

Why Student Aid Matters?

Roadblocks to the Transition into Higher Education for Forced Migrants in Chile

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Abstract

Education is a powerful tool for social mobility and cultural integration. However, it is one of the largest hurdles for migrants—particularly for forcefully displaced migrants, given their more vulnerable condition and lack of resources to pay for private education. This paper explores educational gaps between migrants and natives in Chile, a country that provides free public education to newcomers. The paper analyzes an administrative data set that includes all students in the Chilean educational system and follows students from 2017 to 2018. Using a research discontinuity design around the cut-off for financial aid to tertiary education,

this paper investigates whether access to financial aid generates incentives for forced migrants to enroll in tertiary education. This research confirms previous findings that show that migrants have lower advancement and enrollment rates than natives at every school level. Moreover, it finds that financial aid applications constitute a major roadblock preventing migrant students from accessing higher education. Furthermore, the paper presents suggestive evidence showing that the interaction between the type of school (vocational vs. technical) and the migrant condition affects applications for financial aid.

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Why Student Aid Matters? Roadblocks to the Transition into Higher Education for Forced Migrants in Chile *

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Introduction

Forced migration within Latin America was relatively rare after the end of the authoritarian governments in the 1980s. However, man-made crises like those resulting from unstable political regimes and increased violence, as well as natural disasters have increased the number of forced migrants in the region in the last two decades.

Chile's immigrant population has increased from just over 4 percent in 2017 to an estimated 7.5 percent in 2021, one of the largest in the region. Nearly 30 percent of these arrivals can be considered forced migrants as they came from Colombia, Haiti, and Venezuela (INE, 2021). Arriving in a new country produces a wide array of challenges for migrants, ranging from social to labor market integration to a lack of knowledge of the available host state's benefits (UNHCR, 2020). Most prior research on immigrants' integration has focused on the adult population or the effects of migration on natives' educational outcomes. The effects on the migrants themselves remain relatively unexplored (Cerrutti and Binstock, 2012). Thus the education of this new migrant population is a key research and policy question.

Understanding how young migrants are included in the host country's educational system is a critical aspect of migrant populations' long-term integration (Bandiera et al., 2019) and helps determine their chances of upward mobility (Chetty et al., 2017). Previous scholarly research has shown that immigration increases pressure on educational institutions in the developed world (Suárez-Orozco et al., 2011). For instance, in 2018 there were approximately 18 million children under 18 in the US with foreign-born parents (MPI, 2019). These arrivals put some pressures on the local education systems all around the country. Developing countries with similar or smaller flows of migrants are likely to be more severely affected, since most are underfunded and already struggle to meet local educational demands. In addition to pressures on the educational system, studies in continental Europe have demonstrated that there are cognitive differences between immigrant and native children (Hull and Norris, 2020) and that socioeconomic disparities reproduce among migrant and native students (Entorf and Lauk, 2008).

Education is considered a powerful tool to ensure the assimilation and future well-being of young migrants – particularly those who were forced to migrate, as they are more vulnerable than other immigrants (IOM, 2020). Moreover, education is a powerful engine of social mobility. In Latin America, higher education graduates earn 100% more than high school graduates and are more integrated into the country's labor market and social fabric (OECD, 2016). However, little is known about how well forced migrants

integrate into the region’s educational sector or the extent to which they benefit from public services.

In this paper we analyze the educational transitions of young forced migrants in Chile. We examine students’ educational trajectories and the institutional roadblocks that could impede their transition to higher education. We use data from Chile’s Ministry of Education (2017–2020) to identify such roadblocks to access and advancement. We also employ a regression discontinuity design (RDD) to compare access to financial resources for higher education between migrants and non-migrants.

Our results show that offering financial aid effectively increases access to higher education, but there are significant gaps between native-born and migrant (and especially forced migrant) students. We also identify gaps between students in general education versus vocational schools. Moreover, and rather counterintuitively, financial aid has a greater impact on migrants in general education schools than their native counterparts.

These results advance the literature on migrants’ educational outcomes in at least three important ways. First, in addition to confirming prior national and international findings regarding the widening gap in educational enrollment between natives and migrants, we identify forced migrants as an even more vulnerable group. Second, our results complement the literature on forced migrants in continental Europe by focusing on a developing country to identify some of the problems developing nations have when accepting migrants into their already crowded public education systems. Third, we highlight the importance of information and access to financial resources in helping migrant students access higher education.

This paper is part of a World Bank series that analyzes the educational and labor market integration of migrants, forced migrants, and refugees in various countries and its effects on different forms of inequalities between groups. For instance, for the Malian case, (Foltz and Shibuya, 2021) analyzes the results of a household survey and concludes that an influx of internally displaced persons (IDPs) is associated with ‘non-decreasing’ wealth and is uncorrelated with inequality and poverty. Similarly, in Switzerland, (Mullera et al., 2021) analyze the labor market integration of refugees and find that early labor market integration is vital to their long-term integration and the reduction of unequal access to the labor market between natives and migrants. In contrast to these results, (Sedova et al., 2021) identified that poorer local communities in Nigeria are negatively affected by forced migrant influxes as the competition for access to scarce welfare services increases. Similarly, (Hoseini and Jahan Dideh, 2021) argue that turbulent economic periods have larger detrimental effects for Afghan forced

migrants in Iran when compared to the native population.

From this series, our results align most with those from (Kovac et al., 2021) as the authors explore the effects of forced displacement on the educational attainment of voluntary migrants, IDPs, and refugees in Croatia and Bosnia. For Croatia they use a similar dataset to ours and for Bosnia a representative survey. Overall, they find that greater war exposure to conflict negatively affects the educational attainment of migrants. For Bosnia they identify some educational and economic advantages of external migration, but these advantages diminish or become negative for individuals who were directly forced to move. In Croatia, they find a small convergence in educational outcomes between the refugee and host groups.

The remainder of the paper is structured as follows. In the next section, we describe the Chilean case and identify some of the major educational roadblocks for forced migrants, migrants, and native students. We then present a brief literature review and outline our main hypotheses. Afterwards, we describe our research design and report our results. Finally, we discuss the results and propose some public policy recommendations.

Context

Migration and educational inclusion in Chile

Chile has made remarkable progress in terms of economic growth and access to public education compared with other Latin American countries over the last 40 years. This success has made it an attractive destination for migrants and forced migrants from elsewhere in the region. Chile’s foreign-born population increased by more than 19 percent from 2018 to 2019, when it comprised 7.5 percent of the population). It is thus a unique case for studying migrant educational outcomes.

Half of Chile’s current immigrant population has arrived since 2015 (INE, 2017). Nearly 80 percent of the country’s migrant population as of 2020 comes from five countries: Venezuela, (30.7 percent), Peru (16.3 percent), Haiti (12.5 percent), Colombia (11.4 percent), and Bolivia (8.5 percent) INE (2021). Over two-thirds (71 percent) are aged 15–44. Furthermore, poverty is higher among immigrants (10.8 percent) than among native Chileans (8.5 percent), and multidimensional poverty (which includes factors in addition to income) is even higher at 24.6 percent and 20.5 percent, respectively. Thus, migrants remain a vulnerable population.

Chile's socioeconomic improvement was a result of privatizations and demand-based educational policies that favored increased access, permanence in the school system, and graduation rates at all educational levels (SIES, 2020), which yielded significant gains in the quality and equity of education. Nevertheless, some disparities still persist among students from vulnerable backgrounds, as access to educational opportunities is uneven across geography, socioeconomic status, ethnicity, and migration status (OECD, 2017).

