

The Impact of Refugees on Native Students' Academic Achievement*

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Current version: March 2021

Abstract

Worldwide, roughly half of all refugees are children, and there is uncertainty about how their resettlement will affect native children's schooling outcomes. This paper studies how the largest inflow of refugees in U.S. history – the inflow of Indochinese refugees at the end of the Vietnam War – affected native children. To identify the causal effect, I use novel data from the U.S. National Archives that contain refugees' first county of destination, which was determined by resettlement agencies and was uncorrelated with previous schooling conditions. I find precise zero or small positive effects on native children's test scores and educational attainment.

JEL Classification: I21, J15

Keywords: Refugee students; Refugee resettlement; Educational Attainment.

1 Introduction

The total number of refugees has doubled in the last five years and since, among other reasons, refugees come from poor countries, the increase in the number of asylum seekers has been met with broad criticism. In the U.S., recent immigration policies have reduced the number of refugees admitted by tightening restrictions on refugee resettlement, reducing the number of staff that process cases abroad, and intensifying the screening process (Migration Policy Institute, 2017). The lack of political support in the U.S. for admitting refugees is, however, not a new development. In 1979, five years after the Vietnam war, a New York Times survey reported that more than 60 percent of adults in the U.S. disapproved of the government plan to double

*I am grateful to Giovanni Peri, Marianne Bitler, Marianne Page, and Scott Carrell for their guidance and invaluable feedback on this project. I thank Monica Singhal, Paco Martorell, and seminar participants at the UC Davis Applied Microeconomics Brown Bag series, UC Davis Migration Research Cluster Workshop, and Stanford Institute for Theoretical Economics Summer Workshop for helpful comments. I am also grateful to conference participants at the Western Economic Association International (WEAI) Annual Conference, the Association for Public Policy Analysis and Management (APPAM) Annual Conference, the Southern Economic Association (SEA) Annual Conference, and the Population Association of America (PAA) Annual Conference.

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the number of Indochinese refugees, and in 1980, more than 70 percent opposed allowing Cuban refugees to settle in the U.S.(Pew Research Center, 2017). U.S. natives also prefer to live in neighborhoods with fewer minorities, fewer immigrants, and more high-income/highly educated residents (Baum-Snow and Lutz, 2011; Cascio and Lewis, 2012). A common justification for restricting refugee inflows is that refugee children may have negative spillover effects on the academic success of their school classmates (Card, 2009). However, the growing concerns in the public opinion are generally based on anecdotal evidence of class disruption (Ballatore *et al.*, 2018; Bossavie, 2020), as the empirical literature on the effect of an inflow of refugees on native students has not reached a consensus.

I contribute to the literature by answering this question in a causal framework in the U.S. context. To determine the effect of refugees on native students' academic success, I harness a natural experiment generated by the largest historical inflow of refugees to the United States: the resettlement of over a quarter million Indochinese refugees in the aftermath of the Vietnam War. I argue that the suddenness and the magnitude of the inflow together with the lack of Indochinese prior to 1975 and the number of voluntary agencies involved in their resettlement resulted in quasi-random variation as the assigned location of these refugees was uncorrelated with local characteristics. Because of this, the resettlement of Indochinese refugees can be used to understand the causal effects of refugee children on their native classmates.

Two unique factors suggest that refugees' relocation assignments were uncorrelated with county characteristics. First, with the help of nine voluntary agencies, the federal government distributed refugees widely across the country with the specific intent of avoiding a concentration of refugees in a single city. To accomplish this, Congress instructed the agencies to disperse refugees across the whole country and to avoid only economically depressed areas (Refugee Act 1975; Haines 1985). Voluntary agencies achieved this goal by dispersing refugees both across states and widely within states (Congress Report, 1976); in fact, refugees were resettled in over 75 percent of U.S. counties in 1975. Second, there were no clear guidelines between the voluntary resettlement agencies as to how refugees would be distributed. Although the Committee on

Migration and Refugee Affairs from the American Council of Voluntary Agencies for Foreign Service (ACVAFS) was created to allocate cases between the resettlement agencies, in practice, the number of refugees resettled by each voluntary agency depended mainly on the decisions of junior personnel who were working at the resettlement camps (Zucker, 1982). As voluntary agencies differed in their strategies to assign refugees, the differences in the allocation of refugees to voluntary agencies ultimately led to differences in the concentration of refugees across the country. Importantly, because voluntary agencies also provided refugees with assistance and financial benefits, refugees had strong incentives to settle (at least initially) in their assigned areas (Refugee Act 1975).¹

My research design also helps overcome two additional challenges. First, most sources only record refugees' current locations, making it difficult to disentangle the effect of refugees on their communities from the reasons why they choose to settle in a specific location. Second, hardly any available data sources directly identify refugees. To address these issues, I use novel data from the U.S. National Archives which contains individual level records of refugees including their first destination county, which was determined by voluntary agencies. This is important as historical records show that over 40 percent of Indochinese refugees ultimately moved to a different county between their time of arrival and 1981, and almost 30 percent moved to a different state within the same period.² Ignoring self selection would lead to a negative bias if refugees self-select into disadvantaged areas so, to account for selection, researchers have generally exploited variation over time in the same location or used prior settlements as an instrumental variable.

