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April 18th, 2023

Dear Members of the Selection Committee:

I am writing to apply for one of the Review of Economics and Statistics Fellowships to attend the NBER Summer Institute in July 2023. I received my Ph.D. from the Department of Economics of LSE in July 2019, and recently completed a postdoc at the Department of Economics of MIT. Currently, I am an Assistant Professor at the School of Business and Economics of the Universidad de Los Andes, and an associate at the Centre for Economic Performance at LSE. I recently had to move back to Chile for family reasons, but I am trying to keep connected with academics in the US and in Europe to hopefully continue contributing to my fields of interest.

I am a labor and public economist who primarily works on economics of education. I am particularly interested in understanding how family and social networks shape human capital investment decisions, as well as the role that they play in shaping inequality and intergenerational mobility. I am also interested in understanding how the distribution of school inputs and the organization of educational systems affect students' outcomes. Through my research, I aim to contribute to understanding and tackling inequality on educational attainment and on access to opportunities. In my work, I use quasi-experimental and experimental designs and often work with policymakers to bring my research into practice. Although an important part of my research focuses on Chile, I have projects studying settings as different as Brazil, China, Croatia, Greece, Finland, Sweden, Spain and the United States. Independently of the setting I study, I always aim to work on research projects that are relevant globally.

I am convinced that attending the Summer Institute would help my professional career by allowing me to interact with leading researchers in my fields of interest and receive feedback on the projects in which I am currently working. I also believe that I could contribute to the event by sharing my experience with others. I would consider a privilege having the opportunity to participate of the Labor Studies, Crime, Education or Public Economics meetings.

In support of this application, I have attached my CV, and a recent paper I wrote entitled "Elite Universities and the Intergenerational Transmission of Human and Social Capital".

Please, let me know if I can provide any additional information.

Sincerely yours,

Andrés Barrios Fernández

ANDRÉS BARRIOS FERNÁNDEZ

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EDUCATION

Ph.D.in Economics 2013-2019
Thesis title: Essays in Economics of Education
London School of Economics and Political Science

M.Res. in Economics 2013-2015
London School of Economics and Political Science

M.Sc. in Engineering 2009-2010
Pontificia Universidad Católica de Chile

B.Sc. in Engineering 2003-2009
Pontificia Universidad Católica de Chile

TEACHING EXPERIENCE

Graduate Teaching Assistant 2014-2019
London School of Economics and Political Science

- EC212 Introduction to Econometrics (Summer School).
- EC220 Introduction to Econometrics.
- EC221 Principles of Econometrics.
- EC270 Public Finance.
- EC325 Public Economics.
- Course manager (EC220).
- Academic Mentor.

Lecturer 2012-2013
School of Engineering, Pontificia Universidad Católica de Chile

- ICS1513 Economics Principles

RELEVANT POSITIONS HELD

Assistant Professor 2022-present
School of Business and Economics. Universidad de Los Andes.
Santiago, Chile.

Postdoc Fellow 2021-2022
Department of Economics. MIT. Cambridge, MA, USA.

Research Affiliate 2021-present
Centre for Economics Policy Research. London, UK.

Associate 2019-present
Centre for Economics Performance, LSE. London, UK.

Senior Researcher 2019-present
VATT Institute of Economic Research, Helsinki, Finland.

Research Assistant 2018
National Bureau of Economics Research. Cambridge, USA.

PUBLISHED PAPERS

Neighbors' Effects on University Enrollment (American Economic Journal: Applied Economics)

This paper provides causal evidence that close neighbors significantly influence potential applicants decision to attend university. I create a unique dataset combining detailed geographic information and individual educational records in Chile, and exploit the quasi-random variation generated by student loans eligibility rules. I find that potential applicants are significantly more likely to attend and complete university when their closest neighbor-defined as the closest individual applying to university one year before-becomes eligible for a student loan and enrolls in university. This increase in enrollment is mediated by an increase in the probability of taking the admission exam and applying to university. The closest neighbor typically lives 0.09 km away, and neighbors influence decays with distance. My results highlight the importance of social influences for university enrollment decisions and suggest that financial aid and university access policies may have important spillover effects.

O Brother, Where Start Thou? Sibling Spillovers on College and Major Choice in Four Countries (The Quarterly Journal of Economics) with A. Altmejd, M. Drlje, J. Goodman, M. Hurwitz, D. Kovac, C. Mulhern, C. Neilson and J. Smith.

Family and social networks are widely believed to influence important life decisions but causal identification of those effects is notoriously challenging. Using data from Chile, Croatia, Sweden, and the United States, we study within-family spillovers in college and major choice across a variety of national contexts. Exploiting college-specific admissions thresholds that directly affect older but not younger siblings college options, we show that in all four countries a meaningful portion of younger siblings follow their older sibling to the same college or college-major combination. Older siblings are followed regardless of whether their target and counterfactual options have large, small or even negative differences in quality. Spillover effects disappear, however, if the older sibling drops out of college, suggesting that older siblings college experiences matter. That siblings influence important human capital investment decisions across such varied contexts suggests that our findings are not an artifact of particular institutional detail but instead a more generalizable description of human behavior. Causal links between the postsecondary paths of close peers may partly explain persistent college enrollment inequalities between social groups and suggests that interventions to improve college access may have multiplier effects.

It's Time to Learn: School Institutions and Returns to Instruction Time (Economics of Education Review) with G.Bovini.

This paper investigates whether the effects of a reform that substantially increased daily instruction time in Chilean primary schools vary depending on school institutions. Focusing on incumbent students and exploiting an IV strategy, we find that longer daily schedules increase reading scores at the end of fourth grade and that the benefits are greater for pupils who began primary education in no-fee charter schools rather than in public schools. We provide evidence that these two types of publicly subsidized establishments, which cater to similar students but differ in their degree of autonomy, expand the teaching input in different ways: in order to provide the additional instruction time, no-fee charter schools rely more on hiring new teachers and less on increasing teachers working hours than public schools do.

JOB MARKET PAPER

Elite Universities and the Intergenerational Transmission of Human and Social Capital with C.Neilson and S.Zimmerman

Do elite colleges help talented students from modest backgrounds join the social elite, or help incumbent elites retain their positions? We combine five decades of linked data on parents and children in Chile with a regression discontinuity design to show that, in the long run, elite colleges in fact do both. We first document intertwined intergenerational persistence in academic achievement and social status. Mean child rank on college admissions exams is linear in parent rank, with higher intercepts and flatter slopes for children whose parents attend a set of high-status, high-tuition private high schools. At the same time, children of high-status parents are more likely to attend high-status high schools and enroll in elite college degree programs, with gaps increasing in parents exam rank. We then show that parents access to elite colleges raises child social capital, but not human capital. Children of lower-status parents just above the threshold for admission to elite degree programs score no better on college entrance exams than children of parents just below, but are 21% more likely to attend a high-status private high school. Social and spousal links to high-status college peers are the key mechanism. Combining our descriptive and quasi-experimental estimates in a VAR model of social and academic mobility shows that elite universities raise both the intergenerational correlation between parent and child social capital and the cross-sectional correlation between social and human capital. Elite universities thus reduce social capital mobility but shift its distribution along meritocratic lines, towards academic high-achievers.

WORKING PAPERS & ONGOING WORK

Recidivism and Neighborhood Institutions: Evidence from the Rise of the Pentecostal Church in Chile *(R&R Journal of Labor Economics) with Jorge García-Hombrados.*

Rehabilitating convicted criminals is challenging; indeed, an important share of them return to prison only a few years after their release. Thus, finding effective ways of encouraging crime desistance, particularly among young individuals, has become an important policy goal to reduce crime and incarceration rates. This paper provides causal evidence that the local institutions of the neighborhood that receives young individuals after prison matter. Specifically, we show that the opening of an Evangelical church reduces twelve-months re-incarceration rates among property crime offenders by more than 10 percentage points. This effect represents a drop of 16% in the probability of returning to prison for this group of individuals. We find smaller and less precise effects for more severe types of crime. We discuss three classes of mechanisms that could explain our results: social support, promotion of evangelical values, and social monitoring. We provide evidence that the social support provided by evangelical churches is an important driver of our findings. This suggests that non-religious local institutions could also play an important role in the rehabilitation of former inmates.

Closing Gaps in Higher Education Trajectories: The Effect of Targeted Information and Mentorship *with Josefina Eluchans-Errázuriz and Fernanda Ramírez-Espinoza*

Using a randomized controlled trial (RCT), this project aims to assess whether the provision of targeted information and mentoring to students attending vocational high schools affect the quantity and type of post-secondary studies they pursue and their higher education aspirations. The RCT randomly assigned 80 high schools to the control group, 80 high schools to an information-only treatment group, and 80 high schools to a combination of information and mentoring treatment group. The mentoring treatment is randomly assigned to only a few students per class, a feature that will allow us to study the spillovers of the mentoring program on the social

network of treated individuals. With this last part of the experiment, we aim to understand to which extent social spillovers could be used to design more efficient and effective interventions to help students to make informed decisions about their post-secondary education trajectories.

Inequality in College Applications: Evidence from Three Continents *with A.Altjmed, A.Bizopoulou, M.Kaila, R. Megalokonomou, C.Neilson, S.Otero, and X.Ye*

This paper documents large gaps in the fields and in the quality of the college programs to which individuals from different social and gender groups apply in Brazil, Chile, China, Finland, Greece, Sweden, and Spain. These seven countries significantly differ in size, economic development, culture, and geographic location. However, in all of them, universities select their students through centralized admissions. This feature of their higher education systems allows us to study differences in college applications conditioning on the only factor that colleges can consider to select their students—i.e., students' academic performance. We find that individuals from low-educated households consistently apply to worse-quality college programs measured by peer test scores. Indeed, low-SES students in the top decile of our measure of academic performance apply to programs in which admitted students score between 0.1σ and 0.2σ below than the students admitted to the programs to which similarly talented students from high-SES backgrounds apply. In addition, we document a large and significant gender gap in preferences for fields of study. Women are between 20 and 40 percentage points less likely to apply to STEM degrees, and between 10 and 30 percentage points more likely to apply to health degrees in all the countries we study. Our results suggest that closing gaps in academic performance is not enough to eliminate inequality in college trajectories across gender and social groups. There are important differences in the institutions and programs to which individuals with similar choice sets, but different gender or socioeconomic origin apply.

Teacher Value Added and Gender Gaps on Educational Outcomes *with Marc Riudavets-Barcons.*

This paper estimates teacher value-added (TVA) models to study differences in teacher effectiveness for male and female students. Taking advantage of rich administrative data from Chile, we build a unique dataset that allows us to link students with their eighth-grade math and reading teachers, and follow them in high school and in their transition to higher education. We estimate TVA in test scores and in an educational attainment index, and show that differences on teacher effectiveness explain an important part of the gender gaps we observe on standardized tests and on postsecondary education trajectories. Next, using survey data covering the universe of eight-grade students and their math teachers, we explore whether teachers' characteristics and practices explain the differences that we document on teacher effectiveness. Although we do not find important differences in the relationship between teachers practices and their effectiveness for male and female students, we do find significant associations that suggest that certain teaching practices benefit both male and female students.

(Dis)Connecting People: Labor Market Consequences of the Nokia Decline *with Jarkko Harju and Tuomas Matikka*

This paper exploits a large shock that affected the Finnish telecommunications industry—i.e., the launch of the iPhone and of the Android operative system and the decline of Nokia that followed—to study how different types of displaced workers responded to the shock. Using Finnish administrative registers we are able to follow individuals displaced from Nokia for up to eight years after the shock. Preliminary analyses show

that although all displaced workers suffered important losses in the labor market, high-skill individuals were more likely to recover. Despite the availability of a special support program, workers displaced from Nokia were more likely to be unemployed or out of the labor force three years after the shock than similar workers displaced from their jobs in the same period. The availability of seed capital as part of the exit agreement offered by Nokia made many of its high-skill workers to start new businesses. However, in comparison to firms started by similar individuals around the same time, the firms started by ex-Nokia employees have lower survival rates and turnover.

REFERENCES

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FELLOWSHIPS AND GRANTS

OP Research Foundation (USD 30,000)	*2022*
Yrjo Jahnsson Foundation (USD 45,000)	*2022*
Spencer Foundation Small Research Grant (USD 37,500)	*2022*
Yrjo Jahnsson Foundation (USD 55,000)	*2021*
MueveTP Project Incubator. Fundación Luksic (USD 150,000)	*2021*
Department of Economics Fellowship, LSE.	*2014-2018*
Ph.D. Fellowship, CONICYT.	*2013-2018*

COMPUTER SKILLS

Stata, Matlab, ArcGIS, C++, R, Python.

LANGUAGES

Spanish (native), English (fluent).

PROFESSIONAL ACTIVITIES

Referee: Economica, Economic Journal, Economics of Education Review, Journal of Human Capital, Journal of Human Resources, Journal of Political Economy: Microeconomics, Journal of Public Economics, Journal of Policy and Management.

CONFERENCES

7th IZA Workshop: The Economics of Education *Online.*	*2022*
NBER Summer Institute: Children *Cambridge, MA, US.*	*2022*
NBER Summer Institute: Urban Economics *Cambridge, MA, US.*	*2022*
Econometrics Society: North America Meeting *Miami, FL, US.*	*2022*

Society of Labor Economists Meeting *Minneapolis, US.*	*2022*
CESifo Area Conference on Labor Economics *Munich, Germany.*	*2022*
NBER, Economics of Education Spring Meeting *Stanford, US.*	*2022*
WEAI 96th Annual Conference *Online.*	*2021*
Royal Economic Society 2021 Annual Meeting *Online.*	*2021*
5th IZA Workshop: The Economics of Education *Bonn, Germany.*	*2020*
Econometric Society Virtual World Congress. *Milan, Italy.*	*2020*
30th European Economic Association Congress. *Rotterdam, Netherlands.*	*2020*
Sixth LEER Conference on Education Economics *Leuven, Belgium.*	*2020*
XXVII Meeting on Public Economics *Barcelona, Spain.*	*2020*
LEER Workshop: Improving Quality and Returns to Education *Leuven, Belgium.*	*2019*
Econometric Society Winter Meeting. *Naples, Italy.*	*2018*
43rd Simposio de la Asociación Espanola de Economía (SAEe). *Madrid, Spain.*	*2018*
3rd IZA Workshop: The Economics of Education. *Bonn, Germany.*	*2018*
European Doctoral Program Jamboree. *Florence, Italy.*	*2018*
Annual Conference of the European Association of Labor Economists. *St. Gallen, Switzerland.*	*2017*
International Workshop on Applied Economics of Education. *Catanzaro, Italy.*	*2017*
LEER Workshop on Education Economics. *Leuven, Belgium.*	*2017*

Elite Universities and the Intergenerational Transmission of Human and Social Capital[†]

Andrés Barrios-Fernández Christopher Neilson Seth Zimmerman

October 10, 2022

Latest Version

Abstract

Do elite colleges help talented students from modest backgrounds join the social elite, or help incumbent elites retain their positions? We combine five decades of linked data on parents and children in Chile with a regression discontinuity design to show that, in the long run, elite colleges in fact do both. We first document intertwined intergenerational persistence in academic achievement and social status. Mean child rank on college admissions exams is linear in parent rank, with higher intercepts and flatter slopes for children whose parents attend a set of high-status, high-tuition private high schools. At the same time, children of high-status parents are more likely to attend high-status high schools and enroll in elite college degree programs, with gaps increasing in parents' exam rank. We then show that parents' access to elite colleges raises child social capital, but not human capital. Children of lower-status parents just above the threshold for admission to elite degree programs score no better on college entrance exams than children of parents just below, but are 21% more likely to attend a high-status private high school. Social and spousal links to high-status college peers are the key mechanism. Combining our descriptive and quasi-experimental estimates in a VAR model of social and academic mobility shows that elite universities raise both the intergenerational correlation between parent and child social capital and the cross-sectional correlation between social and human capital. Elite universities thus reduce social capital mobility but shift its distribution along meritocratic lines, towards academic high-achievers.

JEL Codes: I24, D64, J62

Keywords: Elite universities, intergenerational mobility, human capital, social capital.

[†] We thank David Autor, Peter Ganong, Stephen Machin, Steve Pischke, Hannes Spinnewijn, Christian Wolf, and numerous seminar participants for helpful comments. For granting us access to the administrative data we use in this project, we thank the Chilean Ministry of Education and DEMRE. Supplemental materials are available in the Online Appendix.

1 Introduction

Do elite universities integrate or reproduce the elite? This question is fundamental to the academic and popular debate over the social role of elite higher education, but the evidence is ambiguous. On the one hand, students from low- and middle-income families who enroll in elite colleges go on to earn more than similar students who enroll in less selective colleges. On the other hand, most students at elite colleges come from high-income families (Chetty et al., 2020), and within elite universities, students from the highest-status families are much more likely to go on to top incomes and top jobs (Zimmerman, 2019; Michelman et al., 2022).

A central challenge in adjudicating this debate is that it is multi-generational and multi-dimensional. Both academic and social preparation are important mediators of access to and success within elite universities (Arcidiacono and Lovenheim, 2016; Rivera, 2016; Jack, 2019). Further, elite education may shape the way both human and social capital evolve across generations. Quantifying these effects is difficult because, in addition to the standard challenges associated with causal inference, it requires measuring outcomes across multiple generations.