Chile has experienced a dramatic 616 percent rise in migrant school enrollment over the last 5 years: the percentage of foreign-born students rose from 0.6% in 2014 to 4.4% in 2019 (Servicio Jesuita a Migrantes, 2019). The country's higher education system has undergone a similar rapid increase, although smaller in magnitude: Migrant enrollment rose 369% over the last decade, and 13% from 2018 to 2019. In 2019, Chile had 15,740 migrant students enrolled in technical or higher education, which generates new challenges for the educational system regarding the inclusion and provision of fair opportunities to incoming migrant students.

Few migrants in Chile meet the United Nations High Commissioner for Refugees (UNHCR) definition of refugee, which is expressed in the 1951 Refugee Convention and the 1984 Cartagena Declaration, and reiterated in the Chilean Refugee Law 20.430. Many of them were forcefully displaced from their home countries because of unstable political regimes, violent conflict, and/or extremely harsh economic conditions. Nearly 57 percent of the country's total migrant population comes from Haiti (MIDEQ, 2020), Colombia (Ocampo-González and González-Becerril, 2018; Rettberg, 2020; Gómez Builes et al., 2008) and, more recently, Venezuela (Linares, 2020; Ribas, 2018; INE, 2021), and can thus be considered forced migrants. We acknowledge the theoretical limitations of treating all migrants from Colombia, Haiti, and Venezuela as forced migrants. Given the lack of data on the reason for migrating and current migrant status, we used a proxy identification strategy, which is justifiable, useful and defensible for the specific scope and purpose of this research. While the case of Haitian and Venezuelan migrants can be more easily related to natural disasters and extreme political and economic uncertainty, considering Colombians as forced migrants could be harder to argue. However, evidence shows that many of them were victims of internal displacement first before going abroad and that they constitute the majority of refugee applications in Chile (Echeverri, 2016; Mejía Ochoa, 2012; Palma, 2015). Future research should discuss and improve this identification strategy if relevant data becomes available.

Following Verme and Schuettler (2021), we use the terms forced migration and forced displacement interchangeably to refer to refugees, returnees, expellees, escapees, and

IDPs who have been forcefully displaced due to conflict, violence, persecution, human rights violations, natural disasters, or high levels of insecurity or uncertainty. Even if many migrants from Haiti, Colombia and Venezuela are not legally considered refugees, thousands were forced to flee and require national and international protection.

Although we lack information on the specific reason for migration, we assume that a significant percentage of migrants were forced to leave their home country. Thus, we consider foreign students from Colombia "forced migrants" to distinguish them from migrants from other countries and natives. The distinction between economic migrant and displaced is less clear: extreme economic harshness and uncertainty might somewhat forcefully push individuals to flee their countries. The case of Venezuelan migrants to Chile, for instance, is not easy to classify. Still, forced migration and economic migration have different causes and consequences. The latter could be voluntary and planned, but forced migration is defined as a result of a shock; forced migrants tend to bring fewer assets and depend less on extended networks. So while forced displacement and economic migration are different phenomena Becker and Ferrara (2019); Verme and Schuettler (2021), in some cases an economic crisis could be the reason for a sudden migration decision. A further distinction can be made regarding the level of language barrier and cultural shock that some migrant students from Brazil or Haiti might experience as non-Spanish speakers.

Chile's educational system spans from day-care nursery to doctoral degrees. Multiple roadblocks may emerge at different levels, some of which specifically affect foreign students, and particularly forced migrants (OECD, 2020). The international literature on forced migrant educational inclusion highlights various barriers including missing documentation, lack of nearby schools, classroom space, and freedom of movement UNHCR (2020). Forced migrants arriving in Chile appear to face the same obstacles.

Although the migrant population consistently exhibits higher day-care enrollment than natives at age 0–3, the opposite is found at the preschool level (3–5 years old) (INE, 2017). At the age of five, 97 percent of native-born children attend preschool, compared to only 75 percent of migrant children, usually due to reasons related to their migration status (Servicio Jesuita a Migrantes, 2019). This migrant–native enrollment gap widens at both at the primary and secondary levels in Chile. According to the UNHCR (2020), primary school is critical to building basic literacy and numeracy skills, and secondary school crucially keeps students occupied during a time at which they are especially vulnerable "if they have nothing to occupy their day and no clear employment

prospects.”

School attendance in Chile is consistently lower for migrants than non-migrants aged 6–13 (92 percent vs. 76 percent) and 14–17 (74 percent vs. 60 percent). Globally, forced migrants’ enrollment in primary school is estimated to be 63 percent vs. 91 percent of natives, and 24 percent vs. 84 percent of natives in secondary school (UNHCR, 2020)). Many migrants remain out of school due to conditions associated with recently arriving in the country, thus generating an educational lag with potentially disastrous consequences for their future (Servicio Jesuita a Migrantes, 2019)

Literature review and hypotheses

The literature at the intersection of migration and education has tended to emphasize the effects of large population flows in the educational performance of native children. Overall, the evidence is mixed and mostly concentrated on case studies in developed countries or historical studies in Europe. Recent studies from Chile (Contreras and Gallardo, 2020) and Colombia (Rozo and Vargas, 2020) have shown a negative effect of migrants on native-born children’s school performance. Studies conducted elsewhere in the developing world have found positive or null effects of migrants in native schooling (Assaad et al., 2019; Jensen, 2015; van der Werf, 2019). However, little is known about how migrant status affects educational attainment, grade advancement, and enrollment in higher education.

The large inflow of migrants has also been associated with selective school sorting in some European countries (Demintseva, 2020), which has been linked to lower test scores and enrollment in higher education for migrant children (Entorf and Lauk, 2008). This could be attributed to overcrowding in certain schools. However, selective sorting could be more difficult in developing countries’ public education sectors due to differences in the number of available schools for migrants. In Latin America, there is some evidence that migrants and refugees tend to arrive in already overcrowded public school systems, which makes learning even more difficult. A series of studies in developed and developing nations explains some of these differences through variables related to the education sector, such as the disruptive effects of moving schools (Hanushek et al., 2004; Contreras and Gallardo, 2020), congestion of educational resources (i.e. teachers, classrooms, etc.) (Rozo and Vargas, 2020), the perceived returns to education (Jensen, 2010), and missing school due to natural disasters and migration (Pane et al., 2008;

Figlio and Özek, 2019; Sacerdote, 2012). Moreover, Kovac et al. (2021) (from the current series of papers) finds that greater exposure to conflict is associated with lower educational measures for forced migrants and refugees. Furthermore, UNESCO (2019) finds that although migrants could be nominally included in the education system, in practice this might not be the case.

Other scholarly research has shown that the gaps between natives and migrants in the latter’s educational performance and grade advancement are the result of a series of cultural and institutional roadblocks faced by migrants and refugees. Some of the variables highlighted in these studies correspond to migrants’ uprootedness from their homelands (Becker et al., 2020), lack of access to job networks (Behtoui and Olsson, 2014), low economic returns to schooling for the adult migrant population (Swinnerton, 2016), and the interaction between family resources and local institutional arrangements (Crul, 2013). We therefore test the following hypothesis related to migrant status and educational attainment:

H1 (Roadblocks to Grade Advancement): Migrant students will have a lower grade advancement at every level of education.

H2 (Roadblocks to Higher Education): Migrant students will have a lower enrollment rate in higher education.

Previous scholarly work has found that financial aid programs have an overall positive impact on educational attainment and access to students who receive them in Chile (Solis, 2017) and Colombia (Londoño-Vélez et al., 2020; Angrist et al., 2002). However, children from disadvantaged social groups, including migrants and refugees, tend to be underrepresented in tertiary education all over the world (Chetty et al., 2017; Hoxby and Avery, 2012). This is the case in Latin America (Londoño-Vélez et al., 2020; Ferrera et al., 2017) despite access to financial aid options (Melguizo et al., 2016). Yet since no studies have examined migrant and refugee children’s access to higher education, we are unsure how migrant status affects access to higher education via financial aid applications.