My work complements that of Morales (2019), who uses administrative data from a large urban school district in Georgia. While I focus on the effect on an inflow of refugees from the migration perspective, Morales studies this question from the peer effect literature. In particular,

¹The success of the dispersal policy meant that the share of refugees was generally below 1.5% of the population. Nevertheless, it is worth noting that this is the largest inflow of refugees in U.S. history and, even in more recent - and more concentrated - influxes of refugees, their share is generally below 1%. For instance, Figlio and Özek (2019) study the influx of Haitian refugees in Florida and define exposed schools as those where the share of refugees is above 1 percent.

²These numbers are based on the migration rates of a random sub sample of approximately 83,000 refugees for whom there is additional information on the location in 1981 in the data from the U.S. National Archives.

although her sample is not nationally representative, she is able to measure the share of refugees at the school-grade level.³ Morales finds that an increase in the share of refugees in the school cohort has a small positive effect on natives students' math test scores, but no effect on language test scores.

My paper is related to a broader literature that studies the effect of immigrants on native children's academic success. The results of these studies are mixed. Earlier research, such as Betts (1998) and Betts and Lofstrom (2000), finds that minority students are less likely to complete high school in states or metropolitan areas with a higher fraction of immigrants. However, more recent evidence that controls by immigrants' residential sorting suggests a positive relationship: although immigrants may decrease the benefit of attending school by competing for resources, ultimately, the inflow of unskilled immigrants increases the return to education by widening the gap between the high school graduates and high school dropouts (McHenry, 2015; Hunt, 2016). That said, after controlling by natives responses to the arrival of immigrants or by native flight, Figlio *et al.* (2021) show that there is a positive correlation between the presence of immigrants and US-born students' academic achievement. Moreover, the largest positive effects are concentrated among disadvantaged native students, suggesting that the presence of immigrants does not reduce the quality of education.

Nevertheless, as explained in detail in section 2.3, refugees differ from economic migrants in important ways, so their effect on native students should be studied separately. For instance, economic migrants are associated with voluntary migration motivated by economic gains, while refugees are associated with forced migration and dependency on welfare assistance (Jacobsen 2005). In addition, refugees differ from economic migrants in the expected length of migration. International law protects refugees from being sent back to where their life and freedom would be endangered (UNHCR 2016). These two differences are likely to result in different selection patterns in the migration process and human capital investment decisions after migrating, so

³An important advantage of having a nationally representative sample is that, although I do not directly control for native flight, as my sample includes both public and private schools, my estimates measure the effect of an inflow of refugees on native students' academic achievement, including natives' response to refugee student presence.

their their effect on native students should be studied separately.⁴

In my context, the ideal strategy to identify the effect of refugees would be difference-in-differences, comparing the outcomes of native students before and after the refugee inflow in areas with different concentrations of refugees (a measure of the intensity-of-treatment). Data limitations make this approach impossible as counties were surveyed only once between 1971 and 1982, so I approximate a difference-in-differences framework by combining multiple micro studies from the National Center for Education Studies (NCES) and comparing the outcomes of native students who were exposed to a high fraction of refugees against those who were exposed to a lower fraction of refugees.⁵

I start by analysing the National Assessment of Educational Progress (NAEP) survey. This nationally representative study of public and private schools consists of repeated cross sections starting in 1971. With these data, which provide students' current location, I am able to compare the test scores of students in counties with high shares of refugees to those living in counties with low shares of refugees. In all analyses, I control for individual characteristics, 1970 county characteristics, and state fixed effects. First, to show that these counties were comparable prior to the inflow of Indochinese refugees in 1975, I estimate the effect on students' test scores from 1971 and 1975, before the arrival of the first refugees.⁶ Then, I estimate the effects on NAEP cross sections collected after the inflow of refugees in 1978, 1980, and 1982. Overall, the results show that the inflow of refugees does not affect the academic achievement of native students.

In addition, as each time it was conducted, the NAEP tested students ages 9 years, 13 years, and 17 years; I use cross cohort variation to estimate the effect. In particular, using variation in the percentage of students who are refugees by age and controlling for county fixed effects, the magnitude of the estimates increases but the coefficients remain statistically insignificant.

⁴For instance, Green and Iversen (2020) examine the effect of refugees on the educational attainment of native students in Norway. They find that an increase in the share of refugees has a small negative effect on disadvantaged native students' test scores. The authors explain that the effect results from the refugee groups who are more likely to be at risk which, they suggest, may come from the absence of compensatory resources at the school level. Moreover, the authors document that the presence of economic migrants is not associated with similar negative effects.

⁵It is not possible to conduct the analysis at the Metropolitan area (city) level using Decennial Census Data, as prior to 1980, census samples were sample sizes are too small (1 percent instead of 5 percent (Hunt, 2016))

⁶NAEP 1975 was conducted in school year 1974-1975, the final information was collected before the arrival of the first group of refugees

Furthermore, controlling by county and year fixed effects, by defining the treatment variable as the interaction between the share of refugees in the county and the share of years native students' attended school after the inflow over their time in school, I find a similar magnitude positive effect. It is reassuring that even using a more common, completely different source of variation, I find similar estimates.