This paper combines five decades of data on educational outcomes for parents and children in Chile with a regression discontinuity design to show that elite colleges shape the transmission of social capital, but not human capital, across generations. We have three main findings. First, the intergenerational evolution of academic achievement and social status are intertwined. Mean child rank on college admissions exams is linear in parent rank, with higher intercepts and flatter slopes for children whose parents attend high-status, high-tuition private high schools. At the same time, children of high-status parents are more likely to attend high-status high schools and enroll in elite college programs. Second, children of lower-status parents admitted to elite degree programs score no better on admissions exams than children of parents who are marginally rejected, but are 21% more likely to attend high-status high schools. Parents' social links to high-status college peers are the key mechanism. Third, linking our descriptive and quasi-experimental results through a stylized model of intergenerational mobility shows that elite universities reduce social capital mobility but shift its distribution along meritocratic lines, towards academic high-achievers.

Chile is perhaps the only setting in which it is feasible to conduct this type of analysis at present. Three features of Chilean institutions are critical. The first feature is the availability of administrative educational records spanning more than five decades and containing family identifiers that allow us to link parents with their children.

The second feature is that Chilean universities have used an exam-based centralized admission system since the late 1960s. The centralized admission system generates sharp admission cutoffs in all oversubscribed college-by-major combinations (henceforth, "programs"). We exploit discontinuities in admissions outcomes generated by the cutoff rules to estimate the causal effects of admission to elite degree programs using a regression discontinuity design. This approach compares outcomes for children whose parents were just above the cutoff to those whose parents were just below, isolating the effect of elite

admission from the effect of other potential confounders that could influence children's trajectories.

The third feature is the presence of well-studied universities and exclusive private schools that allow for clear definitions of elite college programs and proxies for social capital. On the university side, we identify eight elite degree programs at the top two Chilean universities. These programs, focused on either business or medicine, are among the most selective programs at the national level. They are associated with the highest levels of earnings, and according to Zimmerman (2019) their students account for roughly 40% of top 0.1% incomes and corporate leadership positions despite making up roughly 2% of college-eligible high school graduates.

On the high school side, we identify a set of exclusive private K-12 schools that serve as our measures of elite social capital. These schools, which have high tuition fees and admission processes that advantage the children of alumni, play a central role in descriptive accounts of the Chilean social and economic elite. One way to think of them is as the Chilean equivalents of schools like Eton College in the UK or Phillips Exeter in the US. They send disproportionate shares of their graduates to elite college programs, and, conditional on enrolling in an elite program, these students are much more likely than others to attain top incomes and corporate roles (Zimmerman, 2019). Social capital is a notoriously challenging concept to pin down (Dasgupta and Serageldin, 1999; Guiso et al., 2011). However, our conception of elite private schools as loci of social capital formation lies at the intersection of several leading definitions, including Coleman (1988)'s description of social capital as "a stock of productive matter ... [that] is part of a community, [or] a network" and Bourdieu (1986)'s definition of the term as resources linked to membership of a group. Both Coleman and Bourdieu (1998) take exclusive educational institutions as leading examples of sites of the production of social capital.

We begin our empirical analysis by establishing three facts about the way that social capital mediates the evolution of human capital across generations, and the extent to which the joint evolution of social and human capital depends on elite university attendance. First, we show that the relationship between parent and child test scores is approximately linear in rank, with the intercept and slope of the rank-rank relationship depending on social capital. At the bottom of the parent score distribution, children whose mothers attended an elite private K-12 school score 17 percentiles higher on average than children whose mothers attended a subsidized school. The children of the lowest-scoring elite school mothers perform similarly to children of subsidized-school mothers with scores near the median. This gap closes as mothers' scores rise, falling to 7.1 percentiles for top-scoring mothers. Social capital also predicts outcomes in higher education: children whose mothers attended elite private schools are more likely to enroll in elite college programs.

Second, we show that social capital itself is both highly persistent and increasing in mother's human capital. 65% of children whose mothers scored at the top of the test score distribution and attended an elite private school go on to attend an elite private school themselves, compared to 30% of children whose mothers scored at the 25th percentile of the distribution. In contrast, only 15% of children whose mothers obtained top exam

scores and attended a subsidized school go on to attend elite private schools. Children of high scoring, low social capital mothers are considerably less likely to reach the top of the social capital distribution than the children of low scoring, high social capital mothers.

Third, we show that elite higher education predicts children's social and human capital even after controlling for parents' pre-college social and human capital. Focusing on top-scoring mothers—those within the top 1% of the test score distribution, for whom elite college attendance is a realistic option—we show that low social capital mothers admitted to elite college programs are 33% more likely to have children with top 1% test scores, 60% more likely to send their children to elite private schools, and 23% more likely to have a child who enrolls in an elite college program. These findings suggest that elite colleges may play a role in expanding access to the tops of the human and social capital distributions across generations. However, these differences may also be driven by selection into elite colleges on the basis of attributes that we do not observe.

The second part of our empirical analysis uses a regression discontinuity design to provide causal evidence on how admission to elite college programs shapes social and human capital for one's children. Using data on applications submitted to Chile's centralized assignment mechanism between 1977 and 2003, we compare children's outcomes for parents just above and below the admissions cutoffs at elite degree programs. We find no evidence of fertility effects at the cutoff, limiting concerns about differential censoring of children's outcomes.

Parents' admission to an elite degree program raises children's social capital. In the full sample, parents' admission to an elite university raises the chances their children attend an elite private school by 4.5 percentage points, 21% of the below-threshold mean of 21.6%. For parents who did not attend elite private schools, the gain is 3.3 percentage points, a 21% gain over a below-threshold mean of 15.8%.

Elite admission does not increase children's human capital. When parents cross the elite admissions cutoff, their children's test scores are unaffected. Despite null effects on human capital, children whose parents are admitted to elite college programs enroll in more selective colleges themselves, driven by changes in application behavior.

We next unpack the mechanisms underlying the effects of elite college on social capital mobility. We first show that the increase in elite high school attendance does not result from generic increases in educational expenditures. Parents admitted to elite college programs spend a little more on their children's education, but they do not send their children to just any expensive school. Admission to an elite college program does not change the likelihood that one's children attend expensive but non-elite private schools. It only affects the probability that children attend elite private schools. A mechanism with more support in the data is changes in marriage market matching. Low social capital students admitted to an elite degree program become more likely to marry other elite college students, including those who graduated from elite private schools. Spouse test scores do not increase, consistent with the absence of human capital effects for children. Finally, we show that parents' elite admission shapes children's residential environments similarly to how it shapes their school environments; i.e. by shifting them towards higher status peers

but not more expensive areas.

To shed more light on the relative importance of different college inputs in determining intergenerational social capital mobility, we expand our focus to the full set of higher education programs in Chile and bring in data on applicants' full lists of preferences over programs. Though not available for the full set of years that we use in our main analysis, the expanded dataset lets us separate the effects of different elements of the bundle of attributes available at elite colleges. We focus on exposure to high human capital peers, exposure to high social capital peers, and the marriage market exposure of low social capital students to high social capital students. Our results show that social capital and marriage market exposure are the key drivers of upward social capital mobility for one's children. High human capital peers have zero or negative effects on both human and social capital conditional on other peer attributes.

Further supporting the idea that the key college inputs are social, we show that the group identities of parents' college peers shape the specific elite high schools their children attend. Many elite private high schools in Chile are affiliated with conservative Catholic groups. When threshold-crossing shifts parents into degree programs with higher exposure to peers from these high schools, the chances their children attend conservative Catholic high schools increase, but the chances they attend other elite high schools do not.

To conclude, we assess the magnitude of elite universities' effects on intergenerational mobility using a stylized vector autoregression (VAR) model of college attendance, spouse selection, and capital transmission. Similar in spirit to Kremer (1997)'s study of assortative matching or Chetty et al. (2019)'s forward projection of racial income gaps in the US, the goal of this exercise is to ask whether reasonable estimates of mobility parameters are consistent with a large or small role for elite universities as a causal determinant of mobility. In the model, human and social capital shift college "eliteness," and then all three factors shape spouse human capital, social capital, and college quality, which combine with one's own attributes to determine child human and social capital. We calibrate the effects of college eliteness on child and spouse attributes using regression discontinuity estimates, with other model parameters determined using OLS regressions.

Comparing variance and autocovariance matrices from the estimated parameters to counterfactual estimates with the causal effects of elite college set to zero suggests that elite universities decrease intergenerational social capital mobility but also allocate social capital more meritocratically in the sense that they tighten the social capital-human capital link. Compared to the no-effect counterfactual, the observed elite university effects raise the correlation between parent and child social capital by 50%, while increasing the within-generation correlation between human and social capital by 40%. Most of these gains reflect the direct effects of own elite university attendance, not effects operating through spouse attributes.

This paper contributes to several strands of literature. First, we demonstrate that multi-generational effects are crucial to understanding the way elite universities shape upward mobility to the very top. Several recent papers show that, over a single generation, elite universities expand inequality in access to top jobs and incomes by baseline social

status and that social interactions between high-status individuals at elite universities are an important reason why (Zimmerman, 2019; Michelman et al., 2022). Our findings support the idea that elite universities increase intergenerational persistence and that the mechanisms are largely social, but also show that, over multiple generations, elite universities provide a path for talented lower-status families to join the elite group.

Second, we advance the literature on the distribution of economic returns across colleges. Our finding that exposure to academically high achieving peers does not promote intergenerational upward mobility is consistent with previous studies showing that colleges' "value added" to earnings is weakly related to peer *academic* quality (Dale and Krueger, 2002, 2014; Hoxby, 2020; Chetty et al., 2020; Mountjoy and Hickman, 2020). Abdulkadiroğlu et al. (2014) make a similar point for academically selective public high schools. We go beyond this work by exploring intergenerational effects, by showing that peer *social* status is a much stronger correlate of intergenerational gains, and by showing that social capital is itself an important output of elite education. Our findings on the causal link between increased exposure to high-status peers and upward mobility for children are consistent with correlational evidence from Chetty et al. (2022) that regions where cross-SES social links are more common tend to have higher rates of upward mobility.

Third, our findings elevate a string of papers on intra-family and intergenerational "spillover" effects by showing that these effects are quantitatively important for long-run outcomes. Previous research uses similar designs to examine sibling spillovers on college, major, and school choice in education settings (Altmejd et al., 2021; Dustan, 2018), and to study the transmission of high school field of study from parents to children (Dahl et al., 2020). This literature provides "existence" results for various types of within-family spillovers, but leaves open the question about the importance of such effects for economic mobility overall. We push in this direction by linking our empirical findings to mobility rates through an economic model and showing that effects are potentially quite large. We similarly contribute to work on the marriage market effects of higher education by quantifying the link between marriage outcomes and intergenerational social capital transmission (Kirkebøen et al., 2021; Ge et al., 2018).

The closest paper to ours in this vein is Kaufmann et al. (2021). Kaufmann et al. (2021) use data on 1990-93 applicants to five selective Chilean universities to study how admission affects marriage and child outcomes. We innovate relative to Kaufmann et al. (2021) in several ways. First, we access data on both parent and child social status, which allows us to to examine our central question—the intergenerational transmission of social capital and its interaction with human capital mobility. Second, we bring to bear data on a broader set of institutions, a longer time span, and full student preference lists. These data allow us to generate qualitatively new insights. For example, access to more data allows us to focus on the small set of elite degree programs that Zimmerman (2019) shows generate a disproportionate share of top outcomes, while access to data on preference lists allows us to unpack the key role that peers in the social as opposed to academic elite play in driving intergenerational social capital transmission.

Fourth, our results speak to a broader literature on intergenerational persistence in

earnings, schooling, and IQ (Solon, 1999; Anger and Heineck, 2009; Black and Devereux, 2010; Grönqvist et al., 2010; Chetty et al., 2014, 2017; Hertz et al., 2008; Lundborg et al., 2018). We provide evidence on the causal role of elite education and highlight how social capital shapes the human capital outcomes that are the focus of many papers. The focus on elite formation distinguishes our work from previous research examining shifts between lower levels of educational attainment and prestige (Amin et al., 2015; Behrman and Rosenzweig, 2002; Holmlund et al., 2011; Pekkarinen et al., 2009).

Finally, we bring credible quantitative evidence to a canonical question in the literature on social capital. Much of the economics literature on social capital focuses on the importance of social and civic engagement for economic growth and well-being, particularly as related to the development of social trust. See Guiso et al. (2011) for a review. However, Bourdieu's initial conception of social capital emphasized its role in social reproduction, with elite universities as fulcra of elite reproduction specifically (Bourdieu, 1972, 1986, 1998). Our findings support Bourdieu's argument that elite universities help reproduce incumbent elites, but also qualify this idea by showing that, over time, elite universities change who the incumbents are by strengthening ties between social and human capital.

2 Institutions

2.1 Secondary schools and social capital

Primary and secondary students in Chile attend three types of schools: public schools, subsidized voucher schools, and non-subsidized private schools. Public schools are government-run, free, and funded through student vouchers. Voucher schools are privately run but publicly subsidized through the voucher system. Non-subsidized private schools rely on tuition fees only and are considerably more expensive than voucher schools. See Hsieh and Urquiola (2006) for more detail on school funding in Chile. In the class of 2018—the last one we observe in our data—40.0% of students attended a public school, 49.6% a voucher school, and 10.3% a private school.

We distinguish between two types of unsubsidized private schools: elite and non-elite. To classify private schools we expand the approach from Zimmerman (2019). Focusing on the cohorts graduating from high school and entering college in the 1970s and 1980s, we identify a set of seven schools that consistently place their alumni in elite business and political positions.[1] Until recently, these seven elite private schools enrolled only male students. To extend the classification system to cover female students, we augment the elite group with the seven most popular schools among the sisters of male elite students, relying on family links available for recent cohorts (2004–2018). Each of these seven schools historically admitted only women, although two have become coeducational since the 1970s. Finally, to extend the classification system through the present, we identify eight private schools founded in the 1980s or later by organizations associated with the

[1] To identify these schools we relied on three reports produced by a head hunting firm—Seminarium—that characterized the education trajectories of business and political leaders in 2003 and 2010. The schools we classified as elite consistently rank among the 15 most popular among individuals in different elite occupations. Online Appendix A provides further details.

traditional elite schools. In the 2018 class, students graduating from these 22 elite private schools represented 1.1% of their cohort.

We take attendance at an elite private school as our main measure of social capital. This is an important choice to justify, because elite private schools may differ from other schools on many dimensions, including price and academic quality. Our basic argument is that the main way elite private schools stand out from other expensive private schools is in the social pedigree of their students, the social insularity of the educational experience, and the long-run importance of the social relationships that are formed there, not price or academic excellence. This argument has strong qualitative and quantitative support.

The production of social capital at elite private schools starts at the point of admission. Admission to an elite private school typically requires some sort of exam for the child, but also interviews with parents and in many cases letters of recommendation from members of the school community. Applicants whose parents graduated from elite schools typically have admission advantages similar to legacy enrollment policies in the US. Entering these schools is difficult for children without an elite background.

The social consequences of admissions decisions at elite private schools are magnified by a distinctive feature these schools share: unlike most of the other schools in the country, students are admitted when they are four years old and attend the same institution until graduating from high school. This means that students attending elite private schools spend 14 years of their lives together.

The social distinction of elite private schools is clearly visible in descriptive statistics. For each high school we compute indices of social pedigree based on the last names of the students who attend. Following Abramitzky et al. (2020)'s approach for identifying Jewish names in Census data, we compute a prestige score for each last name by comparing the share of individuals with that name in the population to the share with the name in either a) Chile's most exclusive polo club, the Club de Polo y Equitación San Cristóbal, or b) historical "Who's Who" lists of prominent Chileans from de Ramon (2003). For each name, we compute the prestige index E as

$$E = \frac{\text{Share in the club}}{\text{Share in the club} + \text{Share in the population}},$$

so that E is zero for names that never appear in membership lists and approaches one for names that are common in membership lists but rare in the population. People in Chile have two last names (on their mother's and father's side), so we compute individual scores by averaging over the two names, and compute high school scores by averaging over individuals in the high school. We also compute average tuition fees, average scores on the college admissions exam, and test score value added for each high school. Our measure of test score value added conditions on students' age and gender, parental education, household income, and the availability of different educational inputs (such as books) at home. See Online Appendix B for details on our value added and tuition measures.

Table 1 reports how measures of price, quality, and prestige vary by high school type. All variables are standardized to have mean zero and standard deviation one. Private schools are expensive, and elite private schools are among the most expensive private

schools in the country. Their prices are on average 8 standard deviations above the non-private mean, compared to 4.2 standard deviations for non-elite private schools. However, elite private schools are not uniquely expensive. We identify a set of 35 non-elite private high schools with tuition fees at least as high as the least expensive elite school. Average tuition in this group is similar to what we see for elite private schools. Panel (a) of Figure 1 displays a histogram of the tuition distribution that identifies different school types.

On measures of academic performance, private schools outperform subsidized schools, while elite and expensive non-elite private schools score similarly. Elite private schools and non-elite expensive schools have average scores and value added about 2 standard deviations above the population mean. The gap between elite private schools and non-elite private schools is only about 0.2 to 0.3 standard deviations.

Where gaps between elite private schools and non-elite expensive schools are most pronounced is in the social prestige measures. Elite private schools score 5.7 standard deviations above the population mean on the polo club index and 6.1 standard deviations above the mean on the Who's Who index. Both values are about four standard deviations above expensive non-elite schools. Panel (b) of Figure 1 displays a histogram of the polo club prestige index. 20 of the 30 highest scoring schools on the prestige index are in the elite private category.