Promoting migrant children’s school enrollment is not only desirable; it is also necessary to diminish intergenerational inequalities (Chetty et al., 2017). Hence, expanding education access to migrant children will lead to positive results like access to better jobs and access to higher education. Studies in the US have demonstrated that immigrant children who were granted legal status, and hence access to education, are

more likely to be enrolled in college (Cortes, 2013). Prior research has also shown that immigration enforcement is associated with negative school performance (repeating a grade in school) among those without legal status (Amuedo-Dorantes and Lopez, 2015). Argentina, Colombia, and Mexico have made some advances in migrant inclusion, but the effects of these programs have not been carefully evaluated despite showing some positive initial results (OAS, 2011). Thus, we can expect that:

H3 (Financial Aid): Migrant students who apply for financial aid will have higher enrollment in higher education compared to native students.

Although most research presents evidence that migrant status has negative educational effects, some studies on the educational performance of second-generation migrants highlight that investment in education is a priority for migrant families. For instance, Becker et al. (2020) illustrates that descendants of forced migrants in Poland have higher educational attainment than those of non-forced migrants. This helps close the educational gap between second-generation migrants who prioritize education and natives (Card et al., 2000; Alexander and Ward, 2018; Bauer et al., 2013; Borjas, 1992).

Research design

Data

Our analysis is based on official administrative data from the Chilean government. We obtained disaggregated and de-identified individual information, including nationality, for the entire population of enrolled students in all Chilean academic institutions between 2016 and 2020 from the Ministry of Education. We merged this data with the college admission test scores.¹ We therefore have information on enrollment, financial aid access, and scores for the various higher education tests for the entire graduating student population in 2018. Table 1 presents the number of observations and data sources. Table 1 shows the summary of all students in the Chilean educational system, however, we need to analyze "regular" students, and the group of interest. In this case "not regular" students are older students and students with special needs. We will also exclude students in the Kinder and pre-kinder grades, as grade advancement is not always associated with academic performance). These students have lower advancement

¹Until 2019 the test was known as the PSU for its acronym in Spanish (Prueba de Selección Universitaria). It is currently referred to as the Transition Test or Prueba de Transición.

rates compared to their peers, therefore, it would not be correct to include them in the comparison with migrant students.

Table 1: Summary of Main Data Sets

Variable	Obs	Source
Pre-K, K, Primary and High School Education Enrollment 2017	3,558,394	Mineduc
Pre-K, K, Primary and High School Education Enrollment 2018	3,582,448	Mineduc
Higher Education Enrollment 2018	1,262,336	Mineduc
Financial Aid Application 2018	579,709	Mineduc
Financial Aid Assignment 2018	592,926	Mineduc
College Selection Test 2018	306,376	DEMRE

Note: The table presents the main variables used for the analysis, the number of observations for each variable, and the source of the variables. Notice that we divided the variables between 2017 and 2018.

Table 2 shows the summary of regular students identifying Chilean students, migrant students, and forced migrant students identified in the datasets in the regular educational system (excluding pre-K and kindergarten, special education, adult education, and others). The table shows that the system identifies only a small proportion of students as migrants and forced migrants. The students summarized in table 2 will be the baseline of analysis during the rest of the paper.

Table 2: Summary of Main Variables and Students, 2017

Variable	Obs	Source
Chilean Students	3,125,381	Mineduc
Migrants Students	18,180	Mineduc
Forced Migrant Students	12,383	Mineduc
Female	51.54%	Mineduc
Total Students	3,155,944	

Note: The table presents information for students from Grades 1–12 grade, who were 3 years or less than the minimum age for the grade, in the regular education system.

Variables

We have information on the country’s entire student population between 2017 and 2020, which allows us to very precisely estimate all our variables. We consider all individuals who were registered at least once in Grade 1–12 in our dataset to be students. For all empirical analyses, the student is our unit of analysis.

We consider a student as enrolled in the education system if she attended Grade 1–12 between 2017 and 2020. Thus, we created a dichotomous variable to measure enrollment status. Additionally, we define a dropout as a dichotomous variable that indicates if the enrollment status changed from 1 in period t to 0 in period $t+1$. We also generated indicator variables for course advancement and repetition. The former equals 1 when a student is enrolled in two consecutive years in different grades. The latter indicates if the student is still enrolled but at the same grade level as $t-1$.

We define native students as those with Chilean nationality and migrant students as foreign-born children studying in the Chilean education system with the exception of individuals from Colombia, Haiti and Venezuela, who we consider forced migrants.² We then generated dummies for each category.

As explained in the context section, students in their last year of school can decide whether to apply for financial aid and/or register for the college admission test. We thus generate a series of indicator variables that identify whether the student did so. We also used dichotomous variables to identify which students effectively enrolled in a Chilean higher education institution and which received financial benefits such as free tuition, student loans, or scholarships. Access to financial aid is given to individuals who applied and scored at least 475 out of 800 on the college admission test.

Additional control variables include family income level, school type, test scores and other personal, academic and institutional factors, at both the school and higher education levels.

Models

To test our hypothesis, we engage in two complementary empirical exercises. We first run a series of ordinary least squares (OLS) regressions to test whether migrant status is related to grade advancement and access to higher education. We focus on the 2017–2018 school year so our results align with the descriptive statistics presented in the context section. Given the results of these initial regressions and the general patterns from the context section, we then focus only on students who are entering into higher education. The Chilean Government has a series of financial aid programs designed to

²As mentioned above, we assume that for students from these three countries, their migration decision was non-voluntary given the existence of nature or man-made crisis (Venezuela, Colombia and Haiti). As migrant students from Brazil and forced migrants from Haiti face additional integration challenges due to the language barrier, we also test the model for robustness by excluding these groups from their respective categories of migrant.

incentivize students to pursue higher education. Previous evaluations of these programs have found that they have positive impacts on the native population (Dinkelman and Martínez A, 2014). Thus we want to understand if migrants and forced migrants can benefit in the same way. We exploit the adjudication of financial aid given a cutoff at students’ scores on the college admission test to create a sharp RDD. This design allows us to compare the students right around the cutoff to evaluate if financial aid disproportionately affects migrants’ access to tertiary education compared to natives.

OLS regressions For the OLS regressions, we estimate the effects of migrant status on both school advancement between Grades 1–11 (Equation (1)) and access to higher education for those in the 12th grade (Equation (2))³. For the former, we use the entire sample of students in the Chilean education system between 2017–2018; for the latter we focus only on those in the last grade who could potentially enroll in higher education. In both instances, we add fixed effects by school ($\beta_j * School_j$) and they could affect enrollment status. The school level fixed effect will be a good variable to control for the environmental, educational and community factors that students face, as well as the income as Chile has one of the most segregated educational systems in the world (OECD, 2020).⁴ Standard errors are clustered at the school level so we can control for similar errors patterns in our data.

$$Grade\ Advancement\ 2018_{i,j} = \beta_0 + \beta_1 * Migrant_i + \beta_2 * Forced_i + \beta_j * School_j + \epsilon_i \quad (1)$$

$$Higher\ Education\ Enrollment\ 2018_{i,j} = \beta_0 + \beta_1 * Migrant_i + \beta_2 * Forced_i + \beta_j * School_j + \epsilon_i \quad (2)$$

We also run Equation 2 including controls for an individual’s college admission test and whether they applied for financial aid to provide a stronger test of our second hypothesis. We retained the same controls as before and kept the standard errors

³While there is a discussion between the use of Linear Probability Models and Probit models, we have chosen to use the first as we want to highlight the important magnitude of the effect, something that could be less evident with Probit or Logit models. Future work should analyze in detail these effects using binary models

⁴We originally we proposed to include the parental income level at the school level as a control, however the school fixed effect will control for income

clustered at the school level.