I find the same patterns using geographic variation in the share of refugees but measuring native students' academic achievement using the High School and Beyond survey. This nationally representative study follows a cohort of students beginning in 10th grade (in 1980) through their final years in high school (in 1982), and then through their post-secondary education and early labor market outcomes (until 1992). With these data, which provide students' location in 1980, I compare the outcomes of students in counties with high shares of refugees to those living in counties with low shares of refugees. As before, in all analyses, I control for individual characteristics, 1970 county characteristics, and state fixed effects.

The results from High School and Beyond show that the inflow of refugees does not affect the academic achievement of native students. These estimates are precise enough to rule out negative effects larger magnitude than -0.05 standard deviations on native students' test scores. Specifically, the confidence interval of the effect on all students in 1980 and 1982 at a 90 percent significance level don't include values below -0.05 standard deviations.⁷ Moreover, I find that the inflow of Indochinese refugees increased native students' likelihood of completing post-secondary education and obtaining a graduate degree. Specifically, a one standard deviation increase in the share of refugees raised natives' likelihood of completing post-secondary education by 2 percentage points, and raised their probability of obtaining a bachelor and a graduate degree by 2.3 and 2.5 percentage points, respectively. This effect is concentrated among students whose parents have at least some college education. Regarding long-term outcomes, I find no evidence of a negative effect on native students' labor market participation or unemployment over the

⁷The literature on peer effects generally finds effects that are greater than 0.05 standard deviation (in absolute values). For instance, Sacerdote (2001) finds that having a college roommate with a one standard deviation higher GPA is associated with a 0.05 increase in the students own score. Likewise, Carrell and Hoekstra (2010) find that attending school with one more troubled boy (defined as a child living in a household with domestic violence) decreases boys' test scores by 0.06 standard deviations.

next ten years.

Additionally, to address concerns about attenuation bias given refugees high internal migration rates, I also estimate the effects measuring the share of refugees at the county level in 1980 with information from the Census Summary Files, using the initial dispersal as an instrument. As before, the coefficients on the test scores are small and never statistically significant at traditional levels. Moreover, when looking at the effect on post-secondary education, there is still a positive effect on completing secondary education and obtaining a graduate degree, but only the latter is statistically significant.

I also study how the inflow of refugees affected native students' socio-emotional outcomes. Refugees could have positive peer effects as they are a positively selected group and come from families that place a high value on education or, on the other hand, negative peer effects from increases in disruptive behaviour from their exposure to war. I do not find evidence that refugees affected native students' behavior and motivation in high school. Interestingly, the inflow of refugees has positive effects on native students' likelihood of registering to vote and on voting. There is also suggestive evidence of increased polarization, as natives are more likely to describe their political beliefs as radical and conservative as opposed to liberal and moderate.

In general, the evidence suggests that there are no negative effects on natives' academic achievement or attainment from the inflow of Indochinese refugees. It is worth highlighting that Indochinese refugees share similar demographic characteristics with refugees currently referred to the U.S. by the United Nations High Commissioner for Refugees, as both groups are positively selected. In both cases, over 35 percent of refugees have completed college while about 10 percent of them have no schooling. Moreover, 95 percent of refugee children were enrolled in school in 1980 and the rate is just as high today. Because of these similarities, studying the effect of Indochinese refugees on U.S. children in 1980 may shed light on the effect of allowing a similar number of refugees to enter the U.S. in the current setting.

The remainder of the paper is organized as follows. Section two provides background information on the inflow of Indochinese refugees. It first discusses the resettlement process on

which the identification strategy relies. Then, it goes over the mechanisms through which refugee children affect native children's academic achievement, and how they differ from those of economic migrants. Section three describes the data, while section four goes over the identification strategy and the evidence of its validity. Section five presents the results and section 6 concludes.

2 Background

2.1 The Refugee Resettlement Process

Indochinese refugees arrived to the United States in two main waves. The first one was after the fall of Saigon in April 30 of 1975 when refugees left the country under an evacuation effort organized by the United States government (Haines, 1985). The second one, in 1978-1979, was in response to the Sino-Vietnamese conflict, the Vietnamese invasion of Cambodia, and the border war between China and Vietnam; it was organized by Vietnamese authorities in response to international pressure (Hung, 1985). However, there was a substantial number of refugees who left their countries independently between the two waves (Haines, 1985).

During the first wave, refugees were airlifted to staging areas in the Pacific. Then, they were transported to one of four processing centers in the continental United States: Camp Pendleton (California), Camp Chaffee (Arkansas), Eglin Air Force Base (Florida), and Indiantown (Pennsylvania). Finally, they arrived at communities under the sponsorship of voluntary agencies (Haines, 1985). Refugees from the later waves experienced harder transitions. They traveled in boats, often assaulted by pirates, to Thailand where they stayed in refugee camps for long periods of time.

Voluntary agencies had different strategies for assigning refugees and their strategies affected the places where refugees were resettled (Office of Refugee Resettlement, 1984). For instance, the American Fund for Czechoslovak Refugees (AFCR) reallocated refugees from their main offices in New York, Boston, Salt Lake City, and San Francisco. Matching these location restrictions, AFCR resettled refugees mainly in California, Massachusetts, Connecticut, and New York

(State). Along the same lines, the International Rescue Committee (IRC) assigned refugees from their regional offices.⁸ Nevertheless, the number of refugees that each regional office resettled was determined by on-going communications between them and national headquarters.