Social inputs at elite private schools matter in the long run for access to top jobs and positions in society. On the qualitative side, Warner (2014) describes his experience searching for investment banking jobs in Santiago, during which he is repeatedly asked about where he attended high school. Warner has a Harvard PhD, and views this as the more relevant credential, but recruiters seem less interested. Huneeus (2013) interviews the founder of a Chilean investment bank, who emphasizes the importance of high school background for social interactions in elite spaces:

> *"We have meritocracy as an objective in our firm, but only to a certain extent, because there are codes [...] when a guy has attended certain [elite] k-12 schools, those codes are built in."*

On the data side, Zimmerman (2019) shows that social ties between college classmates from high-status Chilean high schools are an important determinant of long run corporate leadership. Pairs of students from elite private high schools who are college peers are more than four times more likely to hold top corporate jobs at the same firms than pairs of students from private high schools in general.

The bottom line is that elite private schools are academically strong schools, and they are expensive schools. But where they most stand out is in the social pedigree of the students they admit, the duration of the time students spend there, and the long-run influence of the social ties between their students. The way students are chosen and the time they spend together cultivates what Coleman (1988) refers to as "closure of the social structure"— the idea that links within a social group are common, and ties to non-group members less common— and identifies as critical for the development of social capital through norms, networks, and exchange relations.

There is of course some fuzziness at the margin of our elite/non-elite classification. As

we discuss later, our findings hold under alternate groupings and when we take continuous measures based on name indices as the outcomes of interest.

2.2 Higher education and human capital

Most Chilean universities select their students through a centralized admissions system. Students take a national university admissions exam and then submit a ranked list of up to ten degree programs to the admissions authority. They are then allocated to programs based exclusively on exam scores and preference rankings using a deferred acceptance algorithm.

We take performance on the university admissions exam as our main measure of human capital. This exam has been offered since the late 1960s and consists of required math and reading sections plus additional subject-specific tests required for certain programs. Taking the university admission exam and applying to universities is free for students graduating from subsidized high schools, and substantial financial aid programs are available to low-income applicants seeking to fund their higher education. Online Appendix A provides more detail on college finance in Chile; see also Solis (2017) and Bucarey (2018). We focus on the average of math and reading scores, and consider not taking the admissions exam as an outcome of potential interest.

The two most prestigious universities in Chile are the University of Chile (UC) and the Catholic University of Chile (PUC). Both universities have participated in the centralized admissions system since its beginning. As with elite private schools, the alumni of these two universities make up a large share of business and political elites. Within these universities, programs in business, law, engineering, and medicine are the most selective and highest paying. Zimmerman (2019) provides evidence on this point. Following Zimmerman (2019), we focus our analysis of elite degree programs on these four fields at UC and PUC.

Students from high-status backgrounds are overrepresented at elite universities. Among the freshmen starting at UC and PUC in 2019, 53.5% came from subsidized schools, 36.1% from non-elite private schools, and 10.1% from an elite private school. The over representation of non-elite and elite private school alumni was even larger in the business, law, medicine, and engineering programs, where they represented 43.5% and 17.4% of first year enrollment, respectively. Relative to the population of high school graduates, elite private school graduates are overrepresented at elite degree programs by a factor of 16. This is quantitatively similar to Chetty et al. (2020)'s finding that children from families in the top 1% of the income distribution make up 14.5% of students at Ivy+ universities in the US.

3 Data

3.1 Data sources

We draw on archival and administrative data from two public agencies: the Chilean Ministry of Education and the Department of Evaluation, Assessment, and Educational

Records of the University of Chile (DEMRE). DEMRE is the agency in charge of the university admission system.

DEMRE provided individual-level records of admissions exam scores for the years 1968 through 2018 and of college applications for the years 1977 through 2018. We digitized these records from hard copies for application cycles in 2003 and earlier. In each year, we observe exam scores for all test takers. From 1977 on, we observe ranked lists of admitted and marginally rejected students at each degree program, including the application score the degree program used to evaluate the student. These admissions lists form the basis of our main empirical design, which compares just-admitted to just-rejected applicants at elite programs.

For many but not all application cycles we also obtain records of applicants' submitted preference rankings and the rules used to score those applications. With these records, available from 1977 to 1979, 1981 to 1989, and then from 2000 and onward, we are able to reconstruct the application process and identify individuals at the margin between specific degree programs, for example someone who is applying to medicine at PUC and has medicine at UC as their fallback option if they are rejected. These records form the basis for an alternate design that compares outcomes for people crossing thresholds between different target and fallback options.

The data also contain demographic information. We observe the high school each applicant attended. In addition, from 2004 onwards we observe self reported socioeconomic characteristics and the national identification number of applicants' parents.

The Ministry of Education records that we use in this project cover the period 2002 to 2018. They include the universe of students enrolled in primary and secondary education and contain information on the schools students attend and their academic performance. The Ministry of Education also granted us access to a dataset identifying siblings attending school at the same time between 2002 and 2015. We combine these sibling links with the parent links provided by DEMRE to identify members of the same family.

We use these data to create two analysis samples: the intergenerational correlations sample (IC) and the elite colleges sample (EC).

3.2 Intergenerational Correlations Sample (IC)

To build the IC sample, we identify students reaching their senior year of high school between 2003 and 2017. We link these students to their scores on the university admissions exam and to the university and major in which they first enroll. About 85% of high school seniors take the admissions exam. We then use information on parent and sibling identifiers, together with registers from the Ministry of Health that link children born between 1992 and 2010 with their mothers, to identify the students' parents. We identify at least one parent for 81% of the students in our sample.

Finally, we link students' parents to their admissions exam and college enrollment records. We are able to link 30.0% of students with at least one of their parents' scores. That this rate is far from 100% makes sense given that college attendance in Chile rose

rapidly between the parent generation and the child generation.[2] We consider both parents and students who did not take the test in many of our analyses.

Panel A of Table 2 describes the IC sample. Column (1) looks at all high school graduates and column (2) looks at at graduates who register for the university admission exam. Columns (3) and (4) zoom in on students for whom we observe a parent identifier and students whose parents took the university admissions exam, respectively. Students' gender and age composition do not change much across columns. Differences are larger when we look at students' academic and socioeconomic characteristics. Children of parents who also applied to college are more likely to graduate from the academic track in high school, and perform better both in high school and in the university admission exam. They are also more likely to enroll in college in general and in elite college programs in particular. In terms of family background, they are more likely to graduate from private high schools, to come from high income households, and to have at least one parent who completed a university degree.

3.3 Elite Colleges Sample (EC)

To build the EC sample we identify applicants near the admission cutoff for an elite degree program between 1977 and 2003. We use the information on family links to match these applicants with their children. We identify at least one child for 41.1% of applicants. We add information on the secondary schools these children attend, their admissions exam scores, and the college degree programs in which they enroll.

Panel B of Table 2 presents summary statistics for this sample. Column (1) characterizes all college applicants in our sample, while column (2) examines applicants that we are able to link to children. Columns (3) and (4) focus on the subset of individuals applying to elite college programs and scoring close to the admissions cutoff, which we define as being within 25 points on the standardized admissions score. Column (3) characterizes below-cutoff applicants, while column (4) looks applicants who score above the cutoff. Individuals applying to elite college programs are balanced in terms of gender. Not surprisingly, their scores in the admission exam are higher than those in the broader population and they have a higher chance of being admitted to college. They are also more likely to have graduated from private high schools.

4 Intergenerational Correlations

4.1 Social capital and the transmission of human capital

We now describe the mediating role that social capital plays in the transmission of human capital across generations, and the extent to which elite colleges influence the joint evolution of social and human capital. We focus first on intergenerational correlations between mothers and children, turning later to correlations between fathers and children.

[2] The share of college-age individuals enrolled in higher education rose from 12% in 1977, the first year of our parent sample, to 38% in 2018, the last year of our child sample (UNESCO Institute for Statistics, 2022).

Figure 2 presents intergenerational correlations between mother's test score rank and child academic outcomes. To construct this figure, we locate each applicant's score from the first time they take the admissions exam and compute his or her rank using the known score distribution. Scores on the college admission exam are normalized to follow a normal distribution with mean 500 and standard deviation 110. The extremes of the distribution are truncated, but the minimum and maximum scores are below the first percentile and above the 99th percentile, respectively. We place individuals who do not take the college admission exam in a different category that for exposition purposes we call percentile 0. When estimating these rank-rank correlations we omit mothers who we do not observe taking the exam. The maroon circle at the bottom left corner of each panel reports outcomes for this group. We split the sample by mother's high school type, our proxy for social capital.

Panel (a) of Figure 2 shows that the rank-rank relationship between mothers' and children's scores is approximately linear within high school type, but that mother's social capital tends to raise the intercept and reduce the slope. Exam rank for the children of subsidized school mothers rises by four percentiles for every ten percentile increase in their mother's rank, with a rank-zero intercept of 44 percentiles. Exam rank for the children of mothers who attended elite private schools rises by three percentiles for every ten percentile increase in mother's score, with a rank-zero intercept of 61 percentiles. Children of non-elite private school mothers are in the middle, with slopes and intercepts between those for subsidized school and elite private school mothers.

The effects of social capital on human capital mobility are large but decrease with baseline human capital. The 17 percentile gap between elite private and subsidized school mothers at rank zero is equal to what would be expected from a 45-percentile increase in test score rank for subsidized school mothers. The gap across school type for elite private and subsidized school mothers in the top percentile of the exam distribution is equal to 7 percentage points, or the expected gain from roughly an 18 percentile increase in scores for subsidized school mothers.

Differences in mother's social capital also affect the chances children join the human capital elite. Panel (b) of Figure 2 repeats panel (a) but takes an indicator variable for a child scoring in the top 1% of the college admissions exam as the outcome. This is roughly the level at which attending an elite degree program becomes a realistic option. Children whose mothers attended elite private schools have an advantage across the whole distribution of mother's human capital. Among children with mothers who scored at the very top of the college admission exam, those whose mothers also attended elite private school are around 5 percentage points (63%) more likely to reach the top 1% than those whose mothers attended a subsidized school.

Findings are similar for alternative measures of human capital. Online Appendix C.1 reports similar patterns when we use required standardized tests taken in grade 10 as the child outcome. The advantage of the standardized test measure is that all students take it, regardless of whether they are applying to college. The disadvantage is that it is not administered every year, so sample sizes are smaller.

4.2 Human capital and the transmission of social capital

Social capital is highly persistent across generations and its transmission depends on parent human capital. Panel (c) of Figure 2 plots the share of students who attend elite private schools by mother's exam rank, split by mother's high school type. Conditional on mother's human capital, differences by social capital are stark. 65% of students whose mothers scored at the top of the college admission exam distribution and attended an elite private school go on to attend an elite private school themselves, compared to only 15% of children whose mothers had the same scores but attended subsidized schools.

Though human capital matters a lot within high school type, it is considerably more unlikely for children of high human capital, low social capital mothers to make it to the top of the social capital distribution than for the children of low human capital, high social capital mothers to do so. Children whose mothers attended an elite private school and scored at the median of the distribution have a 40% probability of attending an elite private school themselves; this value drops to 30% for children of elite mothers who scored at the 25th percentile. However even 25th percentile elite mothers are more likely to send their children to elite private schools than top-scoring mothers who attended subsidized schools.

Parents' human and social capital also predicts children's college trajectories. Panel (d) of Figure 2 shows that, holding fixed mothers' human capital, children whose mothers attended elite private schools are more likely to enroll in an elite college program. This difference peaks at the very top of mothers' human capital distribution, where children whose mothers attended an elite private schools are twice as likely to enroll in an elite college program than children whose mothers attended subsidized schools. This result is important because it shows that the advantages of being born in a high social capital family translate into differences in outcomes as consequential as the college and major in which children specialize.

We next ask whether parents' admission to an elite *college* program predicts children's human and social capital. For this exercise, we focus on top scoring mothers, for whom attending an elite degree program is a realistic option. As shown in Figure 3, attending an elite college program is associated with better human and social capital outcomes for children at all levels of mothers' social capital. In particular, subsidized school mothers who are admitted to an elite college program are around 33% more likely to have children with top 1% test scores, 60% more likely to send their children to elite private schools, and 23% more likely to have a child who enrolls in an elite college program. These findings suggest that elite college programs may play a role in expanding access to the top of the human and social capital distributions across generations, but could also be driven by mothers' selection into elite colleges on the basis of attributes that we do not observe. The next section explores the causal role of elite colleges in more detail.

4.3 Fathers and children

Online Appendices C.2 and C.3 report results relating father's outcomes and parents' average outcomes to children's outcomes. Results in both cases are very similar to those

for mothers. The one notable difference is that slopes of child test score rank in father's test score rank are similar across social capital groups, not decreasing with social capital.

5 Using admissions discontinuities

5.1 Specification

We use a regression discontinuity design to isolate the causal effect of admission to elite degree programs on intergenerational human and social capital transmission. This approach compares outcomes for children whose parents apply to elite degree programs and fall just above or just below the cutoff for admission.

Our main RD specifications have the form

$$E_{ijct} = \beta_0 + \beta_1 A_{jct} + f(S_{jct}; \theta) + \mu_c + \mu_t + \varepsilon_{ijct}, \tag{1}$$

where E_{ijct} is an educational outcome for child i whose parent j applied to the college-major combination c in year t. A_{jct} is an indicator for parent j's admission status to college-major c in year t, $f(S_{jct}, \theta)$ is a linear function of the application score S_{jct} whose slope is allowed to change at the admission cutoff, μ_c is a fixed effect for the target college-major combination, and μ_t is a fixed effect for the parent's application year. When estimating this specification we pool mothers and fathers, but we also present results that split by parent gender.[3] Our main estimates focus on parents whose application scores are within 25 points of the admission cutoff, the same window that Hastings et al. (2013) use in their analysis of Chilean admissions data. Our results are robust across a wide range of bandwidth choices. We restrict our sample to the first time a parent applies to college, which eliminates test re-takers from the data. We cluster standard errors two ways at the child $\times$ parent level.

5.2 Validity

For the regression discontinuity design to generate informative results, crossing the threshold for elite admission needs to generate variation in the degree programs parents attend. Though data on college enrollment is not available for our full sample period, we can test this proposition using data from 2006 through 2017, for which population enrollment records are available.

Figure 4 illustrates the relationship between admission and enrollment in elite college programs for individuals applying to college during the 2006-2017 period. Panel (a) shows the sharp change in admission probability at the cutoff. Only students above the admissions cutoff receive an offer through the centralized admission system. Panel (b) shows how the admissions discontinuity translates to enrollment. We observe a jump of 76 percentage points from a base of 12%.

[3] Not many children have both of their parents near the admission cutoff of an elite college program. Pooling mothers and fathers increases statistical power.

The change in probability is less than one for three reasons. First, not all students admitted to an elite degree program accept the offer. This means that above-cutoff enrollment rates are below 100% and also that some initially rejected students can move up off of a waitlist and enroll. Second, in recent years both UC and PUC have introduced some special admission programs for talented students from disadvantaged backgrounds. The number of places offered through these programs is small, but they allow some applicants under the regular admission cutoff to enroll in elite college degrees. Third, students may retake the test and reapply in future years if they want, and some marginally rejected students may do this and eventually make it in to their target program.

The bottom line here is that, despite some non-compliance with centralized assignment, threshold-crossing induces a large discontinuity in enrollment. The fuzziness in the discontinuity design means that the effects of attending an elite college program are somewhat larger than the estimated admissions effects we present.

Interpreting regression discontinuity estimates as causal effects requires the assumption that "treated" units just above the cutoff are comparable to "control" units just below in terms of the observable and unobservable determinants of outcomes of interest. Standard tests of balance pass easily. We report results from these tests in Figure 5.

Panel (a) of Figure 5 shows the distribution of the running variable in the range of the cutoff. There is no visual evidence that students manipulate their scores to fall just above the cutoff. This makes sense given the structure of the admissions process, in which cutoffs depend only on centrally assigned exam scores, are determined endogenously by the demand for seats and the supply of spots, shift from year to year, and are not known to applicants until admissions results are revealed. We implement the formal test for manipulation suggested by Cattaneo et al. (2018) and fail to reject the null of no manipulation (p=0.356).

Panel (b) of Figure 5 shows that crossing the admissions threshold does not affect selection into the sample of parents. In principle, admission to an elite college program could affect the probability that applicants go on to have children. This would create a censoring problem, requiring additional assumptions on what outcomes for "missing" children would have been. It turns out, however, that admission does not affect the probability that an applicant becomes a parent. Online Appendix D.1 shows that the count of children is also stable across the threshold.

Panel (c) of Figure 5 looks within the sample of parents to examine the effects of threshold-crossing on a vector of potential confounders. We find no evidence of discontinuities in the gender of the parent, the kind of high school the parent attended, the gender of the child, or the birth year of the child. We do find a marginally significant difference in the family size reported by the children when registering for the admission exam. However, this difference is small, and a joint test of the null that the coefficients on each of these parent attribute and family characteristic variables is zero fails to reject at conventional levels (p=0.7333).

5.3 Interpretation

Changes in outcomes across the cutoff result from shifts in the bundle of program and peer attributes available at the target program relative to the mix of applicants' next-best alternatives. Table 3 describes how the observable attributes of the degrees where students enroll change when they gain admission to an elite program, splitting out the sample by the kind of high school the student attended.

Students marginally admitted to specific elite degree programs become much more likely to attend any elite degree program, and attend college with peers who are higher scoring and more likely to have attended high-status private high schools. Students who are admitted to elite degree programs become 76 percentage points more likely to enroll in their target degree program, 52 percentage points more likely to enroll in any elite degree program, and 27 percentage points more likely to enroll in any degree program at an elite college (UC or PUC). The average score of their peers on the admissions exam rises by about 26 points (0.76 standard deviations), the share of their college peers from elite private high schools rises by 4.7 percentage points (37%), and the elite name index of the high schools attended by their college peers rises by 0.50 standard deviations. We see similar effects across most outcomes for students from elite and non-elite schools.