Regression discontinuity

The results from the OLS regressions and the descriptive statistics found in the context section suggest a differential effect of migrants in access to tertiary education. Hence, we wanted to identify whether migrant status has a causal – rather than correlational – effect on access to tertiary education. We therefore use a sharp RDD to estimate the local average treatment effect (LATE) of financial aid on university enrollment, using the college admission test as a running variable as in (Hoekstra, 2009). We also analyze a conditional average treatment effect (CATE) for migrant status and the type of school (vocational) versus general education. We follow the procedures in Calónico et al. (2014) and we use the *rdrobust* package in Stata (Calónico et al., 2017). Migrants and natives can differ along a wide range of socioeconomic and cultural characteristics, which makes comparisons more difficult. First, the cultural and language differences between forced migrants and natives in Chile are not large, given the cultural proximity between Latin American countries. Second, unlike most cases in Europe, the majority of migrants to Chile also speak Spanish, which facilitates an easier integration into daily activities.⁵ Our RDD allows us to control for some of these confounding factors.

We estimate Equation (3) to calculate the LATE of financial aid access on college education following. As explained above, in 2018, financial aid was given to students who scored at least 475 points on their college admission test that year. This cutoff (c) at 475 points allows to distinguish between two possible treatment conditions: receiving financial aid ($W = 0$) and not receiving it ($W = 1$). We define eligible students as all those who scored 475 or above.

$$Y_i = \beta_0 + \beta_1 Eligibility_i + \beta_2 Distance_i + \beta_3 Distance_i \times Eligibility_i + \epsilon_i \quad (3)$$

$Eligibility_i$ indicates eligibility for the analysis. This variable is coded 1 if the $CollegeSelectionTests \geq 475$. Following Hoekstra (2009), we center the RDD at zero, captured by the variable $Distance_i$, which measures the difference between the student’s score and the cutoff point of 475 (c). The incidence of loans on outcome Y_i is estimated using the parameter β_1 . Optimal bandwidths were defined using the method proposed by Calónico et al. (2014). We also used linear and quadratic polynomials as robustness

⁵This might not be the case for Haitians and Brazilians.

checks on our results, as indicated in Lee and Lemieux (2010).

$$Eligibility_i = \begin{cases} 0 & \text{if } CollegeSelectionTest < 475 \\ 1 & \text{if } CollegeSelectionTest \geq 475 \end{cases}$$

Results

Migrant educational trajectories

This research confirms some of those previous findings and adds other relevant information. The results presented in Table 5 illustrate that migrant students have much higher school drop-out rates than native students (6 percent of natives versus 38 percent of migrants and 46 percent of forced migrants). This low continuity of students in the system could be due to students traveling abroad, dropping out to return one or more years later, or permanently dropping out of the educational system.

Table 3: Academic Progress of Students (2017–2018)

Variable	Type of Student		
	Natives	Migrants	Forced Migrants
Repetition rate	4%	3%	2%
Dropout	6%	38%	46%
Advancement	91%	59%	51%
Total	100 %	100 %	100 %

Note: The table classifies the students in our dataset as natives, migrants, or forced migrants according to their educational results in 2017 and 2018. Repetition rate is the percentage of children who repeat a grade from the total of that children’s migrant status group. Similarly, dropout measures the percentage of children who leave school and advancement measures the percentage that progress to the next grade.

By contrast, only small differences can be found for repetition rates, which even favor non-native students. Academic progress, however, illustrates important differences between natives, migrants and forced migrants (31 and 40 percentage points, respectively). We observe no particular break in the transition from middle school to high school, probably because advancement is mostly automatic and students do not have to make a decision. However, retention rates from one year to the next are consistently lower for migrants students and even lower for forced migrants.

Table 4: School Retention (2017–2018)

	Grade Level										
	1	2	3	4	5	6	7	8	9	10	11
Natives	94%	89%	90%	87%	95%	95%	93%	93%	89%	79%	94%
Migrants	53%	57%	60%	58%	63%	65%	61%	59%	64%	54%	60%
Forced Migrants	46%	49%	54%	54%	57%	60%	55%	50%	55%	45%	45%

Note: The table shows school retention measured as the proportion of students in 2017 that continued in 2018 for native, migrant, and forced migrant children for each grade.

The number of forced migrants enrolled in higher education around the world increased dramatically from 2017 to 2018 (from 1 percent to 3 percent), in contrast to 37 percent of natives; online alternatives can boost this number even more (UNHCR, 2019). Higher education can really change the lives of forced migrants, giving them a better expected income and increased life standards perspectives, but certificates, languages and cost are some of the biggest barriers for students. In Chile, higher education attendance for those aged 18 to 24 years is significantly lower in migrants compared to natives (11 percent vs. 39 percent); the most frequently reason given for not attending is looking for a job (Servicio Jesuita a Migrantes, 2019).

Transition from secondary school to higher education

The transition between high school and higher education is a crucial step for every child. Decisions made at this stage can significantly impact children’s economic prospects and quality of life, as the returns to higher education are particularly high in Chile. In 2017, those aged between 25 and 64 years old with a tertiary degree earned 141 percent more than their counterparts with only a secondary education; the Organisation for Economic Development and Co-operation average is around 54 percent (OECD, 2020)

In Grade 12, students in Chile must make two important decisions that directly affect their likelihood of enrolling in higher education. The first is whether to register for the college selection test, which determines placement as well as access to state benefits for higher education. The second decision is whether to apply for state financial aid in the form of free tuition, scholarships, and/or student loans; this aid is managed through a centralized system. Although a few tertiary institutions (mostly TVET) do not require the scores from the standardized college admission test, all students must complete the Ministry of Education’s socioeconomic form to apply for financial aid.

Table 5 presents our data from 2017–2018 regarding the differences between native,

migrant, and forced migrant students’ in terms of the aforementioned variables. The table reveals large gaps in college admission test registration and applications for government financial aid between native-born and migrant students. While 83 percent of native students registered for the test, only 49 percent of migrants and 31 percent of forced migrants did so despite having equal access to aid. These gaps generate differences in both access to benefits and enrollment in higher education: the number of forced migrants is almost half the percentage of natives who access these services. It is important to highlight that the largest difference in Table 5 relates to registering for the college selection test.

Table 5: Graduating High School Students: Access to Higher Education (2017)

Variable	Type of Student		
	Chilean Students	Migrants	Forced Migrants
Financial Aid Application	65%	40%	27%
Benefits	32%	16%	8%
College Selection Test	83%	49%	31%
Enrollment Higher Education	49%	33%	19%

Note: The table shows the percentage of high school graduates that are natives, migrants and forced migrants, and refugees that applied for financial aid, got financial aid, took the college selection test, and enrolled in higher education. The base category is the total number of students for each type of migrant status.

These patterns in our data are consistent with both national and international evidence indicating that migrant status is associated with fewer applications to admission processes or benefits programs (UNHCR, 2019). Survey evidence from Chile demonstrates that migrant students are not only less likely to enroll in tertiary education; they also tend to receive less government financial aid to fund their studies. In fact, 71 percent of surveyed migrants pay for their tuition themselves; 21 percent receive free tuition and 9 percent receive a loan or scholarship (Servicio Jesuita a Migrantes, 2019).

The data presented thus far seems to indicate a bottleneck in access to higher education for migrant and forced migrant students in Chile. However, when looking only at enrollment in tertiary education conditional on applying for financial aid (Table 6), we see that migrant students enroll 3 percent more than native students, and forced migrants’ enrollment is only 4 percent lower than that of natives. Likewise, enrollment conditional on taking the college selection test is very similar across groups. These results suggest a strong self-selection component of both migrants and forced migrants into higher education. Moreover, Table 6 illustrates that access to financial aid is a

strong incentive for migrant enrollment in tertiary education. In other words, this evidence suggests that the lack of financial aid applications can be a major roadblock to accessing higher education.