On the other hand, religious voluntary agencies such as the United States Catholic Conference (USCC) and Church World Services resettled refugees through churches and church committees. USCC resettled refugees through resettlement offices associated with Catholic charities in each of the Catholic dioceses of the United States. This agency, resettled refugees in areas where housing and jobs are available. It also avoided isolating refugees from their ethnic group but struck not to concentrate them excessively in any area (Office of Refugee Resettlement, 1984). The Lutheran Immigration and Refugee Services (LIRS) also resettled refugees through congregational sponsors. The agency worked through a three-tiered system where the local sponsor finds initial housing and helps with enrollment of minors into the school system, the regional office provides back-up support, and the national office supports and monitors the regional and local case management. As the USCC, LIRS also avoided areas that have already been heavily impacted with refugee populations. Importantly, as opposed to non religious organization, religious organizations placed refugees throughout the whole country.

2.2 Resettlement as a natural experiment

There are two main reasons why I claim the initial dispersal of refugees to counties was exogenous. First, as opposed to Cuban refugees who were concentrated in Miami, there were significant efforts to disperse Southeast Asian refugees throughout the U.S. (Refugee Act 1975; Haines, 1985). Given the nature of the exodus of refugees, the 1975 Refugee Act was designed to rapidly guarantee that the necessary funds were available to refund local governments and voluntary agencies for expenditures related to the resettlement of refugees. However, the “Hearings before the Subcommittee on Immigration, Citizenship, and International Law of the Committee on the Judiciary House of Representatives” also emphasised the instructions given to the initial

⁸The regional offices are located in Atlanta, Georgia; Boston, Massachusetts; Houston and Dallas, Texas; Missoula, Montana; Portland, Oregon; San Diego, Los Angeles, Orange County, San Jose, and San Francisco, California; Seattle, Washington; and Washington, DC.

nine voluntary agencies working on the resettlement: Indochinese refugees should be dispersed as evenly and equitably as possible through the United States while avoiding resettlement in economically hard pressed areas.⁹ In practice, this meant that Indochinese refugees were assigned widely across the country with refugees ending up in over 75 percent of counties.

Second, there was no clear structure for assigning the refugees in each camp among the voluntary agencies and, since there were significant differences in the resettlement strategies across voluntary agencies, this led to variation in the share of refugees across the country. In theory, the Committee on Migration and Refugee Affairs from the American Council of Voluntary Agencies for Foreign Service (ACVAFS) was the main mechanism to coordinate the resettlement of refugees between voluntary agencies. Among its responsibilities, ACVAFS allocated the cases between the resettlement agencies. To do so, it created the Indochinese Refugee Data Center through which all Indochinese refugees were channeled to the voluntary agencies. However, the reality of the distribution was very different as Zucker (1982) explains that the number of refugees, as well as which refugees were resettled where, was actually determined by junior level personnel from the participating voluntary agencies. Likewise, Parsons and Vézina (2018) describe it as was a chaotic process where the proactiveness of the voluntary agents in each camp determined the number of refugees resettled by them.

The 1975 Task Force Report to the Congress confirm that HEW's Office of Education Refugee Task force accomplished a wide distribution of refugees both across states and within states by the end of 1975. The report documents that after the resettlement, there were fewer than 10 refugee students per school in over 85 percent of the schools that enrolled refugees. Moreover, by the end of the year only 28 school districts (out of 864 schools that applied for transitional assistance grants) had over 100 refugee students.

Over the next eight years, Indochinese refugees continued to arrive in the U.S. In principle, I could also use these later waves of refugees to identify the effects of refugees. Nevertheless, as

⁹The nine voluntary agencies were: U.S. Catholic Conference Migration and Refugee Services, American Fund for Czechoslovak Refugees, Church World Service*, Lutheran Immigration and Refugee Service*, United Hias Service INC.*, International Rescue Committee*, American Council for Nationalities Services, and Travelers Aid-International Social Services. (* Are currently resettling refugees)

in these later waves, there was a higher share of refugees who were resettled with prior refugees or other family sponsors, later refugees may have had some choice over their initial destination. Therefore, to avoid the potential biases from incorporating the later waves of refugees, in the main specifications I identify the effect based solely on the first wave of refugees.

In addition, a potential source concern is secondary migration as the Office of Refugee Resettlement estimates suggest that in 1983, eight years after the arrival of the first refugees, only 75 percent of refugees were still living in the state in which they were initially resettled.¹⁰ Therefore, to account for the internal migration of refugees, as described in more detail in section 4, I calculate the share of refugees at the county level in 1980 using information from the Census Summary Files and estimate the effect using the initial assignment as an instrument.¹¹ The results are substantially the same.

2.3 Refugees versus immigrants

An essential difference between refugees and economic migrants is that economic migrants are associated with voluntary migration motivated by economic gains, while refugees are associated with forced migration (Jacobsen 2005). Although there is variation in pre-migration war experiences as some refugee children were sheltered from traumatic experiences, others experienced multiple forms of trauma (Pacione *et al.*, 2013). Because exposure to conflict in their country of origin makes adult migrants violence-prone in their host country (Couttenier *et al.*, 2019), a potential mechanism through which refugee children may affect their classmates is through disruptive behavior. In fact, Betancourt *et al.* (2012) found that over forty percent of war-affected refugee children resettled in the U.S. and surveyed by the National Child Traumatic Stress network had behavioral problems. The increase in disruptive behavior may negatively affect na-

¹⁰To measure the extent of this issue, the Office of Refugee Resettlement created the Refugee State-of-Origin Report. As refugees generally applied for a Social Security Number immediately upon arrival, in this report, they used the first three digits of the Social Security Number - assigned geographically in blocks by State - to check the fraction of refugees in each State that had originally been assigned to that State as well as the number of refugees who had migrated to other states.