In short, the elite admission treatment involves changes in a variety of institution and peer characteristics, including both social and academic pedigree. In section 6.4 we use additional data on applicants' preference lists to break out the importance of specific program attributes.

6 Results

6.1 Elite colleges, human capital, and social capital

We now turn to the effects of parents' elite admission on children's human and social capital accumulation. Table 4 reports estimates from regression discontinuity specification (1).

Our first finding is that parents' elite admission raises children's social capital. As reported in Panel (a) of Table 4, parents who are admitted to elite college programs are 4.5 percentage points more likely to send their child to an elite private school, a 21% increase relative to the below-threshold mean of 21.6%. For parents who did not themselves attend elite high schools, the gain is 3.3 percentage points, 21% of the below-threshold mean of 15.8%. Gains are similar (but less precisely estimated) for children of parents who themselves attended elite high schools, for whom the below threshold mean is much higher, at 67.6%.

We find similar results for alternate measures of social capital. The right columns of Panel (a) of Table 4 report results for an alternate measure of social capital: the polo-based elite name index at the high schools children attend. This index increases by 0.34 standard deviations across the cutoff.

These discontinuities are visually obvious. Figure 6 shows regression discontinuity plots for (the children of) parents who attended non-elite high schools. Panel (a) shows

the discontinuity in the rate at which children attend elite private schools. Panel (b) shows the discontinuity in the name index.[4]

Parents at the admissions margin substitute between elite and non-elite private schools for their children, not between private schools and subsidized schools. As we report in Online Appendix D.2, the effects of threshold-crossing on non-elite private attendance have roughly the same size as the elite private effects, but opposite signs.

Our second finding is that parents' elite admission does not affect children's human capital accumulation. As reported in Panel (b) of Table 4, parents' elite admission does not raise children's mean scores on the college admissions exam or their chances of scoring in the top 1%. These results hold in full sample and in splits by parent high school type. They are also precisely estimated. For example, we can rule out a 4.5 point (0.04 standard deviation) increase in mean scores in the full sample. Panels (c) and (d) of Figure 6 present visual evidence that these outcomes are smooth through the cutoff. Results reported in Online Appendix D.2 show that rates of exam-taking are also smooth through the cutoff.

Consistent with the absence of human capital gains, we observe that the academic quality of the schools children attend does not change across the cutoff. Panel (e) of Figure 6 illustrates this result, taking exam value added of the high schools children attend as the outcome of interest. This dovetails with descriptive findings from section 2 showing that the elite private schools students substitute towards at this margin stand out mostly for social pedigree, not academic quality.

Our third finding is that parents' elite admission shapes their children's higher education trajectories. As reported in Panel (c) of Table 4, children whose parents cross the admission threshold enroll in college programs where their classmates are 1.3 percentage points (12%) more likely to have elite private school backgrounds and score 5.69σ higher on the admissions exam. These effects are driven mainly by gains for children of non-elite parents. Panels (f) and (g) of Figure 6 provide regression discontinuity plots for these outcomes. Panel (h) of Figure 6 shows a similarly large discontinuity in the polo club elite name index for a child's college peers.

Panel (d) of Table 4 focuses on elite colleges and elite degree programs. When parents cross the elite admissions threshold, their children become 2.4 percentage points (7.5%) more likely to enroll in elite colleges (i.e., UC or PUC). Panel (i) of Figure 6 illustrates this result. In contrast, children's likelihood of enrolling in an elite *program* within these elite colleges does not change.

An interesting feature of these findings is the presence of higher education effects in the absence of exam effects. Because admissions depend only on academic performance, the implication is that the higher education effects arise from changes in application behavior, with higher social capital students applying to more selective colleges. Results presented in Online Appendix D.2 show that the effects of parent elite admission on the rates at which children *apply* to elite colleges are roughly equal to the elite college enrollment effects reported in Table 4. This parallels findings on college "undermatch" in the US (Hoxby and Turner, 2013; Dynarski et al., 2021).

[4]Online Appendix D.2 displays a version of Figure 6 using the full parent sample. This figure closely resembles Figure 6.

6.2 Robustness

Our findings are robust to a wide variety of alternative approaches to estimation. Online Appendix E shows that our main results persist over a wide range of bandwidths, when we use polynomial instead of linear terms for the running variable, when we control for a rich set of sociodemographic characteristics, and when we make alternate sample selection choices. There are no jumps on the outcomes of interest at false "placebo" cutoffs. Further, our findings are robust to changes in the definition of elite high schools. Similar patterns of results arise when we consider narrower and broader classification schemes.

6.3 Mechanisms and heterogeneous effects

6.3.1 Gender and role modeling

We now turn to the mechanisms underlying the effects of elite admission on children's social and human capital. We first consider mechanisms related to child and parent gender.

The effects of parent elite admission may be mediated by gender through a variety of causal channels. For example, role model effects may be important and depend on gender match (Dahl et al., 2020). Alternatively, men and women may have different preferences over how or how much to invest in children, and elite admission may shape the degree to which one's preferences are expressed in joint choices (Duflo, 2003). We explore these possibilities by looking at heterogeneous admissions effects by parent and child gender. We focus on the sample we are most interested in from the perspective of upward mobility: children whose parents did not attend elite private schools.

Table 5 reports our findings. The column headings indicate whether the results cover all children, only daughters, or only sons. The rows further distinguish between the effect of mothers and fathers. We find little evidence of heterogeneous effects social capital effects by parent or child gender. As reported in panel (a) of Table 5, results for fathers and mothers and for daughters and sons on elite high school attendance are fairly similar. A test of the null hypothesis that the effects of father's and mother's admission are equal in the full sample of children returns a p-value of 0.622. A test of equality of effects for sons and daughters, pooling over parent gender, returns a p-value of 0.434.

For human capital, we see some modest evidence of gender-driven heterogeneity. Small positive effects on top 1% test score attainment when mothers are admitted to elite degree programs are offset by negative effects when fathers are admitted. We can reject that effects for fathers and mothers are equal at conventional levels (p=0.036). Gains for mothers are driven by positive effects for daughters, while losses when fathers are admitted are driven by losses for sons. We interpret these results cautiously because we do not see evidence of effects on average scores. Evidence of gender differences on patterns of children's college attendance is also modest.

Our broad conclusion is that our main findings on social capital apply to fathers and mothers, and to daughters and sons, and that gender match is not a first-order determinant of the effects we see.

6.3.2 Educational expenditures

Income effects are another plausible mechanism. Parents may earn more and increase their educational expenditures in general, with children's elite private attendance being one manifestation of that increase. This story, in which social capital follows from financial success, is quite different from causal stories in which social relationships formed at elite institutions drive intergenerational capital transmission.

To test the role of increasing educational expenditures as a driver of increased elite attendance, we directly examine how school expenditures shift when parents gain elite admission. Table 6 reports the results from this exercise.

We find that parents' admission to an elite college modestly increases educational expenditure, but that this increase is driven exclusively by increased rates of attendance at elite private schools, and not by increased enrollment at other private schools. Reading across Table 6, column 1 shows that admission to elite degree programs does not change the probability that we observe a tuition value at the schools children attend. Column 2 shows tuition at the schools where children enroll rises by CLP 147,000 at the cutoff, or about 4% of the below-cutoff mean. Columns 3, 4, and 5 show that the probability children attend an "expensive" school– defined as in section 2– rises by 4.1 percentage points across the cutoff, and that this effect is driven entirely by increased rates of attending elite private high schools, not non-elite expensive private schools. Column 6 takes as the dependent variable the type-specific average price tuition at the school the child attends, where type is either "elite private" or "other." This value rises by CLP 95,638, 65% of the total increase we find, indicating that most of the increase in tuition is driven by the shift towards elite private schools. Online Appendix D.3 provides discontinuity plots for key outcomes.

That generic expenditure effects do not drive our findings is consistent with results from previous work indicating that income effects are likely limited for non-elite parents gaining admission to elite public schools. Zimmerman (2019) shows admission to the elite business, engineering, and law programs in our sample only increases earnings for men graduating from private high schools. In contrast, we *do* find effects when focusing on the children of women and applicants who did not attend private K-12 schools, suggesting that our findings are not primarily driven by income effects.[5]

6.3.3 Regional mobility

All of the elite private high schools are in the Santiago region. Admission to an elite degree program in Santiago may make parents from other regions more likely to live in or near Santiago as adults, expanding elite high school access for their children by virtue of geographic proximity. We test this hypothesis by re-estimating our main specifications separately for parents from Santiago and for parents from other regions. We find no evidence that mobility across regions is an important mechanism. Results for parents

[5] Zimmerman (2019) finds that elite medical programs do significantly increase earnings for male and female students who graduated from both subsidized and private schools. In Online Appendix D.4 we show that our results persist even when we focus on the sub-group of non-elite parents applying to elite business, engineering and law programs (i.e., on parents who do not experience earnings gains).

from Santiago and from other regions are similar to those in the pooled sample. See Online Appendix D.5 for details.

6.3.4 The marriage market

The fourth type of mechanism we consider is changes in parents' social environment in college and beyond. We have already shown in Table 3 that admission to elite degree programs has large effects on the academic and social background of one's college peers, in particular by increasing the share on one's peers who attended elite K-12 schools themselves. Exposure to high human and social capital peers may shape access to or preferences for social capital accumulation in the next generation.

We being our examination of social inputs by focusing on a specific channel through which peer inputs may shape intergenerational outcomes: the marriage market. The identity and attributes of one's spouse are particularly important when studying child outcomes because both partners contribute genes, childcare, and family inputs. As described in section 3, we do not directly observe marriages, but we can identify couples through their children. We use these data to estimate versions of specification (1) taking spouse attributes as the outcomes of interest.

Because the focus of the analysis is on parents we use a slightly different sample than in our analysis of child outcomes. We create a sample in which each observation corresponds to a parent's application, rather than an application-child, and cluster standard errors at the parent level instead of at the family level. We continue to limit the sample to the main group of interest: applicants who did not themselves attend elite high schools.

Table 7 reports our findings. As a preliminary step, we verify that the rate at which we observe applicants' spouses is smooth through the cutoff. This proves to be the case: we match 60% of marginal parents to spouse records, with no discontinuity in rates at the point of admission. Since our coverage of mothers is better than our coverage of fathers in the child data, we are able to identify more wives than husbands.

Our first result is that non-elite applicants admitted to elite colleges become more likely to partner with people in their program. The share of parents whose spouse attended their target program rises by 9.3 percentage points when they cross the threshold for admission, more than doubling the below-threshold mean rate of 6.0%. Panel (a) of Figure 7 displays this result. The rates at which applicants marry individuals in any elite program and individuals in any elite college rise by somewhat less than the target program effect, indicating some substitution towards the target program from other elite college programs.

Our second result is that marital matches generated by admission cross boundaries defined by baseline social capital. The rate at which applicants not from elite high schools marry someone from an elite private school rises by 3.2 percentage points when they cross the admissions cutoff, a 43% increase over the below-threshold mean of 7.5%. Panel (b) of Figure 7 shows the regression discontinuity plot for this finding. The shift towards partners from elite private high schools is part of a broader pattern of substitution towards higher-status private school partners and away from subsidized school partners: the rate at which applicants match to someone from a non-elite private school rises 3.9 percentage

points (12%) and the rate at which they marry someone from any private school (elite or non-elite) rises by 7.1 percentage points (17%). Effect sizes are broadly similar for male and female applicants.

Our third result is that spouse test scores do not rise across the admissions cutoff. Panel (c) of Figure 7 illustrates this finding. Elite admission helps non-elite applicants match to high social capital partners, but it does not raise their partner's human capital.

Our findings on marriage market effects parallel our findings on children's outcomes, in the sense that we find large effects of admission on the social capital but not the human capital of one's partner. Coupled with limited evidence for causal stories mediated by gender and educational expenditure, our marriage market results provide qualitative support for the idea that changes in the social environment at college are an important driver of long-run effects for children, and raise the possibility that changes in marriage partners may themselves be a quantitatively important driver of children's outcomes.

6.3.5 Social capital in the neighborhood

Schools are leading sites of social capital formation, but they are not the *only* sites of social capital formation. To better understand the scope of changes in children's social lives that result from parent's elite admission, we place attributes of children's neighborhood peers on the left hand side of specification (1). We define neighborhood peers as high school completers with residential addresses within 100 meters of one's own address. These data are available only for residents of the three largest regions. See Online Appendix B for details.

Children of parents admitted to elite degree programs grow up in neighborhoods where their peers have higher social and human capital. Table 8 reports these results. Panel A shows that children of parents just above the cutoff for elite admission live in neighborhoods with peers who score about 0.22 to 0.26 standard deviations higher on the polo club name index. This effect is similar in size to the effect of parents' elite admission on the polo club name index of children's school peers reported in Table 4. As shown in Panels B and C, children also shift towards neighborhoods where peers pay higher school tuition and score better on the college admissions exam. Online Appendix Table D9 reports similar results using a 200 meter radius to define neighborhoods.

Despite increases in the human and social capital of residential peers, we see little evidence that children live in more expensive neighborhoods. As reported in Panel D of Table 8, the census block level price per square meter (a standard index of home price in Chile) does not change much across the admissions threshold, and we cannot rule out zero effects at conventional levels.[6]

We draw two conclusions from this exercise. First, parents' admission to elite degree programs reshapes children's social lives both at home and at school. The joint shift in neighborhood and home environment may augment social capital development. As

[6]Prices per meter are measured in Unidad de Fomento (UF), the inflation-adjusted unit of account typically used to describe real estate values in Chile. Due to limited precision we cannot rule out meaningful increases for this outcome. For non-elite students the upper bound on the 95% CI for the admissions effect is is about 5UF, or roughly 10% of the below-threshold mean.

Coleman (1988) points out, school communities develop stronger shared norms and trust relationships when social ties extend beyond the school. Second, as we found in our analysis of educational expenditures in section 6.3.2, simply spending more money does not appear to be the main mechanism underlying the shift in social environment.

6.4 Academic vs. social vs. marriage market inputs

6.4.1 Beyond elite degree programs

Our findings thus far show that admission to elite degree programs shapes intergenerational upward mobility in social capital but not human capital, and that changes in parents' social lives, including matching to high social capital spouses, may be an important reason why. We also show that admission to an elite college shifts a bundle of educational inputs simultaneously, including both peer academic skill and peer social pedigree. We now ask which components of this bundle– academic inputs, peer social pedigree, or access to high social capital marriage partners– drive the intergenerational effects we see.

Our approach relies on additional data. We augment our base dataset on admissions outcomes at the eight elite degree programs in two ways. First, we bring to bear data on applicants' full preference rankings. In our parent sample, these records are available for 1977-1979, from 1981 through 1989, and then from 2000 through 2003. What they allow us to do in the years they are available is identify applicants on the margin between pairs of degree programs with different attributes. We can then isolate the impact of observable elements of the elite college bundle, holding others fixed. For example, we can compare applicants on the margin of admission to program A, where peers have high social status. For each student, we identify a "fallback option" as the degree to which that student would be admitted if they are rejected from A, given their scores and their submitted application list. If some applicants have fallback options that are also characterized by high status peers, and others have fallback options that have low status peers, we can compare the size of admissions effects across these two groups to learn about the importance of peer social status for long-run outcomes.

The second way we augment our data is by using data on all degree programs, not just elite degrees. This expands the sample size dramatically, which is helpful given the restriction on application cycles. It also allows us to exploit all of the variation in peer attributes in the higher education system, not just variation generated by elite admission.

Motivated by our analysis of elite degree programs, we focus on three program attributes: academic quality Q, social pedigree or "eliteness" E, and elite marriage market access M. We define academic quality as the mean admissions exam score of admitted students, and social pedigree as the share of admitted students who attend an elite school. We define elite marriage market access as the share of non-elite students at the program who marry alumni of elite private schools. To avoid having one's own outcomes affect measured degree attributes, we use a cohort-level leave-out procedure in which the attribute of a degree program in a given application cohort is computed using data from all other cohorts. We combine measured degree attributes with the application list data to compute the difference between the attributes of the target and next option for each

submitted application, and label these differences ΔQ, ΔE, and ΔM, respectively.[7]

6.4.2 Differential effects by changes in degree attributes

Figure 8 shows results from a simple initial exercise, in which we split up applications from non-elite parents (separately) by quartiles of ΔQ, ΔE, and ΔM, and estimate versions of equation 1 within each sample. Panels (a) through (c) report "first stage" effects. These effects are large. For example, when applicants in the top quartile of ΔQ gain admission to their target degree, the academic quality of their peers rises by 61 points (1.24 standard deviations of the college degree average test score distribution); when applicants in the bottom quartile gain admission to their target degree, the mean academic quality of their peers falls by 47 points (0.96 standard deviations).

The lower panels of Figure 8 show how human and social capital accumulation change with admission in each sample. We find that the probability one's children attend an elite private school tracks gains and losses in peer elite high school shares and in elite marriage market access. As in our analysis of elite programs, effects are large relative to base rates. When parents in the top quartile of ΔM gain admission to their target degree, the chance their child attends an elite high school rises by 2.4 percentage points, or 17%. When parents in bottom quartile of ΔM are admitted, the chance their child attends an elite high school falls by 2.3 percentage points. In contrast, the relationship between peer academic quality and social capital mobility is, if anything, negative. We see no evidence that any of these variables are associated with changes in children's human capital.