Table 6: Enrollment in Higher Education after Passing Thresholds

Variable	Type of Student		
	Natives	Migrants	Forced Migrants
After Applying for Financial Aid	67%	70%	63%
After Taking College Selection Test	57%	58%	56%

Note: The table displays the percentage of students that enrolled in higher education after applying for financial aid and after taking the college selection test. The percentages are based on the total number of students in each migrant status category category.

Contextual factors could explain why migrants are not applying for financial aid at the same rate as native-born students. Notably, financial aid has been found to correlate with the student’s school performance (Blanco and Meneses, 2013) and with a lack of information regarding the application process. Information flows about applications frequently rely on school teachers, who could have diverse expectations of and biases towards their students.

OLS regressions

The context subsection shows that in the Chilean school system, both migrant and forced migrant students have low advancement rates compared to their native counterparts. However, other characteristics could affect the differential enrollment rate. For instance, the school’s average income level and performance might lead to higher enrollment rates, as richer individuals can more easily access private education and the school level could influence the college admission test results. Thus, we run a series of OLS models to calculate the conditional correlation of migrants’ status and both school advancement and access to higher education including school fixed effects.

Table 7 illustrates the results of regressions on school fixed effects. Column 1 and 2 illustrates that migrant and forced migrant students have advancement rates lower than comparable students from the same high school. Column 2 controls for school fixed effects. It’s possible to see that after controlling for school fixed effects the magnitude of the coefficients for migrants and forced migrant students are moderated, but still large, negative and statistically significant. This result indicates that migrant and forced migrant students have a very low grade advancement performance compared to their

native-born peers.

Column 3 and 4 shows the estimates for 12th graders and their access to higher education without and with school fixed effects. The results show that access to higher education is lower for migrant and forced migrant students compared to natives. After including controls for applications to financial aid and college admission tests (Table 7 column 5 and 6), the direction of the effect remains negative but is no longer statistically significant. These results present suggestive evidence that financial aid applications and college selection test taking partially determine access to higher education. Moreover, these results are indicative of self-selection across students who apply for these benefits. This could be one of the major roadblocks that students are facing – low levels of financial aid application – that is affecting the educational trajectories of migrant and forced migrant students.

Table 7: OLS: Grade Advancement and Higher Education Enrollment

VARIABLES	(1) Advancement	(2) Advancement	(3) Higher Education	(4) Higher Education	(5) Higher Education	(6) Higher Education
Migrant	-0.308*** (0.00227)	-0.285*** (0.00202)	-0.165*** (0.0168)	-0.154*** (0.0161)	0.0139 (0.0144)	-0.00275 (0.0139)
Forced Migrant	-0.383*** (0.00280)	-0.363*** (0.00247)	-0.303*** (0.0241)	-0.191*** (0.0229)	-0.0284 (0.0207)	-0.0157 (0.0199)
College Admission Test					0.195*** (0.00267)	0.0972*** (0.00290)
Fiscal Aid Application					0.450*** (0.00211)	0.515*** (0.00214)
Constant	0.906*** (0.000175)	0.906*** (0.000151)	0.493*** (0.00103)	0.493*** (0.000964)	0.0371*** (0.00216)	0.0760*** (0.00239)
Observations	2,844,206	2,844,206	236,841	236,841	236,841	236,841
R-squared	0.013	0.014	0.001	0.001	0.266	0.252
School FE	No	Yes	No	Yes	No	Yes
Number of Schools		11,065		3,343		3,343

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Financial aid applications

This subsection explores financial aid applications as a major roadblock to access to higher education. The descriptive statistics and OLS results illustrate that students who apply for financial aid are more likely to enroll in higher education. Information about access to this aid has been found to correlate with higher enrollment, especially when this information is provided at a younger age (Hastings et al., 2015; Dinkelman and Martínez A, 2014). Students who apply for financial aid could be self-selecting into treatment, which would bias our regression analysis. Alternatively, there could be

other factors that affect the application rate of migrant students which reduce their probability of applying for financial aid. Previous studies in Chile have shown that financial aid application rates are heavily mediated by the student’s school (Blanco and Meneses, 2013), as information and training on how to apply is provided at the school level.

Table 8 illustrates the coefficients of applying for financial aid and migrant status. We also control for school fixed effects and cluster errors at the school level. The results indicate that migrant students are less likely to apply for financial aid, which reduces their overall probability of transitioning into higher education in Chile.

Table 8: OLS: Financial Aid Applications

VARIABLES	OLS
Migrant	-0.232*** (0.0147)
Forced Migrant	-0.269*** (0.0210)
Constant	0.653*** (0.000882)
Observations	236,841
Number of Schools	3,343
School FE	Yes
R-squared	0.002

Higher education regressions for students in 12th grade, N=236,841

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Regression discontinuity design

While college selection test registration and financial aid applications are highly predictive of higher education enrollment, this section explores the causal impact of financial aid on higher educational enrollment. Previous papers have analyzed the impact of financial aid on college and higher educational enrollment in Chile (Solis, 2017; Meneses

et al., 2020; Hastings et al., 2015; Dinkelman and Martínez A, 2014). However, they tend to focus on results for native students. This paper instead uses a sharp RDD to analyze the impact of college financial aid on overall higher educational enrollment for migrant students. Using three cohorts of students, graduating from high school in 2017, 2018 and 2019, the results confirm previous findings from the literature, and demonstrate that access to financial aid makes students more likely to enroll in higher education.

The results in Table 9 provide evidence that financial aid has a positive and significant effect on the enrollment of all students, which aligns with the results from previous studies (Solis, 2017; Meneses et al., 2020; Hastings et al., 2015; Dinkelman and Martínez A, 2014). The results are robust to different bandwidths and functional form specifications. For migrants, the LATE is not statistically significant at the smallest margins and it is only statistically significant – at the 10 percent level – when we combine both forced and voluntary migrants. Despite the lack of statistical significance, the direction of the CATE is positive, which constitutes suggestive evidence of the larger effects of financial aid on university enrollment. We believe the lack of significance is the result of a lack of statistical power. RD designs need a large number of observations around the margin to work and analyze the continuity assumption (Cunningham, 2021); despite having three graduating cohorts, the number of migrants around the cutoff might not be enough.

Figure 1 presents a visual representation of the results, with the financial aid cut-off centered at zero and the enrollment in higher education. The lines show the average probability of enrollment in higher education based on scores on the college selection test. Although financial aid seems to have a greater impact on migrant students than native-born students, the confidence intervals overlap.

We also analyze the CATE between the types of schools students can attend in Chile. We further divide our sample between students who attended a vocational or general education school. We find that native students attending a general education school who applied for financial aid were around 50 percentage points more likely to enroll than those who did not apply. The results are robust to different bandwidths and different functional forms. We also find similar results for migrant students who attended general education schools. Although at the very margin the coefficient is not statistically significant (probably due to a lack of statistical power), the CATE among specifications is 0.29, which indicates that migrant students who applied and qualify