¹¹Although there is no detailed longitudinal information, the descriptive evidence indicates that refugees moved directly to their final destination. Among those who migrated, about 62 percent moved to California; they were attracted by the climate, employment opportunities, training opportunities, and the possibility to be reunified with relatives or other members of the same ethnic communities (Hung, 1985; Refugees Resettlement Program Report, 1984).

tive students as previous work has found strong negative externalities in academic achievement from attending school with domestic violence victims (Carrell *et al.*, 2018; Carrell and Hoekstra, 2010).

Exposure to violence also reduces academic attainment. The evidence on the effect of conflict on human capital accumulation suggests that individuals exposed to conflict obtained, on average, fewer years of education and that the education they obtain is of lower quality (e.g., Leon, 2012; Chamarbagwala and Moran 2011; Galdo, 2013; Shemyakina, 2011; Swee, 2015). Therefore, a second mechanism through which refugees may negatively affect native children is by changing the classroom composition as low-achieving students lower the academic achievement of their peers (Imberman *et al.*, 2012; Carrell *et al.*, 2009). In addition, like economic migrants, refugee children may compete with native children for classroom resources, which may lower the quality of native education.

However, the effect of war on the education level of refugees that reach the United States is not clear, as only a select group of refugees has the resources and the ability to migrate. For instance, as there was discrimination against those associated with the former government or the American war effort, refugees in Vietnam obtained less education than they would have in the absence of the war. In practice, this prevented some children from attending college (Hung, 1985). Nevertheless, as shown in Appendix Table C1, the refugees that reached the U.S. were highly qualified: 37% of adult refugees had at least some college and 19% had completed high school; in contrast, only 1.0% and 6.7% of Vietnamese have completed the same education level in 1975 (Barro and Lee, 2013).

Therefore, to better understand how Indochinese refugee children (aged 5–18 in 1980) could have affected native students, it is useful to see their educational attainment and labor market characteristics twenty five years after their arrival. Appendix Table C3 shows that 50 percent of Indochinese refugees who entered the country as children have completed college or more; in contrast, only 35 percent of natives in the same age group have that education level. As Indochinese children, who entered the country as refugees, ended up obtaining more education than

their native peers, their influx may have improved class composition and raised the academic achievement of their classmates through positive peer effects (Imberman *et al.*, 2012; Carrell *et al.*, 2009).

Finally, school districts could apply for grants to help cover the emergency costs of instructing Vietnamese and Cambodian children (Refugee Task Force, 1975). Through the Refugee Transition Program, schools received \$300 for each refugee if there were fewer than 100 refugee children in total (or 1 percent of the school, whichever was smaller) and \$600 per refugee above 100 (Task Force, 1975). These grants aimed to cover English language instruction, special aides or tutors, additional instructional materials, and teachers' training. The amount was comparable to the transfers received for low-income families as they were based on the formula used in the Every Student Succeeds Act Title I (Refugee Task Force, 1975). Importantly, though, financial assistance was restricted to Indochinese refugee children, so it should not have directly benefited native students.

3 Data

To identify the causal effect of the inflow of Indochinese refugees, it is key to have information on the assigned location of refugees as later locations, decided by refugees, make it hard to disentangle the effect of the inflow from the characteristics of the location that motivated refugees to move to a given county. To calculate the number of refugees by county, I use records of all Indochinese refugees since 1975 collected by the Office of Refugee Resettlement and kept by the U.S. National Archives and Records Administration. These data includes the day, month and arrival year as well as the exact date of birth of each refugee. Importantly, it also contains information on the county of first destination of each refugee which, given the context of the refugee resettlement program in 1975, was determined by the voluntary agency resettling them. The share of refugees in each county is then calculated by dividing the number of refugees assigned to each county by the 1975 county population estimates from the National Bureau of Economic Research. To determine the relevance of having the assigned location against

the current location, I also compute the share of refugees based on the number of Vietnamese reported to live in each county in the 1980 Census Summary files.

To measure the education outcomes of U.S. students, I combine several micro studies from the National Center for Education Studies (NCES). First, I use the National Assessment of Educational Progress (NAEP), a nationally representative study of public and private schools that started in 1971. This study contains repeated cross sections information on reading test scores in school years ending in 1971, 1975, and 1980, and math test scores in school years ending in 1978 and 1982.¹² Each time it was conducted, the NAEP tested 9 years old, 13 years old, and 17 years old students from schools in approximately 150 counties. Unfortunately for the purpose of this study, the sample of counties changed over time and counties were only surveyed once throughout the period.

Second, I use data from High School and Beyond. It is a nationally representative panel study that follows approximately ten thousand students who were in 10th grade in 1980 throughout their secondary and post-secondary education. As with NAEP, this study includes public and private schools. As opposed to NAEP, this study follows students over time and has information beyond students' test scores. Specifically, it has students scores on two standardized tests taken by them in 10th and 12th grade but it also recorded whether students graduated from high school, applied to college, whether they started and completed post-secondary education as well as the highest education level they achieved.