A challenge in interpreting these findings is that changes in degree attributes may be correlated with one another. People with high values of ΔE may have lower values of ΔQ, for example. We address this issue by running parametric specifications that control simultaneously for the effects of academic, social, and marriage market variables. These specifications have the form

$$\begin{aligned} E_{ijct} =& \beta_0 + \beta_1 A_{ijct} + \beta_2 A_{ijct} \times \Delta E_{ijct} + \beta_3 A_{ijct} \times \Delta Q_{ijct} + \beta_4 A_{ijct} \times \Delta M_{ijct} \\ &+ \beta_5 \Delta E_{ijct} + \beta_6 \Delta Q_{ijct} + \beta_7 \Delta M_{ijct} + f(S_{ijct}, \mathbf{\Delta X}_{ijct}; \theta) + \mu_c + \mu_{c'(ijct)} + \mu_t + \varepsilon_{ijct}. \end{aligned} \tag{2}$$

E_{ijct} is an outcome for child i of parent j applying to program c in cohort t and A_{ijct} is an indicator for i's admission to c in year t. β_1 is the main effect of admission to the target degree relative to an observably identical next choice. β_2, β_3, and β_4 are coefficients on the main regressors of interest– interactions between admission and the change in degree-specific peer attributes across the cutoff. Controls include main effects of $\mathbf{\Delta X}_{ijct} = [\Delta E_{ijct}, \Delta Q_{ijct}, \Delta M_{ijct}]$, as well as a continuous linear function of S_{ijct} that is allowed to vary above and below the cutoff and to interact linearly with the $\mathbf{\Delta X}_{ijct}$.

[7] ΔQ, ΔE, and ΔM each measure attributes of students' college degree programs. ΔM differs from the other two variables in that there is a natural first-stage outcome through which one might claim the effects of changes in M on child social capital should operate: whether a given non-elite student goes on to marry an alumnus of an elite private school. In Online Appendix B.4 we discuss the construction of M in more detail and show that cross-threshold changes in observed marriage outcomes for students are proportional to cross-threshold changes in M.

We include fixed effects for target degree c, next option degree c', and application cycle.

Table 9 reports the results of these regressions for our main outcomes. When reporting coefficients, we standardize the $\mathbf{\Delta X}_{ijct}$ to have mean zero and standard deviation one.

Results confirm the visual intuition from Figure 8. For social capital, admission to programs with higher shares of elite private school peers and higher elite marriage rates for one's gender raises the chances one's child attends an elite private school. These effects are sizeable. Admission to a program with one standard deviation higher elite marriage rate raises the chances one's child attends an elite school by 0.0090 percentage points, about 14% of the mean rate. In contrast, holding peer social status and elite marriage rate fixed, admission to a degree with a one standard deviation higher average exam score reduces the chance one's child attends an elite school by 0.0076 percentage points (12% of the sample mean).

Turning to human capital, peer social status and elite marriage rates do not affect children's exam performance. Peer academic performance has either a zero or a negative effect, depending on whether one looks at top 1% attainment or at average exam scores.

For higher education, we see positive effects of parents' peer elite high school share on children's elite college and elite degree program attendance. These effects are economically meaningful. For example, admission to a college degree with one-standard deviation higher elite peer share raises the chances one's child attends an elite degree program by 0.0070 percentage points, just under 10% of the mean rate of 0.072. We observe similar positive effects on measures of the social capital of children's classmates in the same college program, such as the share of college peers from elite private high schools and the elite name index at the college program (columns 6 and 7), but do not observe positive effects on the human capital of children's college classmates (column 8).

We see no evidence that parents' admission to a college with higher peer human capital or better marriage market opportunities raises the quality of the college their children attend, holding parent elite peer share fixed. Coefficients on the interactions between admission and the ΔQ and ΔM variables are zero or small and negative for each of the higher education outcomes.

6.5 Group identity and the social roots of intergenerational mobility

The key theme emerging from Figure 8 and Table 9 is that admission to degree programs with high-end peer social inputs drives the intergenerational transmission of social capital, while admission to programs with stronger academic peers if anything reduces upward social mobility and does not raise human capital either. Together with our evidence on marriage matching for students admitted to elite degree programs, these findings suggest that college social inputs are crucial drivers of long-run social capital mobility.

As a further test of the social input hypothesis, we conduct an exercise that uses social divisions within the set of elite schools to highlight the way social links formed in college shape dynastic paths in the long run. The idea here is that if social links are important, your college peers should determine not just whether your children join the social elite, but which group of elites they join.

We rely on the fact that within elite schools there is a group that belong to the same Catholic organization—the Opus Dei—and that have strong social links between them. As discussed in Online Appendix A Opus Dei and other elite schools are otherwise quite similar. They are located in similar neighborhoods, charge similar tuition fees, and have similar levels of the elite name indices. If social links formed at college drive intergenerational social capital effects we observe, then increased parent exposure to Opus Dei peers should disproportionately raise child enrollment in Opus Dei schools relative to otherwise similar elite schools.

We build an index ΔO similar to the ΔE used earlier in this section, but capturing differences in parents' exposure to alumni of Opus Dei schools. We then split the sample into four different groups according to the size of ΔO and study how changes in non-elite parents' exposure to alumni of Opus Dei schools affects their children's probabilities of attending an Opus Dei and other elite schools. We rely once more in our baseline specification and estimate it independently in each sub-sample. Panel (a) of Figure 9 shows that there is substantial cross-program variation in Opus Dei shares. Applicants in the top quartile of ΔO experience a 3.7 percentage point increase in their share of Opus Dei college peers if they are admitted to their target program (from a base of 0.2%), while applicants in the bottom quartile experience a 1.6 percentage point decline (from a base of 1.9%).

Panel (b) of Figure 9 reports the estimated effects of parent elite admission on children's Opus Dei high school attendance. Increases in parental exposure to Opus Dei peers in college raise their children's chances of enrolling in Opus Dei high schools. For parents in the top quartile of ΔO, admission raises their children's chance of enrolling in Opus Dei school by 2.1 percentage points (36%). For parents in the bottom quartile of ΔO, admission *reduces* children's rates of enrollment in Opus Dei schools by 2.4 percentage points (42%). In contrast, parental exposure to Opus Dei peers has no effect on the rates at which their children enroll in *other* elite schools. Panel (c) of Figure 9 reports this finding. Overall, this set of results supports the idea that social links formed at college shape the intergenerational transmission of social capital.

7 Quantifying the contribution of elite universities

How much do the elite college effects we document shape the intergenerational and cross-sectional correlations between human and social capital? To get a sense of the quantitative importance of elite college for intergenerational mobility, we combine our descriptive and regression discontinuity estimates using a stylized vector autoregression (VAR) model that incorporates capital accumulation, elite college attendance, and marriage market matching. We are interested in intergenerational and cross-sectional correlations given the data we see, and also in how these correlations would look under different assumptions about the causal effects of elite higher education.

The assumptions we invoke when specifying the model are quite strong. We therefore view the exercise as an extended back of the envelope calculation, in the spirit of Kremer (1997)'s analysis of the quantitative importance of neighborhood effects or Chetty et al.

(2019)'s discussion of the future trajectory of racial income gaps in the United States. Given our best guesses at the parameters governing the intergenerational evolution of social and human capital, do elite colleges matter a lot, or a little?

We model dynasties that evolve over time. Dynasties are endowed in each period with social and human capital. Given these values, they choose the "eliteness" of the college they attend. After college, they match to a spouse who is also characterized by human capital, social capital, and college eliteness. The social and human capital of the next generation in the dynasty are then determined as a function of parents' average social capital, human capital, and college eliteness.

This conceptual setup gives rise to the following VAR:

$$S_{it} = \alpha_0 + \alpha_1 \overline{S}_{it-1} + \alpha_2 \overline{H}_{it-1} + \alpha_3 \overline{E}_{it-1} + e_{1t} \tag{3}$$

$$H_{it} = \beta_0 + \beta_1 \overline{S}_{it-1} + \beta_2 \overline{H}_{it-1} + e_{2t} \tag{4}$$

$$E_{it} = \gamma_0 + \gamma_1 S_{it} + \beta_2 H_{it} + e_{3t} \tag{5}$$

$$S^s_{it} = \delta_0 + \delta_1 S_{it} + \delta_2 H_{it} + \delta_3 E_{it} + e_{4t} \tag{6}$$

$$H^s_{it} = \phi_0 + \phi_1 S_{it} + \phi_2 H_{it} + e_{5t} \tag{7}$$

$$E^s_{it} = \psi_0 + \psi_1 S_{it} + \psi_2 H_{it} + \psi_3 E_{it} + e_{6t} \tag{8}$$

S_{it}, H_{it}, and E_{it} are social capital, human capital, and college eliteness for dynasty i in generation t. We continue to measure human capital using entry exam scores. We measure social capital as the polo club name score eliteness of the high school an individual attends. As discussed in sections 2 and 6.1, this is a continuous analog of the binary "elite high school" categorization. We measure college "eliteness" as the average value of social capital for students who attend, as in section 6.4. S^s_{it}, H^s_{it}, and E^s_{it} are the same variables for the spouse, and $\overline{S}_{it}$, $\overline{H}_{it}$, and $\overline{E}_{it}$ are average values of the individual and the spouse. The e_{jt} are error terms, which we assume are statistically independent with mean zero and variances to be estimated.

A few restrictions are worth noting. First, we allow the direct effects of elite college to enter only through peer social capital. This is motivated by our findings in section 6.4 that the academic quality of college peers does not produce upward social or human capital mobility. Second, we restrict the college eliteness effects on child's human capital and spouse human capital to be zero. This choice is motivated by null effects in our regression discontinuity analysis for these outcomes. Third, we impose separability across all inputs and do not distinguish between mothers and fathers or daughters and sons. These choices are motivated by our finding of limited heterogeneity in elite college effects by baseline social capital and by parent and child gender.

Our approach to calibrating the model is to estimate the parameters governing elite colleges' role in production and matching using instrumental variables specifications that parallel the regression discontinuity designs in section 6.4. We then fill in the remaining parameters using OLS regressions similar to our analysis in section 4, restricting college effects to the estimated values in from the discontinuity designs. We sketch our method here, with details in Online Appendix F.

We start by creating instruments based on the characteristics of the target and fallback options of parents, following our approach in section 6.4. We characterize each college-major combination in terms of the social capital of the students it admits and the social capital of the spouses of these students. We then construct measures ΔE and ΔE^{spouse} based on the gap between the peer eliteness and spousal eliteness of each marginal applicant's target and fallback degree.

In equation (3), we use the interaction between ΔE and ΔE^{spouse} and threshold-crossing to instrument for parents' average social capital $\bar{S}_{it-1}$ and college eliteness $\bar{E}_{it-1}$. We estimate these specifications using the sample of children for whom we observe both parents and at least one is a marginal applicant, and include the same controls as in equation 2. Intuitively, attending a degree program associated with match to higher social capital spouses shifts $\overline{S}_{it-1}$ by shifting spouse social capital, because own social capital S_{it-1} is fixed at the time of application. Attending a degree program with higher peer eliteness raises $\bar{E}_{it-1}$ by increasing one's own college eliteness E_{it-1} and spouses's college eliteness E^s_{it-1}. This procedure generates estimates for α_1 and α_3. We recover the remaining parameters α_0 and α_2 using restricted OLS. We fix the values of α_1 and α_3 to coincide with the IV estimates. We then estimate the variance of e_{1t} using the residuals from the restricted OLS regression.

We similarly combine instrumental variables and restricted OLS to estimate equations (4), (6), and (8). Equation (4) follows the approach for equation (3), using the spouse eliteness instrument to recover β_1 and estimating other parameters using OLS. For equations (6) and (8) we run IV regressions that instrument E_{it} with an interaction between admission to the target program and ΔE to recover δ_3 and ψ_3. The rest of the parameters are recovered through restricted OLS.

We estimate equations (5) and (7) using OLS only. These equations capture descriptive relationships to which elite college attendance is not an input. Equation (5) is the model analog of the linear relationship between parent and child human capital with social capital as a vertical shifter reported in Figure 2. Equation (7) captures the relationship between own social and human capital and spouse human capital, which we show in Table 4 is not affected by whether one attends an elite college.

With parameter estimates in hand, we use standard VAR techniques to obtain the MA(∞) representation of the VAR(1) process, and use the MA representation to obtain expressions for the variance and autocovariance matrices of S_{it} and H_{it} as functions of model parameters. In addition to computing variance and autocovariance matrices for estimated parameter values, we compute these matrices under counterfactual assumptions about the causal role of college attendance.

We emphasize that this procedure involves many simplifications. To highlight a few, our instrumental variables specifications impose strong exclusion restrictions on the channels through which attending an elite college shapes long-run outcomes. We assume that treatment effects are homogenous and apply them away from the admissions cutoffs where they are estimated. We impose strong functional form assumptions (though these choices are guided by descriptive patterns in the data). We assume that parameters governing the

process remain stable across generations, even though the Chilean economy and education system change over the period we study. Finally, when conducting counterfactual exercises, we assume that descriptive relationships governing other relationships in the data are stable even as the effects of college change. We interpret our findings as a back-of-the-envelope variance decomposition that explores the potential importance of elite colleges for intergenerational mobility over the past 50 years in Chile, not as precise predictions about what might happen in the future under different policy regimes.

Our main finding from this exercise is that elite colleges play a double-edged and quantitatively important role in making social capital both more persistent across generations and more meritocratic in its allocation. The first column of Table 10 reports baseline results based on observed parameter values, while the second column reports results from a counterfactual in which the causal effects of college on both social capital accumulation and marriage market matching are set to zero, i.e. where $\alpha_3 = \delta_3 = \psi_3 = 0$. Looking first at autocorrelations, in the base model the intergenerational correlation of social capital within a dynasty is 0.357. This falls by 33% to 0.238 in the no college effects counterfactual. At the same time, elite colleges tighten the link between academic and social success: in the base model, the cross-sectional correlation between social and human capital is 0.193. Under the counterfactual no college effects model, this value falls by one third to 0.138. We see a similar results for "intergenerational meritocracy": the correlation between *parent* human capital and child social capital falls by 15% when we zero out college effects.

These effects are largee relative to the simulated effects of other kinds of policies. The third column of Table 10 reports results from a counterfactual exercise that leaves elite college effects at their base levels but eliminates the effect of social capital on selection into elite colleges by setting $\gamma_1 = 0$. The idea is to eliminate "undermatch" of low social status students. In our model, eliminating undermatch has effects that are similarly-signed to the effects of eliminating elite college effects entirely, but are slightly smaller. For example, the single-generation autocorrelation of social capital falls from 0.344 at baseline to 0.250, and the cross-sectional correlation of social and human capital falls from 0.174 to 0.162.

We also use the model to understand the extent to which the quantitative impacts of elite college are driven by marriage market effects. To do this we consider counterfactuals that alternately a) set $\alpha_3 = 0$ and thereby eliminate the direct effect of elite college on social capital accumulation while keeping marriage market effects fixed, or b) set δ_3 and ψ_3 equal to zero, thereby eliminating matching effects while keeping the direct effect fixed. We report results from these exercises in columns 4 and 5 of Table 10. We find that direct effects are the more important channel. When we set $\alpha_3 = 0$, the intergenerational correlation in social capital falls to 0.234, 96% of the way from the base case to the full no college effects counterfactual in column 2. When we set δ_3 and ψ_3 equal to zero, the same intergenerational correlation falls to 0.3374, 6% of the way from the base case to the full no college counterfactual.

8 Conclusion

This paper uses five decades of data linking parents' and children's educational outcomes in Chile to obtain three main results. First, we show that access to elite colleges helps talented students from lower-status families expand access to social capital for their children. Second, we show that the key mechanisms underlying this effect are social, not academic. Parent elite admission does not improve children's academic outcomes, and the key correlate of upward social mobility for children is parents' exposure to peers with high social status, not high academic achievement. Third, we show that elite colleges play a quantitatively important role in the intergenerational transmission of elite social capital. This role is double-edged: elite colleges both increase the intergenerational persistence of elite social capital and shift its allocation along meritocratic lines, strengthening the ties between academic and social success.

Whether elite colleges help talented students from modest backgrounds join the social elite or help incumbent elites retain their positions is a central question in public debates on selective higher education. Our results indicate that, looking across generations, elite colleges push the social elite to become *both* academically "smarter" and intergenerationally stickier, highlighting a tension between ideas of fairness centered on meritocracy and ideas centered on opportunity. The idea that meritocracy need not expand opportunity dates to Young (2017)'s coinage of the term. Nevertheless, our finding that elite college admission expands access to elite social capital in the second generation paints a more optimistic picture than recent studies showing that elite college students from lower-status backgrounds are less likely to reach top positions in business and society than their high-status college peers (Zimmerman 2019; Michelman et al. 2022).

One question we leave for future work is whether the dynastic history of the social elite affects how this group behaves. Do present day elites whose parents came from low-status backgrounds act differently than their peers whose parents were also members of this elite? While ample evidence suggests that personal experiences can shape elite behavior in top roles (Bertrand and Schoar, 2003), it is also possible that that the experience of elite education tends to homogenize subsequent behavior. How much it matters that universities reshape the social elite depends on the answer to this question.