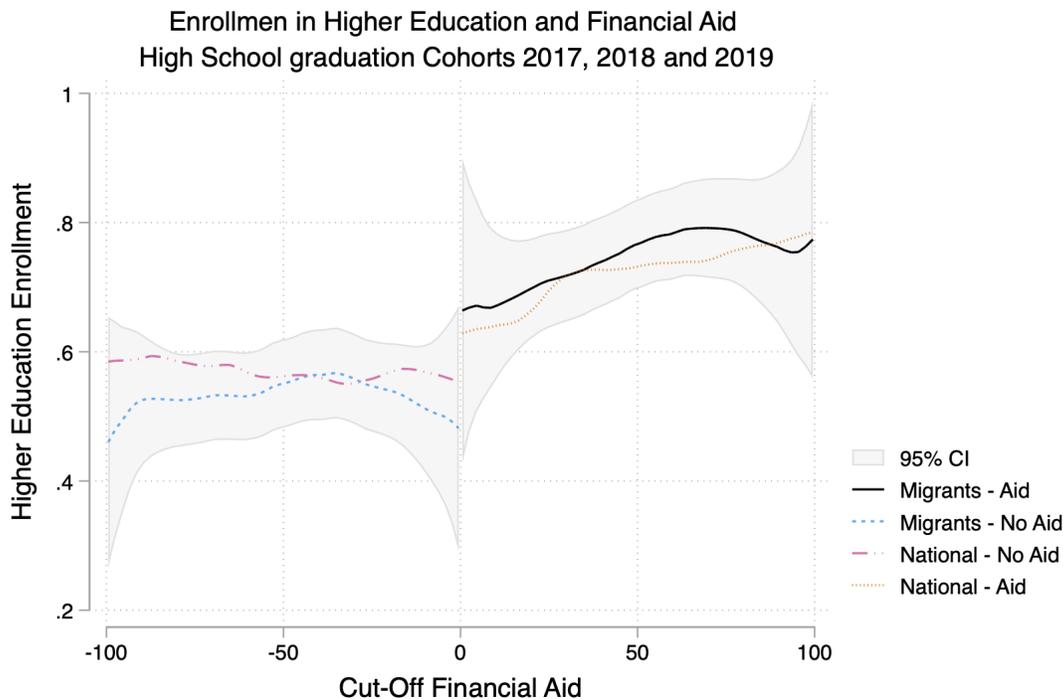
Table 9: RDD Results on Higher Education Enrollment

heightVariables	All Students	All Migrants	Migrants	Forced Migrants
Panel A: Polynomial Level 1				
Bandwidth 120	.07898 ***	.12822 *	.11644	.12303
Bandwidth 60	.04944 ***	.15179	.11712	.17351
Bandwidth 30	.05932 ***	.16268	.2468	.033
Bandwidth 10	.05039 ***	.0916	.39415	-.4022
Panel B: Polynomial Level 2				
Bandwidth 120	.04416 ***	.13438	.07895	.17932
Bandwidth 60	.04583 ***	.14782	.20496	.06251
Bandwidth 30	.07596 ***	.09154	.35603	-.27507
Bandwidth 10	.03529	.24353	.45686	-.48359
Observations	166,856	763	341	422

*** p<0.01, ** p<0.05, * p<0.1

Note: This table presents the coefficients and significance of the results of linear regressions of tertiary education enrollment for graduating students in the 2017, 2018, and 2019 cohorts at different levels of bandwidth and different polynomial specifications for the discontinuity regression's functional form.

Figure 1: Regression Discontinuity Design



Note: Confidence Intervals for migrant students

for financial aid are 30 percentage points more likely to enroll in higher education than their non-selected counterparts. The magnitude of the migrant students in general education is 4 times larger than natives at similar schools.

However, the results for vocational schools are disheartening. Native students enrolled in vocational schools have a mean CATE across specifications of around 3 percent, which indicates a lower probability of enrollment in higher education compared to other native students in general education schools, who display an increase in enrollment of 6–9 percent. For migrant students in vocational schools, the effects are statistically insignificant for all specifications of the model, and in some cases they are negative. This suggests that having access to higher education financial aid does not have a positive effect for this population group. It is possible that migrant students at vocational schools might not receive enough information about the existence of financial aid, or are not encouraged to pursue higher education or college, and thus are less likely to enroll in higher education. Future studies should determine whether this is the case.

In sum, while migrant students from general education schools benefited from financial aid, increasing their enrollment in higher education by approximately 30 percent, the results show that financial aid did not increase higher educational enrollment for migrant students in vocational schools.

Table 10: RDD Results on Higher Education Enrollment by School Type

Variables	Native GE	Native Vocational	Migrants GE	Migrants Vocational
Panel A: Polynomial Level 1				
Bandwidth 120	.09445***	.05638***	.27849***	-.00599
Bandwidth 60	.06023 ***	.03252***	.36675***	-.11388
Bandwidth 30	.07337 ***	.03533**	.36336*	-.07591
Bandwidth 10	.06687 ***	.02783	.20404	.05986
Panel B: Polynomial Level 2				
Bandwidth 120	.05456 ***	.0244**	.33414**	-.13019
Bandwidth 60	.06198 ***	.0171	.36527	-.12038
Bandwidth 30	.09356***	.05063***	.18222	.05692
Bandwidth 10	.06018*	-.00401	.2603	.21744
Observations	166,856	763	341	422

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: This table presents the coefficients and significance of the results of linear regressions of tertiary education enrollment for graduating students in the 2017, 2018, and 2019 cohorts at different levels of bandwidth and different polynomial specifications for the discontinuity regression's functional form. GE = general education school.

Discussion: policy and program implications

Our study reveals four main findings. First, the paper's results generally confirm those reported in previous studies: Migrant students in Chile experience a progressively widening gap in access to educational opportunities from first grade to higher education compared to their native peers. Second, this research finds that forced migrants seem to be even more vulnerable and struggle even more in their educational integration (measured as advancement rate and higher education enrollment) compared to other migrants and their native peers. Future research should identify the causes of migrant students' extremely low advancement rates and high drop-out rates.

Third, the results show that financial aid in Chile is an effective tool for increasing access to higher education for both migrant and native-born children. However, this paper presents evidence of significant gaps between native and migrant (and especially forced migrant) students' applications for financial aid. Consequently, we conclude that a lack of access to financial aid information is the most important roadblock that migrant and forced migrant students face in Chile with respect to access to higher education institutions. As migrant students seem to be leaving the educational system at higher rates than natives, they systematically do not apply for financial aid, even after

controlling for school fixed effects. Further effort by researchers and policymakers is required to assess the importance and availability of legal migration documents among forced migrant students, as this could be driving the lower numbers of financial aid applications, higher school dropouts, and lower enrollment in higher education.

Fourth, this paper also finds that financial aid is an effective tool for increasing migrant students' higher education enrollment. The impact of financial aid for migrants from general education schools to enroll in higher education is almost four times higher than for the national student population. However, these differences decrease when assessing migrant students from vocational schools. The probability of higher education enrollment for those who are eligible for financial aid is lower than that of natives and, in some cases, negative for migrant students from vocational high schools. Further studies should explore this phenomenon, ideally including qualitative research on migrants' higher education decision-making processes. It is also necessary to review the preconceived ideas of migrant students and teachers at vocational high schools to analyze their beliefs about these schools, higher education tracks and higher education financial aid, as these could shape expectations and, thus, behavioral changes regarding applications and enrollment.

These findings not only highlight the inequalities in access to education between forced migrants and natives; they also point to areas in which local governments and international organizations can generate concrete actions to improve migrants' access to education, such as providing financial aid and improving standardized admission test-taking procedures to promote enrollment and avoid biases against vulnerable groups.

There is no lack of arguments regarding the importance of educational inclusion, starting from a human rights perspective. But promoting the education of migrant populations can also lead to beneficial developmental effects for the host society. For instance, immigrants who have studied in the US have been an important source of entrepreneurial activities and the creation of venture capital that has been found to generate potential economic benefits (Amornsiripanitch et al., 2021). Moreover, increases in migrants' education levels could have a human capital development impact, which can also generate improved educational outcomes (Wantchekon et al., 2015).

Some studies have shown that perceptions related to the returns on education in developing countries are key determinants of decisions about whether to enroll in higher education (Jensen, 2010; Nguyen, 2008). Hence, providing information to migrant youth about access to financial resources and the returns on higher education can diminish the differences in enrollment rates that we see in our data (Dinkelman and Martínez A, 2014;

Hastings et al., 2015; Bettinger et al., 2012). Future work should test how information about the returns to education flows across migrant networks, and how this information could generate incentives for migrant youth. For instance, some experimental work in Kenya (Baseler, 2020) has shown that migrants usually do not tell their family members how much they earn to avoid paying higher remittances. If this is the case, they are spreading misinformation that could affect the returns to schooling after migration.