The study also recorded information on non academic outcomes. Students were also asked about their political beliefs in 1980. In 1984, two years after they were expected to graduate, they recorded whether they had registered to vote and whether they had voted since they were 18. They surveyed them again in 1986 and 1992. In addition, I calculated two indices on their motivation and discipline based on several questions about their motivation, interest, and grades in school, as well as on whether they had been suspended or were viewed as trouble-makers by their peers. Finally, I created a dummy for whether they had a child as a teen based on their

¹²I could not use data from NAEP after 1982, as the restricted use version does not have county information between 1984 and 1988.

date of birth and the date of birth of their oldest child.

High School and Beyond also has information on the labor market outcomes of these group of students between 1984 and 1992. With this information, I calculated average income between 1989 and 1992 - excluding the first five years because there is large variation in income levels directly after graduation. I also calculated an index, centered at zero and with a standard deviation of one, based on their labor market participation every February between 1984 and 1992. Finally, I calculated an index based on their employment in the same period.

Importantly, both micro studies have information on race or birthplace which allows me to restrict the sample native students. In particular, I used the race variable in NAEP cross sections to exclude students with Asian origins. Although in practice this exclude some American students, it is the only way to guarantee I do not have refugee students in my sample. In High School and Beyond, I can directly restrict the sample to students born in the U.S. to exclude refugees from the sample.

4 Methodology

4.1 Empirical Specification

The basic specification is a difference model that compares the outcomes of native students in counties with a low share of refugees against those living in counties with a high share of refugees. The estimated regressions are of the form:

$$Y_{ikzt} = \alpha + \beta Share_z + X_{ikz}\Gamma_1 + S_{kz}\Gamma_2 + C_z\Gamma_3 + \gamma_s + \varepsilon_{ikzt} \quad (1)$$

where Y_{ikzt} is the outcome of student i , in school k , in county z , in period t . $Share_z$ is the number of Indochinese refugees who were assigned to county z in 1975 divided the county's population in 1975. X_{ikz} are individual characteristics such as native students' race and parental education. Likewise, S_{kz} are school characteristics: teacher student ratio and school size which are only available in High School and Beyond data. Finally, C_z are county level characteristics

from the 1970 County Books such as the percentage black, the median years of education, the percentage of housing empty, median household income, and labor market characteristics such as the unemployment rate and the labor force participation rate. All regressions also include state fixed effects.

As refugees were exogenously assigned to counties, as described in section 3, the effect can be identified by comparing the outcomes of native students in counties based on the share of refugees in their county after 1975. In all regressions, the parameter of interest is β , measured as the effect of increasing the share of refugees in 1975 by one standard deviation in the county in which native students live when the outcome was measured. It is identified from variation across counties but within the same state due to state fixed effects.

In all tables, standard errors are clustered at the county level as the share of refugees is the same for all schools located in the same country. Moreover, as in some tables there are many correlated outcome variables, whenever is necessary, I also report significance level adjusted for multiple hypotheses testing using Holmes (1979). In addition, regressions using High School and Beyond longitudinal are weighted to adjust for attrition throughout the study.

4.2 Identification strategy

The validity of the identification strategy relies on the exogeneity of the share of refugees across counties. The next three tables show evidence of the plausibility of this assumption. The first column of Table 1 shows the correlation between the share of refugees who arrived in 1975 and the characteristics of counties in 1970, before the inflow. It shows that refugees were more likely to be placed in counties with higher median years of education, median household income, and labor force participation. This is consistent with a scenario where refugees were placed across the country avoiding economically pressed areas as required by the Congress. However, it is worth highlighting that the R^2 of these regressions is low and 1970 county characteristics explain less than 3 percent of the variation in the share of refugees. The weakness of this model fit is, therefore, additional evidence of the quasi random assigned of refugees as most of the

variation appears to be idiosyncratic.

The second column of Table 1 shows the correlation between the share of refugees in 1980, based on their location in 1980, and the characteristics of counties in 1970. As before, the evidence shows that refugees were assigned to counties with higher income levels. There are small differences between the coefficients in these two columns and the coefficients are slightly larger in the second column. This is not surprising as a higher fraction of refugees who arrived between 1976 and 1980 were reunified with their families and, as a result, they may have been able to choose to settle in better off locations. Because of this, I will identify the effect of refugees based only on the first wave of refugees who arrived in 1975 and were quickly dispersed by voluntary agencies.

To test whether the educational outcomes of native children living in counties with higher shares of refugees are systematically different from those living in counties with lower shares of refugees, I look at relation between the share of refugees that arrived in 1975 and the test scores of students at time t before the inflow of refugees, after controlling for 1970 county characteristics. Table 2 shows the effect on student test scores in the school years ending in 1971 and 1975.^{13,14} Overall, there is no evidence of a positive effect on reading test scores before the inflow of refugees, indicating that variation in the share of refugees across counties is not correlated with prior student test scores, suggesting that the identification strategy is valid.

Although the negative coefficients in the first row, based on 1971 test scores, and the positive coefficients in the second row, based on 1975 test scores, may suggest a positive trend, it is worth remembering that the estimates in each row are based on a different set of counties. To test whether the share of refugees was associated with counties with positive trends, in additional regressions, not reported here, I tested whether there was a relationship between employment growth between 1970 and 1975 (and yearly) and found no evidence of positive association.