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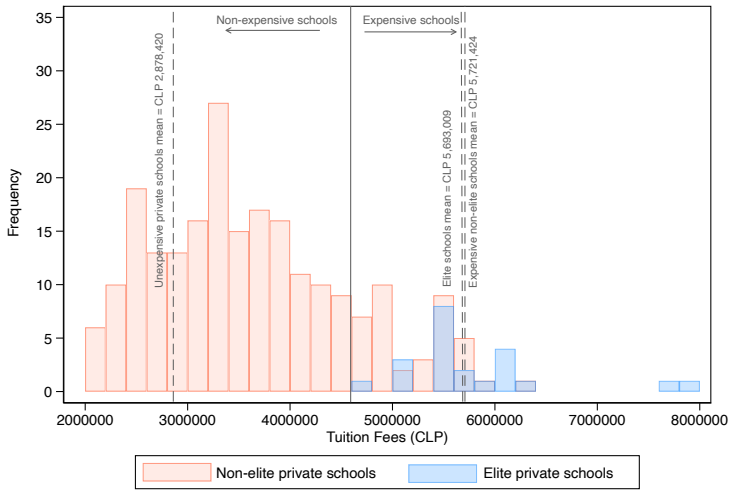
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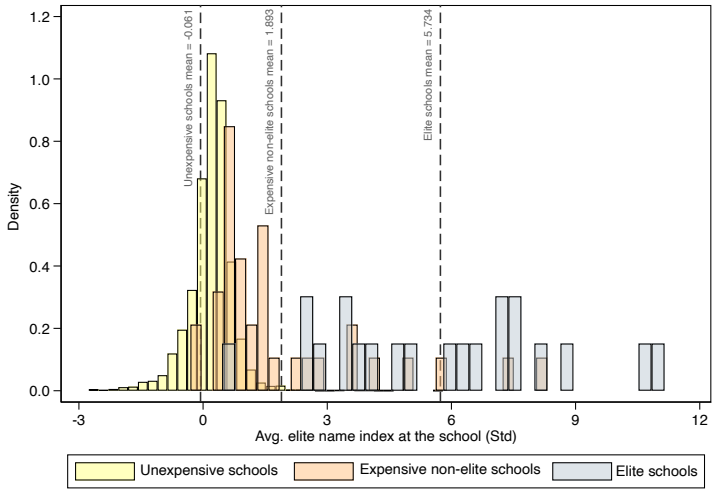
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Figure 1: Characteristics of private K-12 schools



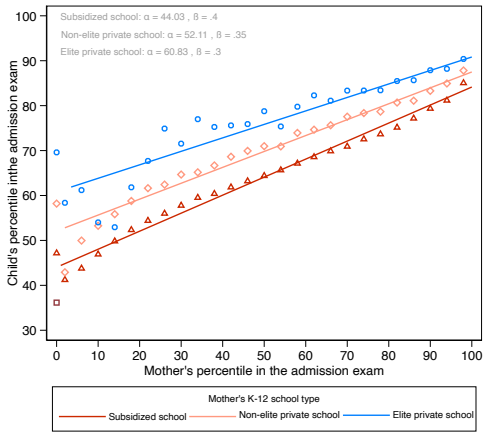
(a) Distribution of tuition fees



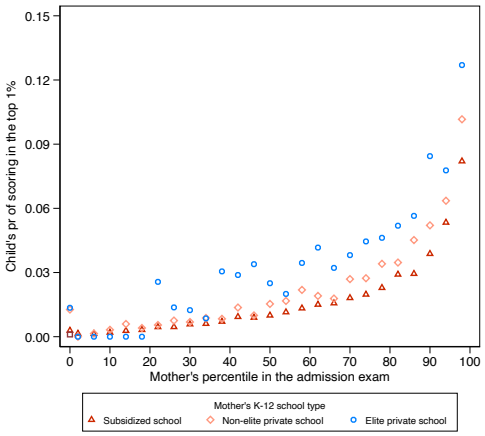
(b) Distribution of polo club elite name index

This figure describes inexpensive, non-elite expensive, and elite K-12 private schools along two dimensions: tuition fees and the polo club elite name index. Panel (a) illustrates the distribution of tuition fees charged by private schools. Panel (b) illustrates the distribution of the polo club elite name index. See section 2.1 for details.

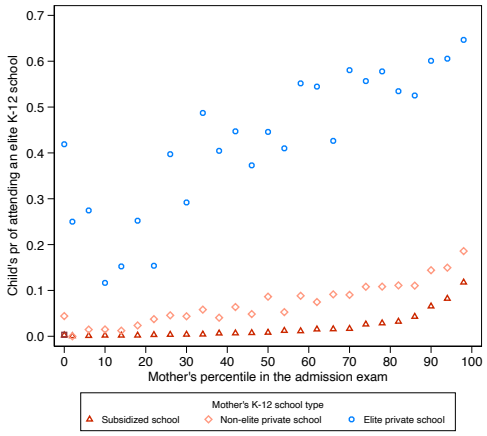
Figure 2: Correlations between mothers' scores and children's outcomes



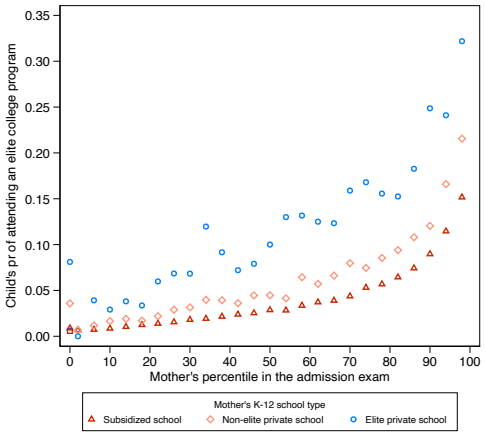
(a) Rank-rank exam score correlations



(b) Pr. child has top 1% score



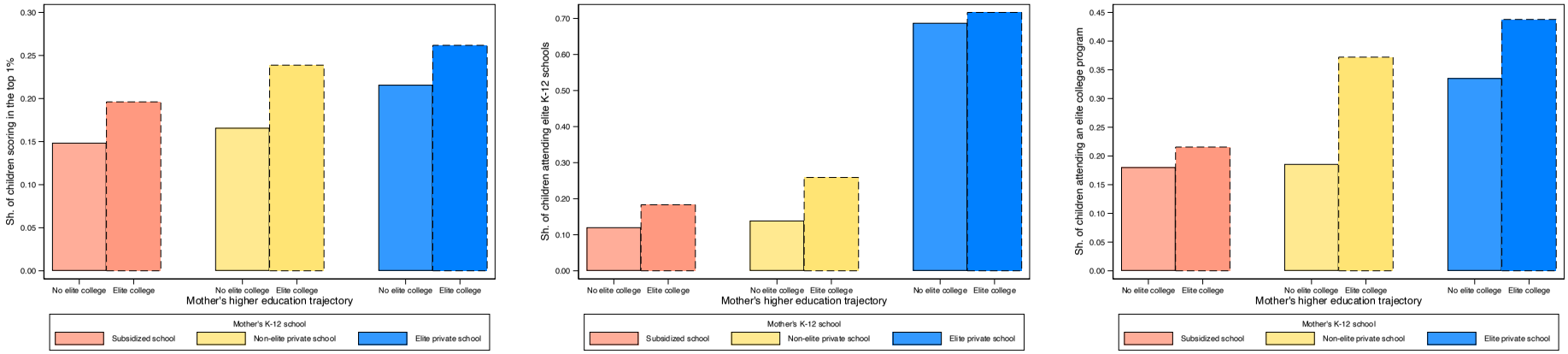
(c) Pr. child attends elite high school



(d) Pr. child attends top college program

This figure illustrates correlations between children's outcomes and their mothers' percentile in the university admission exam distribution, splitting by mother's high school type. Panel (a) illustrates the relationship between mothers' and children's percentiles in the university admission exam. Child outcomes are average percentiles within bins defined by mother's scores. Panel (b) focuses on the probability that a child reaches the top 1% in the university admission exam distribution. Panel (c) shows the probability that a child attends an elite high school. Panel (d) shows the probability that a child attends a top college program. Maroon squares in all panels (at lower left) illustrate cases in which we do not observe mothers' high school and scores. Linear fits in panel (a) exclude observations where mother's scores are not observed. Panels (a) and (b) include cases in which children did not take the admissions exam; these children are treated as having zero rank or not achieving a top score, respectively. See section 4.1 for details.

Figure 3: Children's outcomes by mother's elite college program attendance



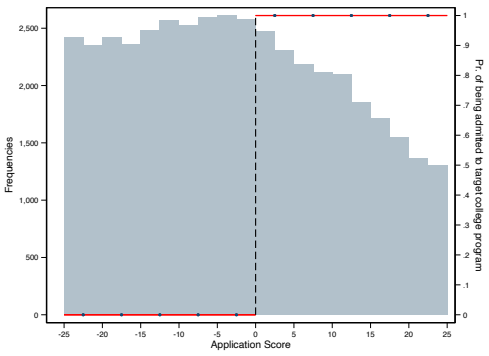
(a) Pr. child has top 1% score

(b) Pr. child attends elite high school

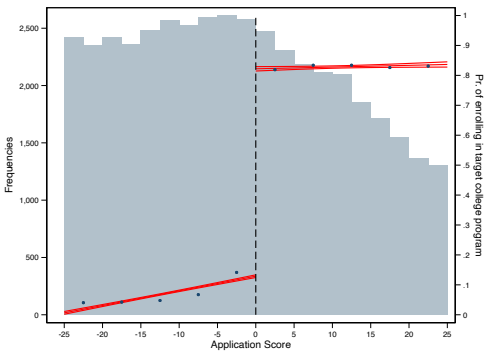
(c) Pr. child attends elite college program

This figure illustrates how children's outcomes relate to whether their mothers attended elite college degree programs. All mothers in the sample used to build this figure scored in the top 1% of the university admission exam. The colors of the bars denote the type of high school attended by the mother. Dark bars with solid borders illustrate means for children whose mothers did not attend an elite college program. Light bars with dashed borders illustrate the means for children whose mothers did attend an elite college program. Panel (a) shows the probability that a child scores in the top 1% of the university admission exam distribution. Panel (b) shows the probability that a child attends an elite high school. Panel (c) shows the probability that a child attends an elite college program. See section 4.2 for details.

Figure 4: Changes in admission and enrollment outcomes around the admission cutoff



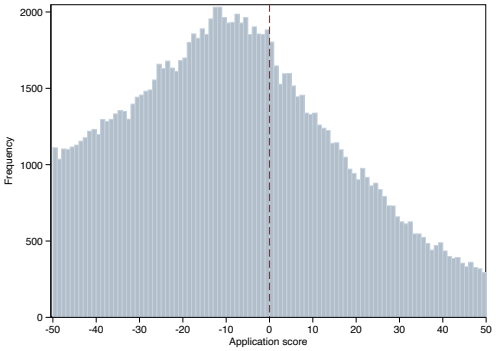
(a) Admitted to target college program



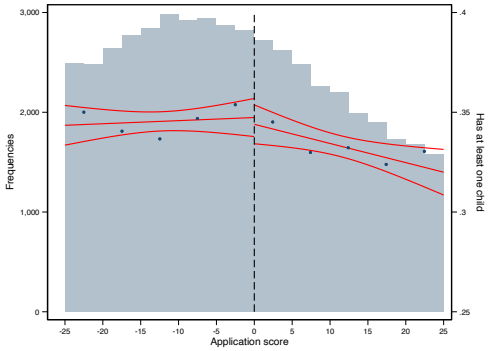
(b) Enroll in the target college program

Panel (a) illustrates how the probability of receiving an offer to an elite college program through the centralized admission system changes around the admission cutoff. Panel (b) illustrates the change in the probability of enrolling in the target elite college program. This figure uses data from the 2006 through 2017 application cycles. These are the years for which we observe enrollment data. The blue bars in the background illustrate the distribution of the running variable (i.e., application scores). Blue dots represent outcome means at different levels of the running variable. The red lines correspond to linear regressions and their 95% confidence intervals and were independently estimated at each side of the cutoff. See section 5.2 for details.

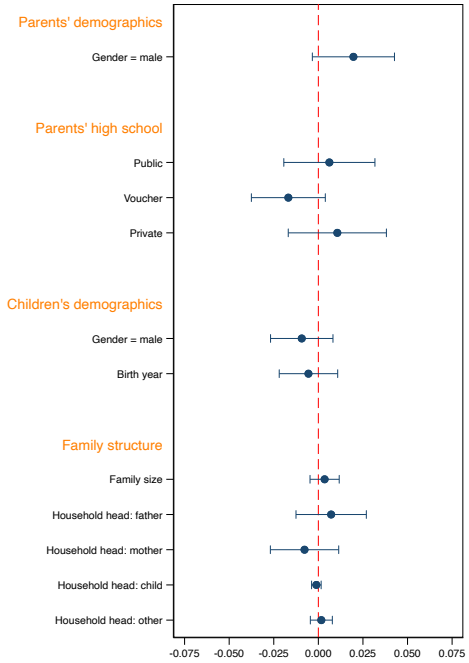
Figure 5: Regression discontinuity validity tests



(a) Distribution of application score



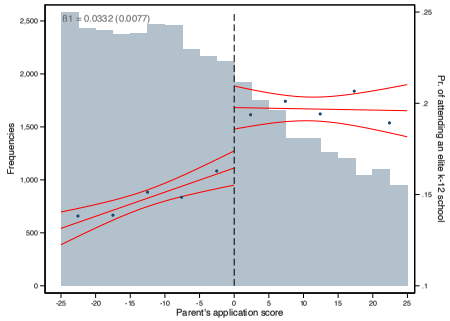
(b) Pr. of having a child



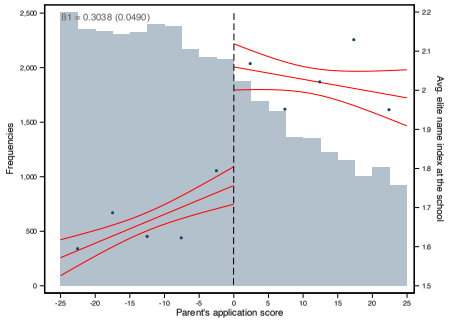
(c) Discontinuities in potential confounders

This table presents the results of several tests of the validity of the regression discontinuity design. Panel A illustrates the distribution of application scores of individuals applying to elite college programs between 1977 and 2003 (i.e., the years in which we observe parents). Panel (b) uses the same sample to study how admission to an elite college program affects the probability of observing an applicant's child in our sample. Panel (c) reports regression discontinuity estimates of how threshold-crossing affects predetermined covariates. The estimates in Panel (c) come from running specification 1 taking the predetermined covariates as outcomes. Blue dots represent point estimates. Blue lines are 95% confidence intervals. See section 5.2 for details.

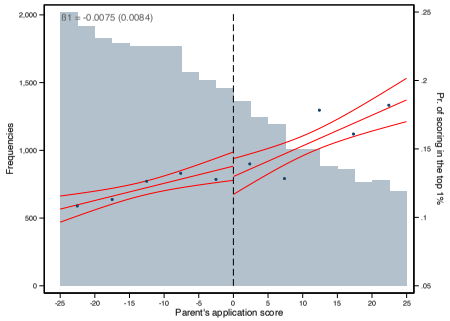
Figure 6: Effect of non-elite parents' admission to an elite college program on children's outcomes



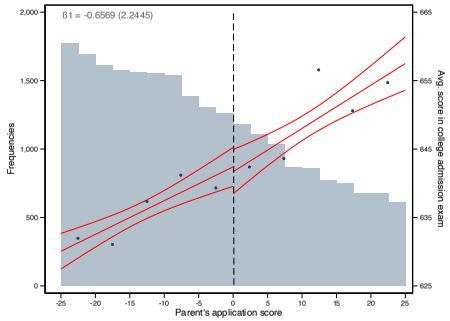
(a) Child attends elite K-12 school



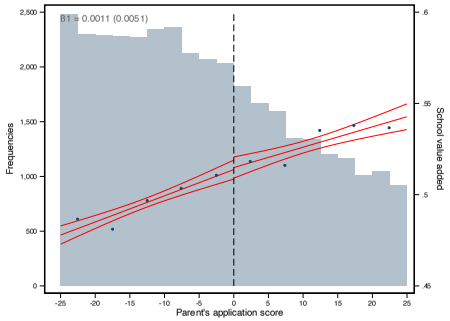
(b) Name index in child's school



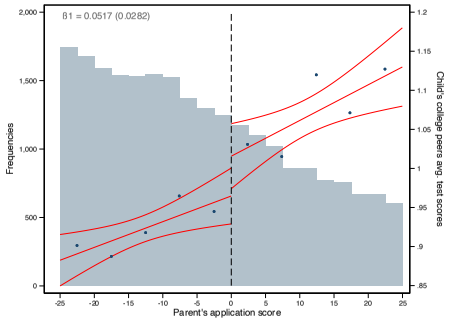
(c) Child scores in top 1%



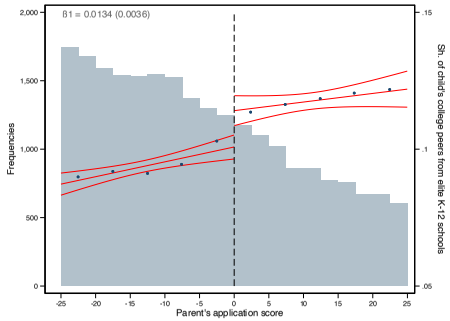
(d) Child's admissions exam score



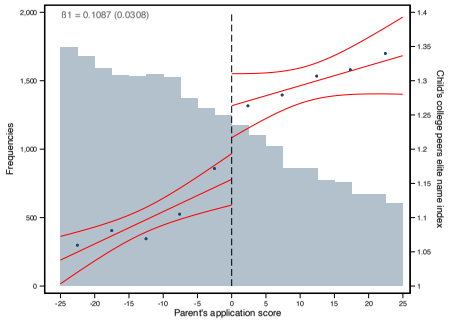
(e) Child's K-12 school value added



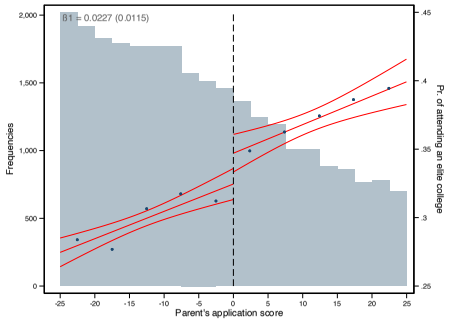
(f) Child's college peers test scores



(g) Child's college peers from elite schools



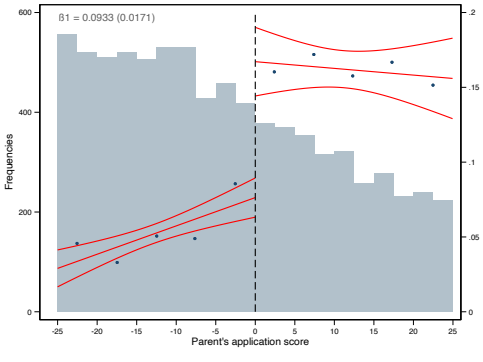
(h) Child's college peers name index



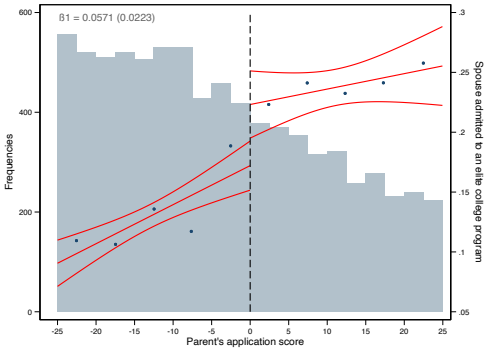
(i) Child attends an elite college

This figure illustrates how children's outcomes change when one of their parents gains admission to an elite college program. The sample is limited to parents applying to elite college programs who did not themselves attend an elite private K-12 school. Panel (a) shows the probability that the children attend an elite K-12 school; panel (b) the elite name index at the children's K-12 school; panel (c) children's probability of scoring in the top 1% of the college admission exam distribution; panel (d) children's average score in the college admission exam; panel (e) the value added of children's K-12 school; panels (f) to (h) characterize children's college peers in terms of test scores and of their social pedigree; finally panel (h) describes children's probability of attending an elite college (i.e., University of Chile or Catholic University). The running variable—i.e., parent's application score—is centered around the admission cutoff of the parent target degree. Each dot represents outcome averages at different levels of parents' application score. The red lines are fitted values from linear regressions and their 95% confidence intervals,