Financial aid is a critical component of promoting access to higher education. However, enrollment is a multi-factorial phenomenon, in which diverse variables intervene. Another way of removing these information constraints is through the provision of policies like college admissions recruiting and college mentoring programs, which have been shown to generate incentives for low-income students to apply to more selective universities (Hoxby and Avery, 2012). Special admission pathways, the use of high school rankings, and propaedeutic programs may have strong effects in the general population. Therefore they could plausibly be tuned to better cater to the needs of vulnerable groups, including migrants and forced migrants. Promoting improved modes of transportation to children has also been shown to incentivize secondary school enrollment (Muralidharan and Prakash, 2017) and increase inter-generational income mobility (Meneses, 2021).

It is important to mention, that in most instances, forced migrants have lower rates of regularization given their high vulnerability. In Colombia, Bahar et al. (2021) find that unregularized Venezuelan migrants have low levels and access to education. Thus promoting regularization of the most vulnerable migrants could potentially lead to investments in schooling and better access to financial aid. Previous research has found that regularized migrants in the US find investment in education more attractive (Kos-soudji and Cobb-Clark, 2002). Moreover, historical research has shown how migrants try to invest more in their kids human capital (Abramitzky et al., 2019), hence making these investments easier to access could help migrant integration and the reduction of the schooling gaps between migrant and native children.

This study acknowledges several limitations that future research could overcome, including data limitations on available cohorts such as migrants' date of arrival to the country, would help better distinguish which migrant students are more likely to come from countries with violence, conflict, natural disasters or political instability. If data on the specific reasons for migration becomes available, a much more precise identification strategy could be implemented. Future studies could also include more cohorts to assess whether the results are robust in different conditions. Another relevant

discussion revolves around students who face a language barrier. Incorporating statistics for 2020 and 2021 could also shed light on the interaction of this educational integration process with the effect of the COVID-19 pandemic, which had catastrophic effects on educational systems around the world (UNICEF, 2022)

Migrant students face obstacles at every step of the way, and well-formulated, evidence-based policies could help close the widening gap in access to educational opportunities vis-à-vis their native peers. This study is the first to analyze the differential effect of student aid on migrants and natives. Future studies should continue providing more and better evidence to improve financial aid policies and increase access to higher education.

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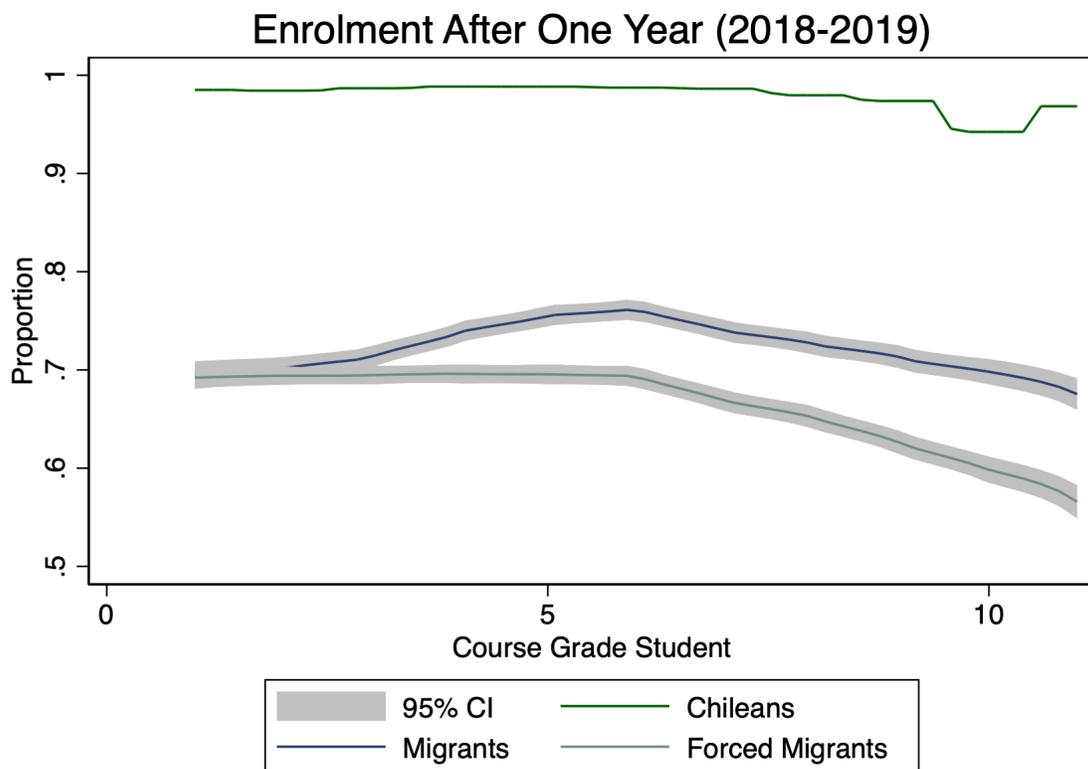
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1 Appendix I

The COVID-19 pandemic generated a strong disruption in the educational system that affected migrants and native students.

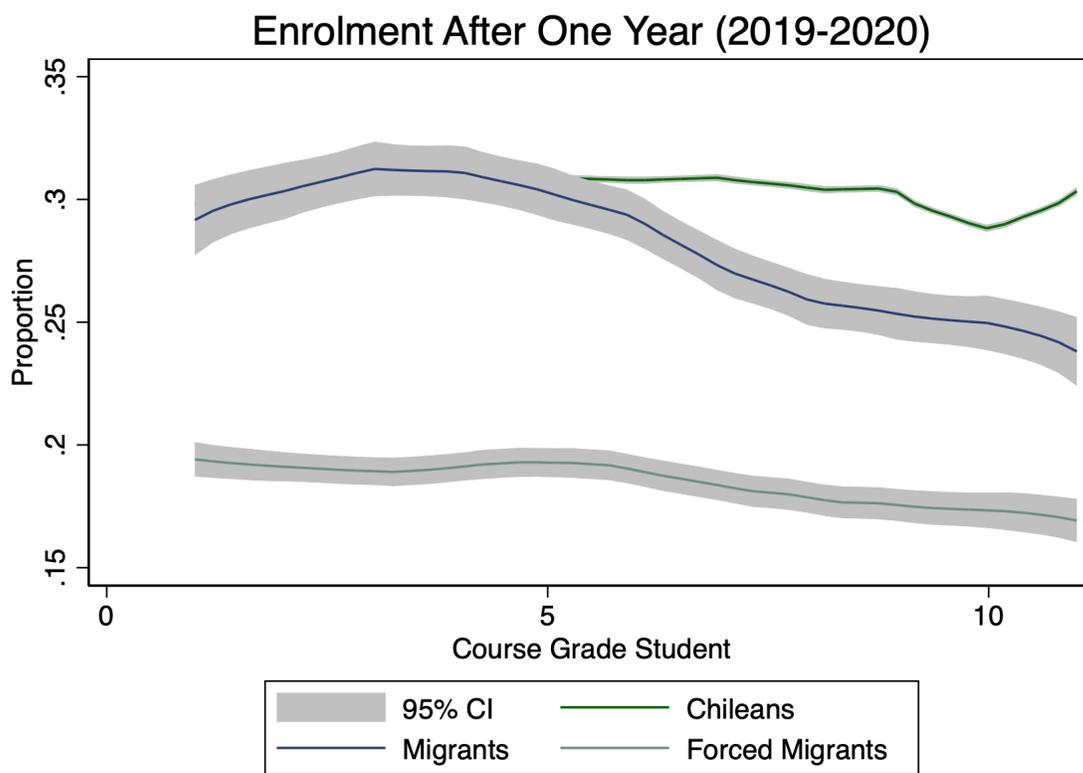
The figure below shows the enrollment of students in the educational system between 2019 and 2020. However, the next figure shows that the enrollment of students fell dramatically during the pandemic from 90 percent to 30 percent for national students, from 70 percent to 25 percent for migrants students, and from 60 percent to less than 20 percent for forced migrant students.