To evaluate if there is a relationship between the educational attainment of adult native

¹³The last group of students were tested in May 1975, shortly after the first refugees arrived and before they started attending school

¹⁴It is worth noting that the counties in the 1971 sample are different from the counties in the 1975 sample so there are both changes in time and geography between the two panels.

students and the share of refugees, I look at the association between the share of refugees who arrived in 1975 and the educational level of natives over 25 years old as reported in the Census Summary Tape Files from 1980 in Table 3. The coefficients in panel A show that there is no significant correlation between the share of refugees who arrived in 1975 and the educational attainment of adults over 25 1980. As these adults were 20 years old or older in 1975, these results can be viewed as a placebo test as these group of adults had completed their education before the influx.

The coefficients in panel B of Table 3 study whether the inflow of refugees had any long term effects on the labor market. They show that there is no evidence of an effect on labor force participation, the employment level, the median household income, or the poverty rate. Finally, the results in panel C suggest that the refugees were established in counties that ended up having higher shares of non-Vietnamese Asians in 1980, suggesting that refugees may have attracted additional Asian immigrants.

5 Results

The first set of results looks at the outcomes of the panel of students from National Assessment of Educational Progress. Table 4 presents the effect of attending school in a county with a higher share of refugees on native students' test scores. Each cell report the coefficient of an independent regression. The first three columns estimated the effect on 4th, 9th, and 11th grade students using within states and across counties variation in the share of refugees. I find that a one standard deviation increase in the share of refugees from 1975 raises 4th and 9th grade native students' test scores in mathematics by 0.03 standard deviations in 1978. The rest of the coefficients are generally not statistically significant so, overall, the results indicate that there is no evidence of a negative effect on native students' test scores.

I also conduct two robustness checks using information from NAEP. First, I estimate the effect based on cross cohort variation as it is common in the peer effects literature. To do so, I calculate the share of refugees in the same age group for the native students who are 9, 13 and

17 years old in each of the NAEP studies. The main advantage of this identification strategy is that it allows me to include county fixed effects and, thus, control for unobserved differences between counties that were exposed to different shares of refugees. These results are presented in the fourth column of Table 4. The coefficients (in standard deviations) are very close to the results from the first three columns and, if anything, they become more positive.

Second, I estimate the effect by calculating a measure of exposure to refugees by interacting the share of refugees with the percentage of native students' school years after the inflow of Indochinese refugees. For instance, in NAEP 1980, 4th grade students have been exposed during all their school life while those in 9th and 11th grade have been exposed during 5/9 and 5/11 of their school time. Then by combining all the information from NAEP 1978, 1980, and 1982, I can estimate the effect while including both county and year fixed effects. This results are presented in the fourth column of Table 4. The coefficient is very similar to the previous columns indicating that including county and year fixed effects does not change the estimates.

Overall, the estimates from Table 4 show the same pattern. It is worth highlighting that the estimates in the first column come from the variation in the share of refugees that results from the dispersal policy, while the estimates in columns two through four come variation in the age distribution. The consistency between the initial estimates and those from the second type of variation - which allow for the inclusion of country and year fixed effects - increases my confidence on the identification strategy.

Now I turn to the results using information from High School and Beyond. Table 5 presents the effect of attending school in a county with a higher share of refugees on native students' test scores. Panel A shows the estimates when the share of refugees comes from the U.S. archives while Panel B shows the results when the share of refugees comes from the Census Summary Files. The left panel shows the results for their average test score in their sophomore year, 1980, while the right panel shows the results for their senior year, 1980. Columns (1) and (4) report the estimates for all students, columns (2) and (5) report the results for students with parent with low education or those who at most finished high school, and columns (3) and (6) report

the results for students whose parents have high education or those who started college or have more education. In this table, and in all subsequent tables, each cell contains the results of a separate regression that controls for county characteristics and state fixed effects. In addition, these estimates as well as all estimates from High School and Beyond include individual and school characteristics.

The results presented in panel (A) of Table 5 show that an increase of one standard deviation in the share of refugees on average increases native students' by 0.007 standard deviation in 1980 and decreases them by 0.003 in 1982. Nevertheless the effect is never statistically significant at traditional levels. The results from panel (B) indicate that overall the inflow of refugees did not significantly affect native students' learning and show that, in this cases, selection bias does not play an important role identifying the effect. In addition, to determine whether there are differences in other outcomes that are not captured by student test scores in high school, I study the effect on socio-emotional outcomes in Appendix Table A1. I find no evidence that the inflow of refugees affected native students' motivation or interest in school, the likelihood of having a disciplinary incident, or the probability of been pregnant in school or as a teenager.

Then I turn to post-secondary education. The first column of Table 6 studies how the inflow of refugees affected native students' likelihood of completing high school and shows that there is no effect. The next columns show the effect on natives' post-secondary education. The results indicate that the inflow of refugees did not affect who applied or started college but it induced natives to complete college. A one standard deviation increase in the share of refugees increases the likelihood of completing post-secondary education by 2 percentage points or 4.5% and increased the probability of completing a bachelor and a graduate degree by 2.3 and 2.5 percentage points respectively. Interestingly, there is no evidence of a positive effect in the second panel which highlights the importance of the novel information from the National Archives.