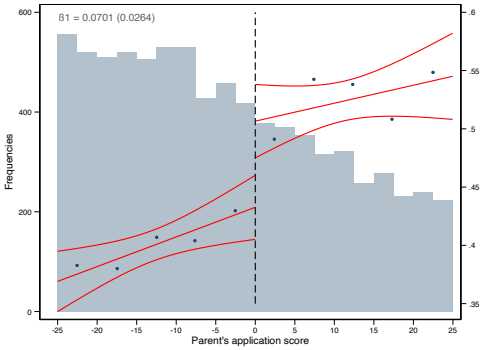
Figure 7: Effects of admission to an elite college program on spouse characteristics



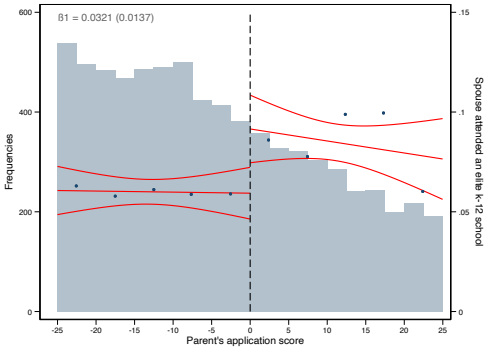
(a) Spouse admitted to target degree program



(b) Spouse admitted to any elite program



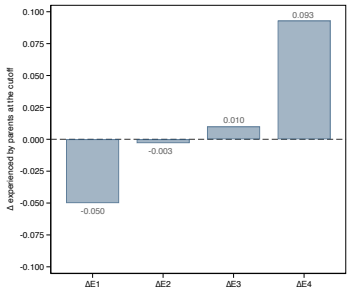
(c) Spouse attended an elite K-12 school



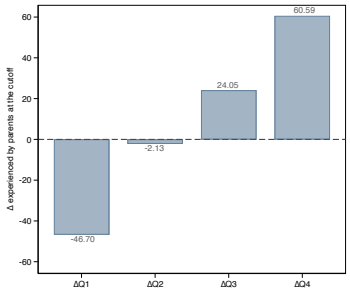
(d) Spouse attended any private K-12 school

This figure illustrates how admission to an elite college program changes the characteristics of spouses. Panel (a) shows the probability of marrying someone admitted to the target (i.e., above-threshold) degree program. Panel (b) shows the probability of marrying someone admitted to any elite college program. Panel (c) shows the probability of marrying someone who graduated from an elite private K-12 school, and panel (d) shows the probability of marrying someone who graduated from any private K-12 school (includes non-elite and elite private schools). The running variable in all cases corresponds to a parent application score. It is centered around the admission cutoff of his/her target program. Each dot represents the mean of the outcome variable at different levels of the parent's application score. The red lines illustrate the slope of the running variable and its 95% confidence interval. The slope is independently estimated at each side of the cutoff using a linear regression. The blue bars in the background show the distribution of the running variable. See section 6.3.4 for details.

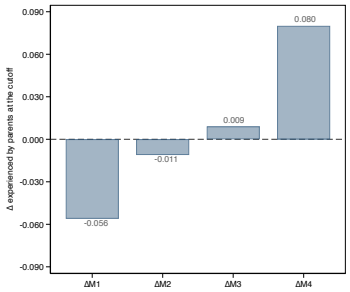
Figure 8: RD estimates of effects of parents' college exposure to elite peers (E), college exposure to high-scoring peers (Q), and college marriage prospects (M) on children's outcomes



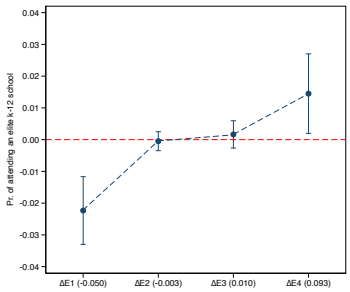
(a) E experienced by parents by ΔE



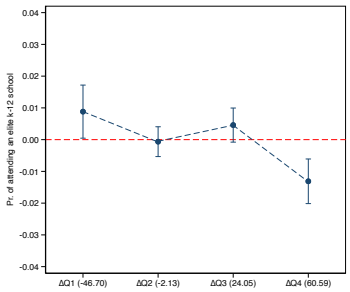
(b) Q experienced by parents by ΔQ



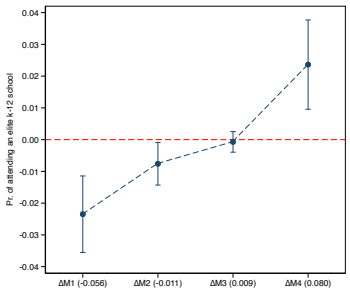
(c) M experienced by parents by ΔM



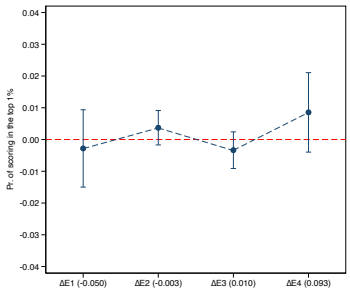
(d) Child attends an elite HS by ΔE



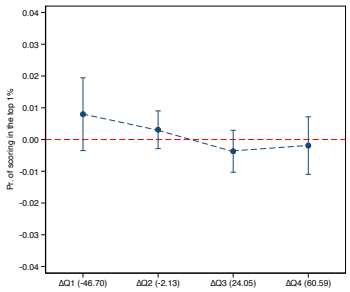
(e) Child attends an elite HS by ΔQ



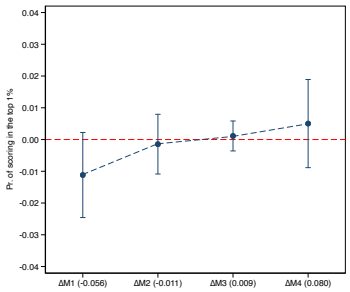
(f) Child attends an elite HS by ΔM



(g) Child scores in top 1% by ΔE



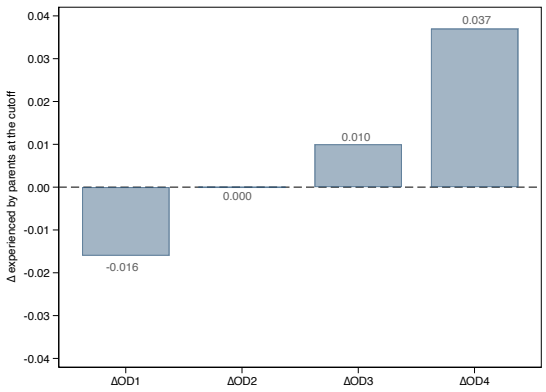
(h) Child scores in top 1% by ΔQ



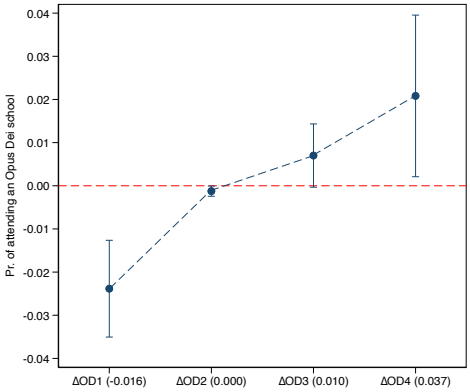
(i) Child scores in top 1% by ΔM

This figure illustrates how outcomes for children change when their parents cross admissions thresholds that shift them between different kinds of college degree programs. All results reported in this table are regression discontinuity estimates of equation 1, splitting the sample by attributes of the target and next option degree programs. The effect of parents' admission to their target college program is allowed to vary depending on the difference in the share of alumni of elite K-12 schools (ΔE), in peers' average score in the college admission exam (ΔQ), and in the share of non-elite students marrying alumni of elite K-12 schools (ΔM) in the target and next best college program. We split the sample in quartiles by ΔE, ΔQ, and ΔM. We then estimate equation 1 in each sub-sample. Each reported estimate represents the crossing threshold effect that being admitted to a target college program has on the outcome variable in the panel title for the listed quartile of ΔE, ΔQ and ΔM. The sample consists of parents who did not themselves attend elite private high schools applying to college degree programs in the centralized system with binding admissions constraints. Panels (a) to (c) illustrate the changes that parents experience at the cutoff in exposure to elite peers (E), in peer academic quality (Q), and in marriage market prospects (M). Panels (d) to (f) show changes in children's probability of attending an elite private K-12 school. Panels (g) to (h) show changes in the probability that the children score in the top 1% of the college admission exam. Vertical intervals in lower two rows are 95% confidence intervals. See section 6.4 for details.

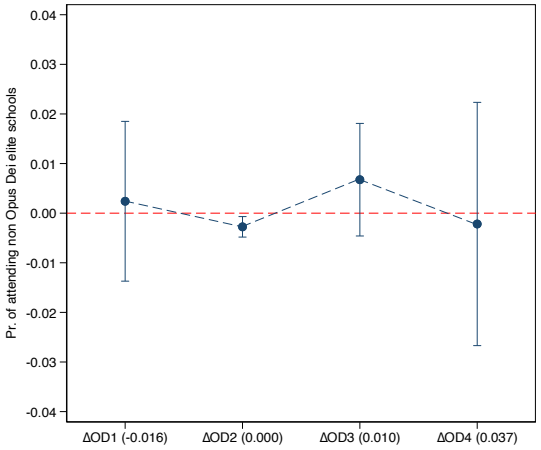
Figure 9: Effects of parents' college exposure to Opus Dei school alumni on children's K12 school



(a) Change in parents' exposure to Opus Dei alumni



(b) Child attends elite Opus Dei school



(c) Child attends non-Opus Dei elite school

This figure illustrates how exposure to college peers from different elite K-12 schools affects the schools to which non-elite parents send their children. We distinguish between two groups of elite schools: Opus Dei and non Opus Dei. We use the information on each parent's target and next best option to compute the change that he/she would experience in exposure to alumni of Opus Dei K-12 schools if admitted to the target degree program. We then split the sample in quartiles of ΔO (i.e., the change that parents experience in exposure to alumni of Opus Dei schools). We then estimate equation 1 in each sub-sample. Panel (a) illustrates how parents exposure to alumni of Opus Dei schools changes at the cutoff. The estimates in panels (b) and (c) illustrate the effect of parents' admission to their target program on the probability of sending their children to an Opus Dei and to a non Opus Dei elite K-12 school, respectively. The coefficients illustrated by the blue dots in the figures show how the crossing threshold effect changes depending on the size of ΔO, from reductions in the first quartile of $\Delta 0$ to increases in the third and fourth quartiles. Verttical lines are 95% CIs. See section 6.5 for details.

Table 1: K-12 school characteristics

	Subsidized schools (1)	Non-elite private schools (2)	Non-elite expensive schools (3)	Elite schools (4)
Standardized tuition fees	-0.152	4.170	8.528	8.484
Standardized admission exam scores	-0.067	1.342	1.812	2.018
Standardized value added	-0.058	0.961	1.748	2.017
Standardized elite name index (Polo club)	-0.102	0.789	1.893	5.734
Standardized elite name index (Who's Who)	-0.084	1.125	2.489	6.107
Observations	9383	451	35	22

Notes: The table characterizes different types of K-12 schools in terms of the tuition fees they charge, the average scores their students obtain in the college admission exam, their value added, and their eliteness. The eliteness of schools is measured by two elite-name indexes based on the last names of their students. The first one uses as reference the last names of the members of an exclusive club in Chile, "Club de Polo y Equitación San Cristóbal", while the second one uses the last names of relevant individuals for the Chilean history identified in de Ramon (2003). Column (a) describes subsidized schools, column (b) non-elite private schools, column (c) non-elite expensive schools, and column (d) elite schools. See section 2.1 for details.

Table 2: Sample construction

	A. Intergenerational Correlations Sample			
	All high school graduates	High school graduates registered for the admission exam	High school graduates registered for the admission exam and reporting parents id	High school graduates registered for the admission exam with parents also taking the exam
	(1)	(2)	(3)	(4)
A.1 Demographic characteristics				
Female = 1	0.52	0.53	0.54	0.52
Age in grade 12	17.88	17.83	17.82	17.79
A.2 Academic characteristics				
High school track: academic	0.57	0.65	0.66	0.84
High school gpa	5.60	5.68	5.69	5.80
Registers for the exam	0.82	1.00	1.00	1.00
Takes the exam	0.75	0.89	0.90	0.96
Math score	499.46	499.87	503.18	544.88
Reading score	495.32	495.68	499.04	539.93
Attends college	0.39	0.47	0.48	0.65
Attends an elite college	0.01	0.02	0.02	0.03
A.3 Socioeconomic characteristics				
Public school	0.44	0.40	0.39	0.25
Voucher school	0.47	0.49	0.50	0.53
Non-elite private school	0.08	0.09	0.10	0.19
Elite private school	0.01	0.01	0.01	0.03
Low income ($< CLP270,000$)	0.52	0.49	0.47	0.28
Mid income ($CLP270,000 - CLP834,000$)	0.34	0.36	0.37	0.42
High income ($> CLP834,000$)	0.14	0.15	0.16	0.30
Parental Ed. = Less than high school	0.15	0.13	0.12	0.00
Parental Ed. = Completed high school	0.52	0.52	0.51	0.36
Parental Ed. = Completed a vocational he degree	0.14	0.15	0.15	0.25
Parental Ed. = Completed a university degree	0.19	0.20	0.21	0.40
Observations	2955112	2430011	2173416	980366

	B. Elite Colleges Sample			
	All college applicants (1977 - 2003)	College applicants with children	Elite college applicants with children (below the admission cutoff)	Elite college applicants with children (above the admission cutoff)
	(1)	(2)	(3)	(4)
B.1 Demographic characteristics				
Female = 1	0.46	0.67	0.50	0.51
B.2 Academic characteristics				
Math score	610.22	599.44	670.91	696.83
Reading score	583.82	574.68	656.25	676.63
Admitted to any college	0.70	0.65	0.83	1.00
Admitted to an elite college	0.04	0.03	0.06	1.00
B.3 Socioeconomic characteristics				
Public school	0.44	0.48	0.31	0.25
Voucher school	0.26	0.23	0.15	0.13
Non-elite private school	0.22	0.19	0.35	0.38
Elite private school	0.03	0.02	0.08	0.13
Observations	878240	360492	8473	6603

Notes: Panel A presents summary statistics for students reaching their high school senior year between 2003 and 2017. Column (a) describes all the students in the sample, column (b) those who register for the university admission exam after completing high school, column (c) students who report their parents ID number, and column (d) students with at least one parent taking the university admission exam between 1968 and 2003. Panel B presents summary statistics for individuals applying to college between 1977 and 2003. Column (a) describes the whole sample, column (b) those for whom we find children, and column (c) and (d) those who in addition to having children applied to top college programs and were near the admission cutoff. Column (c) focuses on those who did not gain admission, while column (d) on those who did gain admission. See section 3 for details.

Table 3: Effects of elite college admission on enrollment outcomes and peer environment

	All schools (1)	Non-elite schools (2)	Elite schools (3)
Pr. of being admitted to target program	1.0000	1.0000	1.0000
	(0.0000)	(0.0000)	(0.0000)
Pr. of enrolling in target program	0.7574	0.7391	0.8594
	(0.0472)	(0.0498)	(0.0344)
Pr. of enrolling in any elite program	0.5249	0.5229	0.5373
	(0.0834)	(0.0839)	(0.1004)
Pr. of enrolling in any elite college	0.2689	0.2823	0.1999
	(0.0544)	(0.0558)	(0.0689)
Avg. peer score in admission exam	26.3319	25.7998	29.6491
	(3.1807)	(3.3436)	(2.7982)
Sh. of peers from elite K-12 schools	0.0471	0.0507	0.0274
	(0.0087)	(0.0074)	(0.0222)
Elite name index of college peers (P)	0.4966	0.4971	0.4575
	(0.1082)	(0.0840)	(0.2635)
Observations	34798	29405	5393

Notes: This table presents regression discontinuity estimates from equation (1) of changes in college applicants' enrollment outcomes and college peer environments when they cross the threshold for admission to an elite degree program. We use data on individuals applying to elite college programs between 2007 and 2018, the years for which we observe enrollment. The titles in each row indicate the outcome variable. "Elite name index of college peers (P)" is the polo club elite name index. Columns reflect estimates in different samples, determined by student high school type. See section 3 for details. An observation corresponds to an individual × college program application. Standard errors clustered at the applicant level are reported in parentheses.

Table 4: Effect of parent admission to an elite college program on children's outcomes

	All parents (1)	Non-elite parents (2)	Elite parents (3)	All parents (4)	Non-elite parents (5)	Elite parents (6)
	Panel A - Effects on child's K-12 school					
	Pr. of attending an elite private school			Elite name index in K-12 school		
Parent admitted to target program = 1	0.0448	0.0332	0.0272	0.3431	0.3038	-0.1204
	(0.0079)	(0.0077)	(0.0236)	(0.0518)	(0.0491)	(0.1600)
Observations	42696	37268	5428	42696	37268	5428
Counterfactual mean	0.216	0.158	0.676	2.146	1.730	5.362
	Panel B - Effects on child's human capital					
	Pr. of scoring in the top 1%			Avg. score in the college admission exam		
Parent admitted to target program = 1	-0.0060	-0.0075	-0.0023	0.3738	-0.6569	5.5176
	(0.0081)	(0.0084)	(0.0270)	(2.0936)	(2.2445)	(5.5996)
Observations	30663	27204	3458	26681	23789	2891
Counterfactual mean	0.137	0.129	0.209	641.157	637.936	670.473
	Panel C - Effects on child's college program characteristics					
	Peer avg score in the college admission exam			Sh of peers from elite K-12 schools in college		
Parent admitted to target program = 1	0.0569	0.0517	0.0642	0.0131	0.0134	-0.0005
	(0.0263)	(0.0282)	(0.0697)	(0.0035)	(0.0036)	(0.0121)
Observations	30663	27204	3458	30663	27204	3458
Counterfactual mean	0.998	0.953	1.410	0.106	0.094	0.219
	Panel D - Effects on child's type of college and program					
	Pr. of attending an elite college			Pr. of attending an elite college program		
Parent admitted to target program = 1	0.0237	0.0227	0.0222	0.0056	0.0050	0.0052
	(0.0108)	(0.0115)	(0.0331)	(0.0086)	(0.0090)	(0.0283)
Observations	30663	27204	3458	30663	27204	3458
Counterfactual mean	0.315	0.302	0.439	0.156	0.147	0.235

Notes: The table presents estimates of regression discontinuity specification (1) that describe the effect of parent admission to an elite college program on outcomes for their children. We split the sample by parent's high school type as noted in columns. Outcomes are listed in panel sub-headers. Samples vary across panels. Panel A uses data on children old enough to have enrolled in primary education within our sample period (i.e., born before 2014). Panels B to D use data on children old enough to have applied to college in our sample period (i.e., born before 2001). The specification also includes parents' application-year fixed effect, parents' target program fixed effect, and parents' next best program fixed effect. Standard errors clustered two ways at the parent × child level are in parentheses. "Counterfactual means" are below-threshold mean values of the outcome of the dependent variable. See section 6.1 for details.

Table 5: Effect of parent elite admission on children's outcomes, splitting by child and parent gender

	All children (1)	Daughters (2)	Sons (3)	All children (4)	Daughters (5)	Sons (6)
	Panel A - Effects on child's K-12 school					
	Pr. of attending an elite private school			Pr. of attending a non-elite private school		
Non-elite parent admitted to target program = 1	0.0332	0.0392	0.0272	-0.0344	-0.0480	-0.0208
	(0.0077)	(0.0108)	(0.0110)	(0.0096)	(0.0135)	(0.0136)
Observations	37266	18553	18712	37266	18553	18712
Counterfactual mean	0.158	0.158	0.158	0.673	0.668	0.678
Non-elite mother admitted to target program = 1	0.0295	0.0290	0.0306	-0.0349	-0.0495	-0.0204
	(0.0115)	(0.0161)	(0.0166)	(0.0136)	(0.0191)	(0.0193)
Observations	16871	8425	8446	16871	8425	8446
Counterfactual mean	0.173	0.172	0.173	0.709	0.708	0.709
Non-elite father admitted to target program = 1	0.0372	0.0502	0.0241	-0.0322	-0.0428	-0.0206
	(0.0104)	(0.0148)	(0.0147)	(0.0135)	(0.0191)	(0.0190)
Observations	20395	10128	10266	20395	10128	10266
Counterfactual mean	0.146	0.146	0.146	0.642	0.633	0.651
	Panel B - Effects on child's human capital					
	Pr. of scoring in the top 1%			Avg. score in the admission exam		
Non-elite parent admitted to target program = 1	-0.0075	0.0147	-0.0298	-0.6569	0.0819	-1.4346
	(0.0084)	(0.0110)	(0.0128)	(2.2445)	(3.0693)	(3.2641)
Observations	27202	13532	13669	23786	11847	11938
Counterfactual mean	0.129	0.099	0.159	637.936	631.880	643.907
Non-elite mother admitted to target program = 1	0.0172	0.0415	-0.0075	2.9746	3.3879	2.2720
	(0.0147)	(0.0194)	(0.0222)	(3.5472)	(4.8389)	(5.1436)
Observations	9987	4948	5039	8267	4063	4203
Counterfactual mean	0.148	0.117	0.179	652.054	646.589	657.292
Non-elite father admitted to target program = 1	-0.0205	-0.0025	-0.0409	-1.8803	-1.3516	-2.9861
	(0.0102)	(0.0132)	(0.0157)	(2.8715)	(3.9069)	(4.1931)
Observations	17215	8584	8630	15519	7784	7735
Counterfactual mean	0.117	0.088	0.146	630.109	623.903	636.329
	Panel C - Effects on child's type of college and program					
	Pr. of attending an elite college			Pr. of attending an elite program		
Non-elite parent admitted to target program = 1	0.0227	0.0221	0.0243	0.0050	0.0128	-0.0032
	(0.0115)	(0.0163)	(0.0162)	(0.0090)	(0.0114)	(0.0138)
Observations	27202	13532	13669	27202	13532	13669
Counterfactual mean	0.315	0.325	0.305	0.147	0.111	0.182
Non-elite mother admitted to target program = 1	0.0290	0.0457	0.0117	0.0114	0.0177	0.0053
	(0.0192)	(0.0274)	(0.0271)	(0.0157)	(0.0198)	(0.0241)
Observations	9987	4948	5039	9987	4948	5039
Counterfactual mean	0.352	0.362	0.342	0.175	0.130	0.218
Non-elite father admitted to target program = 1	0.0215	0.0086	0.0337	0.0028	0.0097	-0.0075
	(0.0143)	(0.0204)	(0.0202)	(0.0110)	(0.0141)	(0.0168)
Observations	17215	8584	8630	17215	8584	8630
Counterfactual mean	0.293	0.303	0.283	0.130	0.099	0.161

Notes: The table presents estimates of specification (1) showing the effect of admission to an elite college program on children's education trajectories. The sample is limited to parents who did not themselves attend an elite private school. Columns are sample splits and rows are outcomes. Within each panel, the first row reports effects pooling mothers and fathers, the middle row reports effects for mothers, and the bottom row reports effects for fathers. Columns within each subpanel report, from left to right, estimated effects for all children, daughters only, and sons only. The sample varies across panels. Panel A focuses on children old enough to observe attending primary education (i.e., born before 2014). Panels B and C focus on children old enough to observe applying to college (i.e., born before 2001). Standard errors clustered two ways at the parent × child level are reported in parentheses. The counterfactual mean is the mean of the outcome variables just below the admissions cutoff. See Section 6.3.1 for details.

Table 6: Effect of parents' admission to elite college programs on educational expenditures for children

	Pr. of observing tuition fees (1)	Tuition Fees (CLP) (2)	Pr. of attending an expensive school (3)	Pr. of attending an expensive elite school (4)	Pr. of attending an expensive non-elite school (5)	School type specific mean tuition (CLP) (6)
Parent admitted to target program = 1	0.0017	147,044	0.0414	0.0410	0.0004	95,638
	(0.0079)	(46,444)	(0.0107)	(0.0089)	(0.0093)	(20,249)
Observations	37268	30247	30247	30247	30247	30247
Counterfactual mean	0.810	3,631,832	0.360	0.168	0.192	3,759,138

Notes: The table presents regression discontinuity estimates obtained using equation (1). The is limited to children a) whose parents applied to elite degree programs and did not themselves attend elite private high schools and b) who attend schools for which we observe annual tuition fees (with the exception of the first column). Expensive schools are defined as those charging the same or more than the cheapest elite private school (i.e., CLP 4,790,000). This means that we classify all elite schools in our sample as expensive schools. "Type-specific mean tuition" is the mean value of tuition for the type of school the child attends, where type either elite private or other. Standard errors clustered two ways at the parent × child level are reported in parentheses. "Counterfactual means" are below-threshold means of the outcome variable. See section 6.3.2 for details.

Table 7: Effects of parents' admission to elite college programs on marriage market outcomes

	All Parents (1)	Mothers (2)	Fathers (3)
Spouse observed = 1			
Admitted into target program = 1	0.0113	0.0225	-0.0057
	(0.0132)	(0.0171)	(0.0174)
Counterfactual mean	0.598	0.379	0.825
Spouse was admitted into target program = 1			
Admitted into target program = 1	0.0933	0.1470	0.0660
	(0.0171)	(0.0377)	(0.0170)
Counterfactual mean	0.060	0.115	0.030
Spouse was admitted into an elite college program = 1			
Parent admitted into target program = 1	0.0571	0.0926	0.0396
	(0.0223)	(0.0450)	(0.0235)
Counterfactual mean	0.170	0.296	0.102
Spouse was admitted to an elite college = 1			
Admitted into target program = 1	0.0701	0.0632	0.0741
	(0.0264)	(0.0458)	(0.0330)
Counterfactual mean	0.446	0.475	0.433
Spouse attended an elite school = 1			
Admitted into target program = 1	0.0321	0.0284	0.0337
	(0.0137)	(0.0292)	(0.0155)
Counterfactual mean	0.075	0.099	0.065
Spouse attended any private school = 1			
Admitted into target program = 1	0.071	0.0975	0.0627
	(0.0236)	(0.0458)	(0.0281)
Counterfactual mean	0.397	0.405	0.394
Spouses' performance in admission exam			
Admitted into target program = 1	0.0241	-2.1690	1.7944
	(4.8833)	(7.9793)	(5.9440)
Counterfactual mean	579.228	627.884	556.470
Observations	5834	1953	3821

Notes: The table presents regression discontinuity estimates of specification (1) with spouse attributes as the outcome of interest. The sample is mothers and fathers applying to elite degree programs who did not attend elite high schools themselves. Rows are outcomes and columns are sample splits. Column (1) pulls mothers and fathers together, column (2) focuses on mothers, and column (3) on fathers. Standard errors clustered at the applicant level are in parentheses. "Counterfactual means" are below-threshold means of the dependent variable. See section 6.3.4 for details.

Table 8: Effect of parents' admission to an elite college program on children's neighborhood

	All parents (1)	Non-elite parents (2)	Elite parents (3)
	Panel A - Elite name index		
Parent admitted in target major	0.2552	0.2319	0.1628
	(0.0837)	(0.0838)	(0.2859)
Observations	9424	8579	845
Counterfactual outcome mean	1.930	1.729	4.165
	Panel B - Avg. tuition fees		
Parent admitted in target major	139,813	137,079	37,163
	(47,988)	(49,523)	(132,361)
Observations	9424	8579	845
Counterfactual outcome mean	1.930	1.729	4.165
	Panel C - Avg. scores in the college admission exam		
Parent admitted in target major	6.8683	6.8466	-0.9822
	(2.2252)	(2.3448)	(5.1389)
Observations	9423	8578	845
Counterfactual outcome mean	598.947	594.904	643.840
	Panel D - Census block square meter average price (UF)		
Parent admitted in target major	1.9528	1.4541	1.3382
	(1.0852)	(1.1388)	(2.4436)
Observations	9423	8578	845
Counterfactual outcome mean	52.051	50.489	67.913

Notes: The table presents estimates of regression discontinuity specification (1) that describe the effect of parent admission to an elite college program on the characteristics of the neighborhood in which they lived when their children completed high school. We split the sample by parents' high school type as noted in columns. Outcomes are listed in panel sub-headers. We only observe addresses for children completing high school in the Santiago, Valparaiso, and Biobio regions. More than 60% of the student population attends school in one of these three regions. While the analyses presented in panels A to C focus on characteristics of neighbors living in a 100 meter radius, the analysis in panel D focuses on the average square meter price in a census block. In urban areas, a census block coincides with an actual block. The specification includes parents' application-year fixed effect and parents' target program fixed effect. Standard errors clustered two ways at the parent × child level are in parentheses. "Counterfactual means" are below-threshold mean values of the outcome of the dependent variable. See section 6.3.5 for details.

Table 9: Effects of attributes of parents' college programs on children's outcomes

	Pr. of attending an elite K-12 school	Pr. of scoring in the top 1%	Avg. score in admission exam	Attends an elite college	Attends an elite college program	Avg peer score in college program in college	Sh. of peers from elite K-12 schools peers (P)	Elite name index among college program
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Parent admitted in target major=1	-0.0010	-0.0010	0.7376	-0.0006	-0.0009	0.000927	-0.000333	-0.002826
	(0.0017)	(0.0021)	(0.7400)	(0.0030)	(0.0021)	(0.0084)	(0.0008)	(0.0074)
Parent admitted in target major=1 × ΔE (STD)	0.0073	0.0042	0.0119	0.0206	0.0092	0.006499	0.005936	0.047654
	(0.0042)	(0.0041)	(1.2489)	(0.0059)	(0.0043)	(0.0151)	(0.0019)	(0.0161)
Parent admitted in target major=1 × ΔQ (STD)	-0.0077	-0.0036	-2.4424	-0.0060	-0.0018	-0.029007	-0.001908	-0.019350
	(0.0019)	(0.0025)	(0.9232)	(0.0037)	(0.0025)	(0.0104)	(0.0010)	(0.0087)
Parent admitted in target major=1 × ΔM (STD)	0.0097	0.0005	0.4635	-0.0113	-0.0005	0.008812	-0.000226	-0.001324
	(0.0037)	(0.0036)	(1.1585)	(0.0054)	(0.0038)	(0.0139)	(0.0017)	(0.0145)
Observations	350983	276984	242545	276984	276984	239194	239194	239194
Counterfactual mean	0.063	0.068	600.829	0.187	0.072	0.647	0.048	0.695

Notes: This table presents estimates from parametric regression discontinuity specification (2) of the effects of attributes of the programs to which parents are admitted on outcomes for children. Each column is a single specification. Reported coefficients are the main effect of admission to the target program and interactions between admission and differences between the attributes of the target and next-option degree program. We consider differences along three dimensions: share of college peers from elite high schools (ΔE), average college peer exam scores (ΔQ), and share of non-elite college peers who marry alumni of elite K-12 schools (ΔM). All the Δ variables are in standard deviation units. Samples vary across columns due to data availability. Column (1) focuses on children old enough to observe attending primary education (i.e., born before 2014). The rest of the columns focus on children old enough to observe applying to college (i.e., born before 2001). "Elite name index among college peers (P)" is the polo club elite name index. We control for a linear polynomial of the running variable, the slope of which is allowed to change at the cutoff. The slope of the running variable on both sides of the cutoff is allowed to vary with ΔE, ΔQ and ΔM. The main effects of ΔE, ΔQ, and ΔM are also included in the specification. We also control for parents' application-year and parents' target program and next option fixed effects. Standard errors clustered two ways at the parent × child level are presented in parentheses. "Counterfactual mean" is the mean below-threshold value of the depend variable. See section 6.4 for details.

Table 10: Inter- and intra-generational correlations between social and human capital

	Baseline model	No direct effect of elite colleges on social capital or on the marriage market ($\alpha_3 = 0, \delta_3 = 0, \psi_3 = 0$)	No direct effect of social capital on elite college attendance ($\gamma_1 = 0$)	No direct effect of elite colleges on social capital ($\alpha_3 = 0$)	No direct effect of elite colleges on marriage market ($\delta_3 = 0, \psi_3 = 0$)
	(1)	(2)	(3)	(4)	(5)
$Corr(S_{it}, H_{it})$	0.1929	0.1379	0.1743	0.1409	0.1868
$Corr(S_{it}, S_{it-1})$	0.3567	0.2384	0.2594	0.2433	0.3490
$Corr(H_{it}, H_{it-1})$	0.2795	0.2718	0.2768	0.2737	0.2769
$Corr(S_{it}, H_{it-1})$	0.2905	0.1935	0.2871	0.1978	0.2841
$Corr(H_{it}, S_{it-1})$	0.1501	0.1288	0.1381	0.1316	0.1460

Notes: The table presents correlations obtained from the VAR model described in Section 7. The figures on the first column come from the baseline model. The figures in columns (2) to (5) come from restricted versions of the model. Restricted versions of the models make some parameters equal to zero, but keep the variance-covariance matrix estimated for the baseline model unchanged.