Figure 2: Advancement 2019



Note:

Figure 3: Advancement 2020



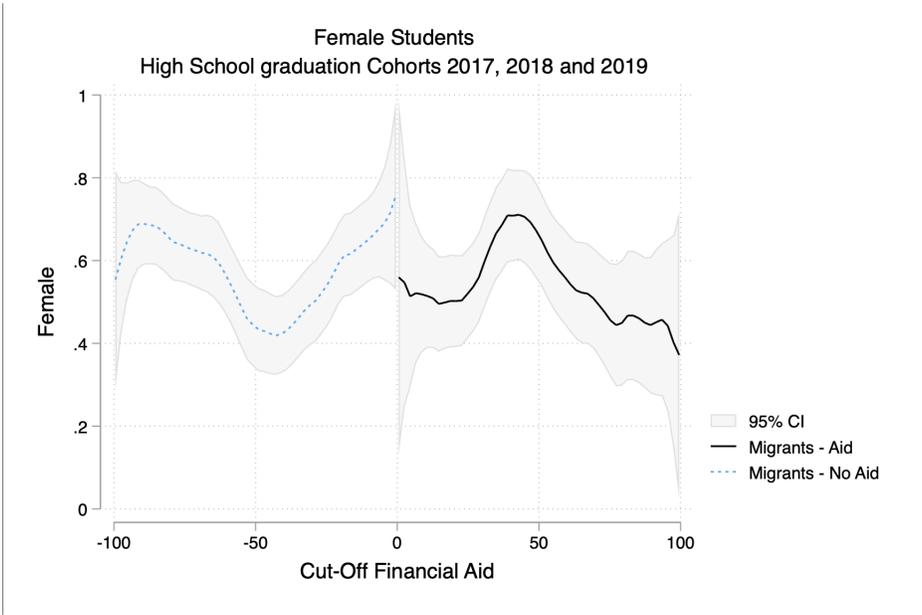
Note:

2 Appendix II

This section explores the balance of the sample for the RD regression results to analyze whether students around the cut-off of the discontinuity have similar characteristics. To do this, we explore four variables: gender, income level of the school, high school track and type of school.

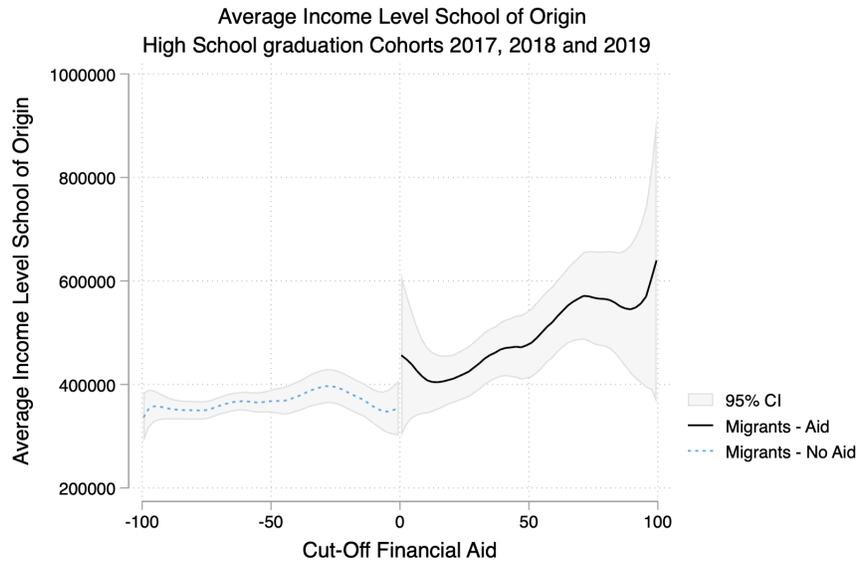
The results are not conclusive, as we observe small patterns around the discontinuities. However, these differences are not statistically significant except for the case of general education students.

Figure 4: Balance RDD Design: Proportion Female Students



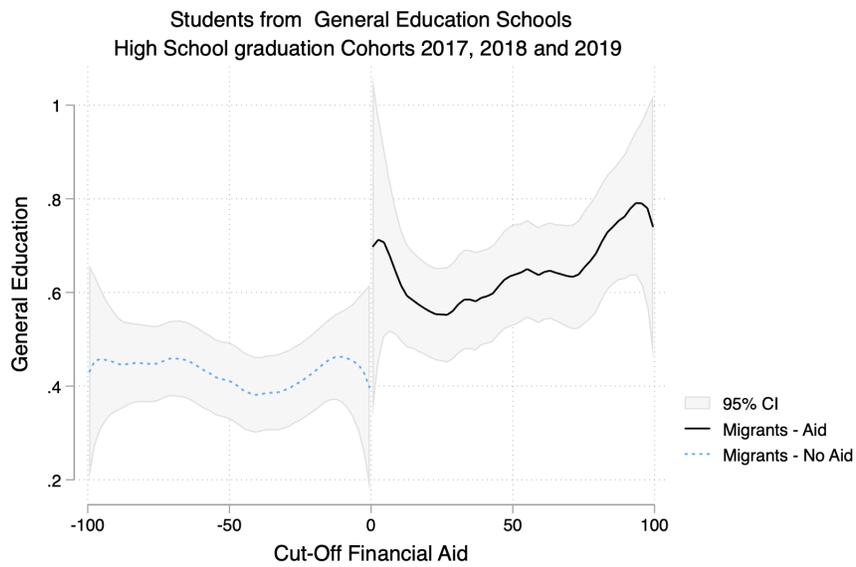
Note:

Figure 5: Balance RDD Design: Average School Income



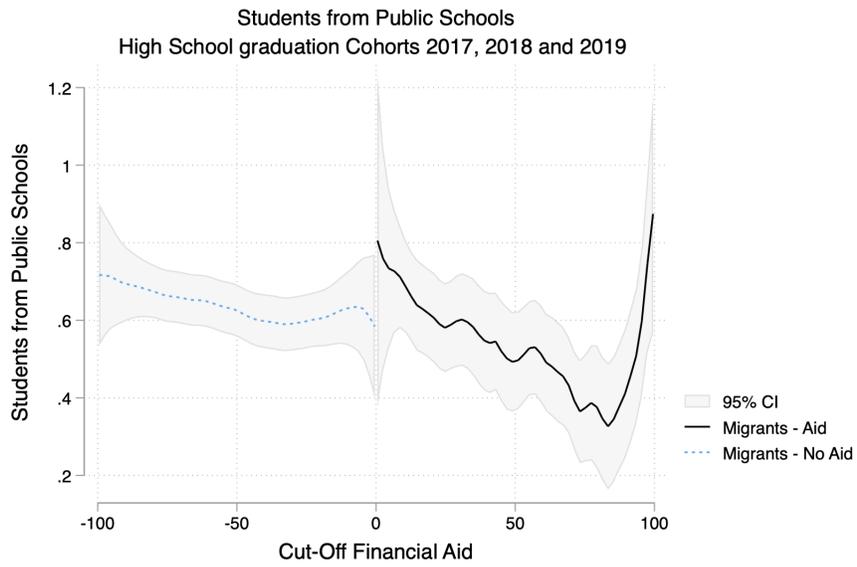
Note:

Figure 6: Balance RDD Design: General Education



Note:

Figure 7: Balance RDD Design: Public Schools



Note: