24 years of age by zone of residence. Figure 5.2 illustrates that there are no marked differences between rural and urban young adults. In fact, there is around 70 percent of young adults residing in their

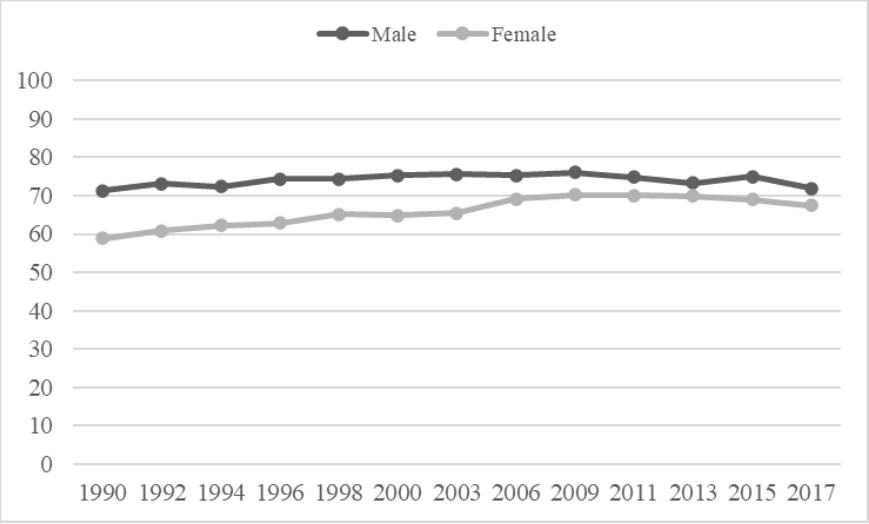
parental homes by 2017, trend that has slightly increased since 1990. Moreover, it is also shown that only recently (after 2011) the proportion of rural coresidents slightly started to surpass the share of their urban counterparts. Due to similarities, I decided to work with coresidents from both areas, and not focusing only on urban respondents as in the part dedicated to Latin America. In addition, presents the distribution of coresidents by gender. It is shown that there are no marked differences between men and women after 2006 as the gap between them has narrowed throughout time. Due to the convergence, I decided to include male and female coresidents into the analyses.

FIGURE 5.2: Evolution in the proportion of coresidents (aged 18-24) by zone of residence in Chile between 1990 and 2017



Source: Author's elaboration based on CASEN version from 1990 to 2017 (unweighted calculations).

FIGURE 5.3: Evolution in the proportion of coresidents (aged 18-24) by gender in Chile between 1990 and 2017.



Source: Author's elaboration based on CASEN versions from 1990 to 2017 (unweighted calculations).

APPENDIX 6:

CORRELATION MATRIX BETWEEN EXPLANATORY VARIABLES

Table 6.1 shows the correlation coefficients between the available explanatory variables. Coefficients above 0.70 indicate that these variables must be removed from analyses.

TABLE 6.1: Correlation matrix between explanatory variables

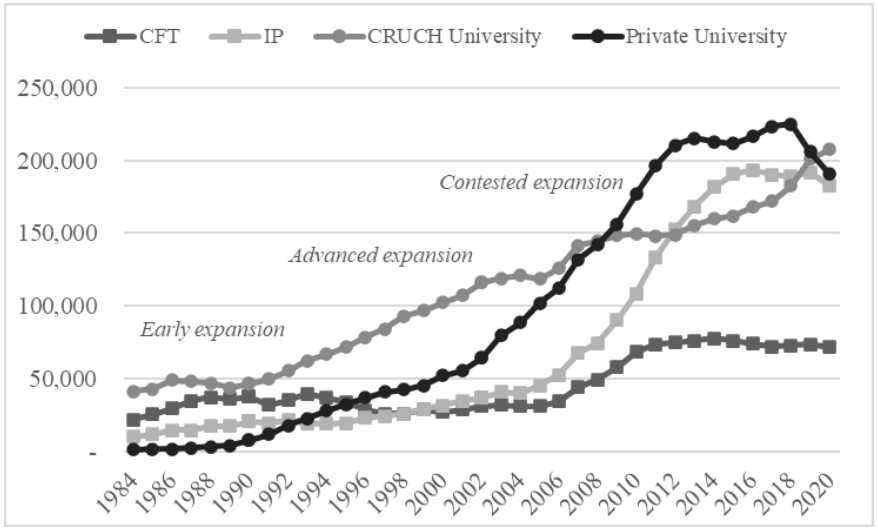
	Survey Year	**Parental Education**	**Household Assets Index**	**Home Ownership**	**Dwelling Ownership**	**Income Quintile**	**Income Decile**	**Household Income (Log)**
Survey Year	1.000							
Parental Education	0.0008	1.000						
Household Assets Index	0.4904	0.2454	1.000					
Home ownership	-0.0780	0.0089	-0.0192	1.000				
Dwelling ownership	-0.0370	0.0343	0.0379	**0.9046**	1.000			
Income Quintile	0.0370	0.3619	0.3576	0.0366	0.0711	1.000		
Income Decile	0.0388	0.3711	0.03673	0.0376	0.0727	**0.9822**	1.000	
Household income (log)	0.2523	0.3672	0.4116	0.0242	**0.7138**	**0.8163**	**0.8433**	1.000

Source: Author's elaboration based on CASEN versions 2003, 2006, 2009, 2011, 2013, 2015, and 2017 (unweighted calculations)

APPENDIX 7:

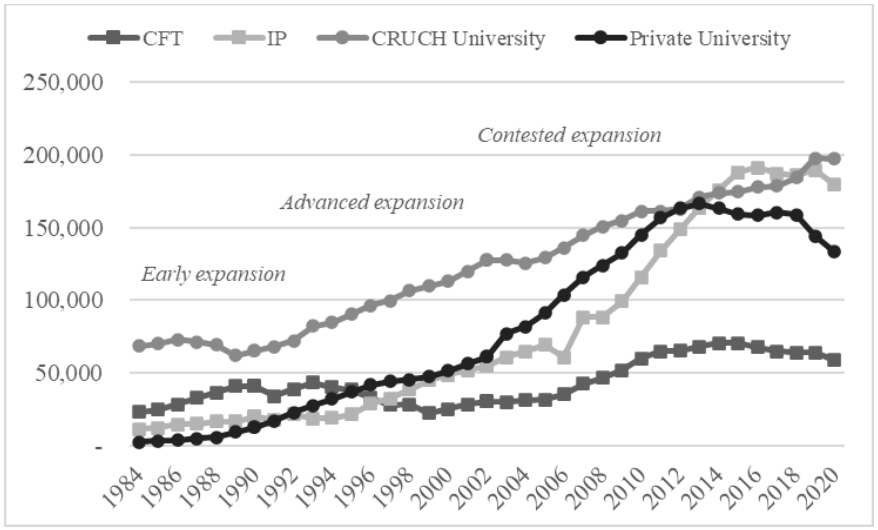
EVOLUTION IN ENROLMENT RATES OF CORESIDENTS (AGED BETWEEN 18 AND 24) BY TYPE OF INSTITUTION AND GENDER IN CHILE BETWEEN 1984 AND 2019

FIGURE 7.1: Evolution in the number of female students in higher education by type of institution between 1984 and 2020



Source: Author's elaboration based on SIES (2018, 2019, 2020).

FIGURE 7.2: Evolution in the number of male students in higher education by type of institution between 1984 and 2020.



Source: Author's elaboration based on SIES (2018, 2019, 2020).

APPENDIX 8:

DESCRIPTIVE STATISTICS BY CASEN SURVEY BETWEEN 2003 AND 2017

TABLE 8.1: Descriptive statistics for CASEN 2003.

NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLES					
Attendance to higher education	18,460	.247	.431	0	1
Attendance to higher education tracks	18,460	.338	.636	0	2
Attendance to higher education institutions	17,729	.424	.930	0	4
2. EXPLANATORY VARIABLES					
2.1. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	18,410	4.269	1.145	1	6
2.2. PARENTAL ECONOMIC RESOURCES					
Home ownership	18,484	.789	.407	0	1
Household assets index (z scores)	18,484	1.039	.620	2.21e-07	3.963
Disposable household income (log)	18,281	12.638	.970	5.799	18.402
3. CONTROL VARIABLES					
3.1. RESPONEDENT'S DEMOGRAPHICS					
Male	18,484	.606	.488	0	1
Age	18,484	2.534	1.963	0	6
Indigenous background	18,478	.104	.305	0	1
3.2. HOUSEHOLD LOCATION					
Urban area	18,484	.644	.478	0	1
Major Metropolitan area	18,484	.499	.500	0	1
3.3. HOUSEHOLD STRUCTURE					
Family size	8,484	5.080	1.780	2	23
Two-parent household	18,484	.995	.065	0	1
Female-headed household	18,484	.004	.068	0	1

TABLE 8.2: Descriptive statistics for CASEN 2006.

NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLES					
Attendance to higher education	19,057	.301	.458	0	1
Attendance to higher education tracks	19,057	.405	.670	0	2
Attendance to higher education institutions	18,062	.510	.981	0	4
2. EXPLANATORY VARIABLES					
2.1. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	18,980	2.881	1.370	1	6
2.2. PARENTAL ECONOMIC RESOURCES					
Home ownership	19,073	.760	.426	0	1
Household assets index (z scores)	19,079	2.100	.921	2.21e-07	3.963
Disposable household income (log)	18,919	12.893	.910	5.099	17.991
3. CONTROL VARIABLES					
3.1. RESPONDENTS DEMOGRAPHICS					
Male	19,079	.592	.491	0	1
Age	19,079	2.470	1.982	0	6
Indigenous background	19,064	.104	.306	0	1
3.2. HOUSEHOLD LOCATION					
Urban area	19,079	.644	.478	0	1
Major Metropolitan area	19,079	.476	.499	0	1
3.3. HOUSEHOLD STRUCTURE					
Family size	19,079	4.826	1.632	2	19
Tw-parent household	19,079	.797	.401	0	1
Female-headed household	19,079	.229	.420	0	1

TABLE 8.3: Descriptive statistics for CASEN 2009.

NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLES					
Attendance to higher education	18,977	.342	.474	0	1
Attendance to higher education tracks	18,977	.467	.705	0	2
Attendance to higher education institutions	17,859	.599	1.038	0	4
2. EXPLANATORY VARIABLES					
2.1. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	18,908	2.953	1.367	1	6
2.2. PARENTAL ECONOMIC RESOURCES					
Home ownership	18,977	.725	.446	0	1
Household assets index (z scores)	18,97	2.344	.916	2.21e-0	3.963
Disposable household income (log)	18,603	13.051	.895	6.987	17.049
3. CONTROL VARIABLES					
3.1. RESPONDENT'S DEMOGRAPHICS					
Male	18,977	.576	.494	0	1
Age	18,977	2.500	1.940	0	6
Indigenous background	18,977	.111	.314	0	1
3.2. HOUSEHOLD LOCATION					
Urban area	18,977	.667	.471	0	1
Major Metropolitan area	18,977	.495	.499	0	1
3.3. HOUSEHOLD STRUCTURE					
Family size	18,977	4.636	1.506	2	16
Two-parent household	18,977	.782	.412	0	1
Female-headed household	18,977	.257	.437	0	1

TABLE 8.4: Descriptive statistics for CASEN 2011.

NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLES					
Attendance to higher education	31,136	.429	.495	0	1
Attendance to higher education tracks	31,136	.540	.685	0	2
Attendance to higher education institutions	29,186	.761	1.089	0	4
2. EXPLANATORY VARIABLES					
2.1. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	31,030	3.651	1.471	1	6
2.2. PARENTAL ECONOMIC RESOURCES					
Home ownership	31,136	.722	.447	0	1
Household assets index (z scores)	31,136	2.521	.885	2.21e-07	3.963
Disposable household income (log)	30,876	13.313	.907	5.83	17.34
3. CONTROL VARIABLES					
3.1. RESPONDENT'S DEMOGRAPHICS					
Male	31,136	.576	.494	0	1
Age	31,136	2.579	1.953	0	6
Indigenous background	31,136	.129	.336	0	1
3.2. HOUSEHOLD LOCATION					
Urban area	31,136	.816	.386	0	1
Major Metropolitan area	31,136	.326	.469	0	1
3.3. HOUSEHOLD STRUCTURE					
Family size	31,136	4.492	1.522	2	20
Two-parent household	31,136	.810	.392	0	1
Female-headed household	31,136	.232	.422	0	1

TABLE 8.5: Descriptive statistics for CASEN 2013.

NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLES					
Attendance to higher education	16,808	.484	.499	0	1
Attendance to higher education tracks	16,808	.622	.714	0	2
Attendance to higher education institutions	15,518	.883	1.164	0	4
2. EXPLANATORY VARIABLES					
2.1. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	16,778	3.780	1.469	1	6
2.2. PARENTAL ECONOMIC RESOURCES					
Home ownership	16,851	.703	.456	0	1
Household assets index (z scores)	16,849	2.581	.885	2.21e-07	3.963
Disposable household income (log)	16,701	13.236	.851	7.130	17.526
3. CONTROL VARIABLES					
3.1. RESPONDENT'S DEMOGRAPHICS					
Male	16,851	.570	.494	0	1
Age	16,851	2.685	1.961	0	6
Indigenous background	16,810	.137	.343	0	1
3.2. HOUSEHOLD LOCATION					
Urban area	16,851	.830	.374	0	1
Major Metropolitan area	16,851	.428	.494	0	1
3.3. HOUSEHOLD STRUCTURE					
Family size	16,851	4.365	1.486	2	17
Two-parent household	16,851	.809	.392	0	1
Female-headed household	16,851	.220	.414	0	1

TABLE 8.6: Descriptive statistics for CASEN 2015.

NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLES					
Attendance to higher education	18,193	.516	.499	0	1
Attendance to higher education tracks	18,193	.670	.727	0	2
Attendance to higher education institutions	16,540	.983	1.230	0	4
2. EXPLANATORY VARIABLES					
2.1. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	18,127	3.15	1.533	1	6
2.2. PARENTAL ECONOMIC RESOURCES					
Home ownership	18,205	.699	.458	0	1
Household assets index (z scores)	18,205	2.699	.888	2.21e-07	3.963
Disposable household income (log)	18,080	13.382	.871	5.521	17.424
3. CONTROL VARIABLES					
3.1. RESPONDENT'S DEMOGRAPHICS					
Male	18,205	.575	.494	0	1
Age	18,205	2.728	1.975	0	6
Indigenous background	18,196	.134	.341	0	1
3.2. HOUSEHOLD LOCATION					
Urban area	18,205	.805	.395	0	1
Major Metropolitan area	18,205	.491	.499	0	1
3.3. HOUSEHOLD STRUCTURE					
Family size	18,205	4.260	1.443	2	15
Two-parent household	18,205	.770	.420	0	1
Female-headed household	18,205	.263	.440	0	1

TABLE 8.7: Descriptive statistics for CASEN 2017.

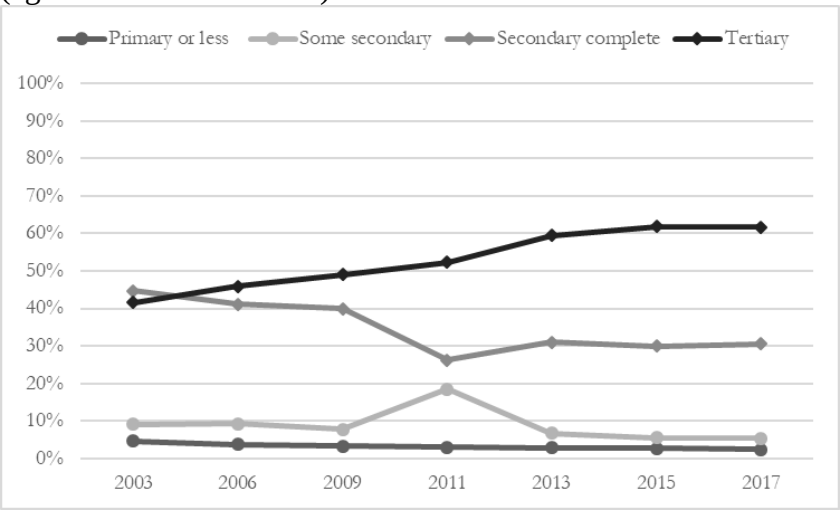
NAME	N	Mean	SD	Min	Max
1. DEPENDENT VARIABLES					
Attendance to higher education	14,276	.538	.498	0	1
Attendance to higher education tracks	14,276	.670	.714	0	2
Attendance to higher education institutions	12,571	.893	1.141	0	4
2. EXPLANATORY VARIABLES					
2.1. PARENTAL SOCIOCULTURAL RESOURCES					
Parental education	14,166	3.146	1.627	1	6
2.2. PARENTAL ECONOMIC RESOURCES					
Home ownership	14,276	.666	.47	0	1
Household assets index (z scores)	14,276	3.08	.680	2.21E-07	3.963
Disposable household income (log)	14,142	13.437	.864	6.725	18.281
3. CONTROL VARIABLES					
3.1. RESPONDENT'S DEMOGRAPHICS					
Male	14,276	.559	.496	0	1
Age	14,276	2.763	1.974	0	6
Indigenous background	14,259	.143	.350	0	1
3.2. HOUSEHOLD LOCATION					
Urban area	14,276	.835	.370	0	1
Major Metropolitan area	14,276	.395	.489	0	1
3.3. HOUSEHOLD STRUCTURE					
Family size	14,276	4.120	1.389	2	121
Two-parent household	14,276	.639	.480	0	1
Female-headed household	14,276	.442	.496	0	1

APPENDIX 9:

EVOLUTION IN EDUCATIONAL ATTAINMENT FOR CORESIDENTS (AGED BETWEEN 18 AND 24) BY GENDER IN CHILE BETWEEN 2003 AND 2017

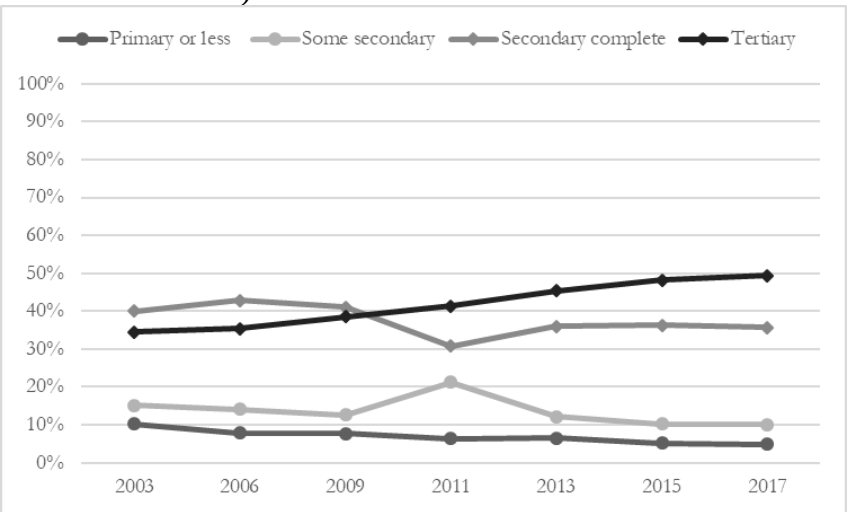
When analysing the evolution of enrolment by gender, there is a reversal in the gender gap at the end of the period. Figure 9.1 illustrates that, until 2015, women with primary education experience a sharp decline; as well as women with some or completed tertiary education. Figure 9.2 shows that men follow these trends, but at a slower pace; without experiencing at stagnation among those with higher education. Throughout this period, women maintain their advantage at the higher educational levels as well as regarding the average years of education (see Table 9.1)

FIGURE 9.1: Evolution in educational attainment (proportions) among *female* coresidents (aged between 18 and 24) in Chile between 2003 and 2017.



Source: Author's elaboration based on CASEN, versions between 2003 and 2017 (weighted calculations).

FIGURE 9.2: Evolution in educational attainment (proportion) among *male* coresidents (aged between 18 and 24) in Chile between 2003 and 2017.



Source: Author's elaboration based on CASEN, versions between 2003 and 2017 (weighted calculations).

TABLE 9.1: Evolution in average years of education among coresidents (aged between 18 and 24) by gender in Chile between 2003 and 2017.

CASEN Survey	2003	2006	2009	2011	2013	2015	2017
Years of education for women	12.6	12.7	12.9	13.0	13.2	13.3	13.3
Years of education for men	11.9	12.2	12.3	12.4	12.5	12.7	12.8

Source: Author's elaboration based on CASEN, versions 2003 to 2017 (weighted calculations).