There are several differences between which refugees were counted (and where they were counted) in each panel and these differences may results in different effects over native children.

First, the refugees may have moved from their assigned location. For instance, if they self-select into locations that are worse off this will bias the results negatively. Second, the average skill level of refugees decreased over time and refugees' effect may vary depending on their skills. Finally, there is a higher share of refugees in 1980 as refugees continued to arrive to the U.S. after 1975. This may be important if there is a tipping point beyond which natives react to their presence.

To take a close look at these differences, Table 7 estimates the effect including both the first and the second wave of refugees. The results suggest that the positive effect on natives' education level comes mainly from the first wave of refugees. On the other hand, refugees that arrived later may have induced natives with parents with low education levels (finished high school or less) to drop out of high school. However, this effect is not necessarily causal as refugees who arrived later may have decided where to settle and, therefore, may be negatively biased as they were more likely to be resettled in regions with lower education. As it is important to differentiate between these two scenarios, to rule out the selection channel, in Table 8, I instrument the share of refugees living in each county in 1980 with the share of refugees assigned to that county in 1975. The results show that there is no evidence of a negative effect. In fact, the only coefficient that is statistically significant is the effect of obtaining a graduate degree. This suggests that the negative effect coming from the later waves of refugees in Table 7 is the result of selection into worse off locations and not of a different effect from the second wave of refugees.

To test the robustness of these results, I estimate the results including only counties that received at least one refugee in Appendix Table B2. In this case, the identification comes only from changes in the intensity of refugees relative to their population as opposed to the extensive margin - whether they received refugees or not. The coefficients are slightly higher in this sample and show the same pattern - an increase in the share of refugees raises the likelihood of completing post-secondary education. Likewise, the effects are essentially identical when I exclude California, the state that received the highest number of refugees, from the sample in Appendix Table B1.

There are also several ways to measure the share of refugees and I explore if they make a difference in Appendix Table B3. In the first row of each panel the share of refugees is calculated by dividing the total number of refugees by the total population in 1975 in that county as measured by the population estimates from the National Bureau of Economic Research. In the next three rows, I count the number of refugee children (between 0 and 18 years in 1975 in the second row, 6 and 18 years old in the third row, and 16 to 12 years old in the fourth row) and divide them by the estimated number of children in the same age group in the county. The advantage of using a more precise age group is that the children are closer in age (and grade) to the children included in the High School and Beyond sample. However, refugee children may not necessarily attend the grade for their age so looking at broader groups may be the relevant group. In addition, there is higher measurement error when the age groups become smaller. Overall, the results are robust and tell the same story. As expected, the coefficient are a little bit bigger with the smaller age groups and more significant.

To study whether there was any effect on non academic outcomes, in Appendix Tables A2 and A3 I look at the likelihood of voting as well as the effect to native student's political beliefs. The estimates indicate that being exposed to a higher share of refugees during school raised the likelihood of registering to vote of natives students with parents with high education by one percentage point and increased all natives' likelihood of voting in the presidential elections of 1988 by the same amount. Moreover, Appendix Table A3 suggest the influx of refugees also influenced native students' political beliefs as students living in areas with more refugees where more likely to be radical and conservative as opposed to liberal and moderate. This is an interesting result, as voting is considered a positive externality of education. However, the presence of refugees may also directly affect students' political participation.

The next two tables look at the impact of the inflow of refugees on native students' labor market outcomes over the next 10 years, between 1983 and 1992. Table 9 looks at whether attending school when there was a higher share of refugees in their counties affected natives' total income, labor force participation or employment while Table 10 studies their income sources

in 1992. As before, there is no evidence of a negative effect on native students' early labor market outcomes and, if anything, it decreased the likelihood that native students with parents with low education were on public assistance in 1992.

6 Conclusion

Worldwide, there are currently over 10 million certified refugee children, yet, we still know very little about how refugee inflows affect host countries' educational opportunities. This is important as concerns on the costs refugees impose on local communities have been growing motivated, in part, by the potential negative spillovers from refugee children onto their classmates. I shed light on this question by using a natural experiment generated by the largest inflow of refugees in U.S. history – the migration of Indochinese refugees at the end of the Vietnam War. Importantly, during this period, refugees were assigned to counties by voluntary agencies on a quasi-random basis. By making use of information on initial assignment, I am able to make substantial inroads on selection bias that is inherent in previous studies of refugee impacts.

Using information on initial placement, I find that, contrary to common perception, an inflow of refugee students does not impose negative effects on native students' education outcomes. Rather, a refugee presence generates positive spillovers, increasing natives' likelihood of completing post-secondary degrees. This unexpected finding is driven by my ability to harness quasi-random variation in refugees' location: when I use information on individuals' location choices just five years after their initial placement, the estimated effect on native outcomes is negative.

I also provide evidence that positive spillovers are driven by two main channels: first, like refugees who are currently arriving in the United States, the Indochinese refugees who arrived in 1975 were positively selected. As described in Section 3, they were disproportionately from families with college degrees and families with a parent who worked in a white-collar occupation. In addition, the federal government put significant resources into incentivizing refugees' college attendance. These two factors raise native students' academic attainment as both increases

in the incentives to obtain post-secondary education for a particular group and having peers with more parental education have been shown to increase their classmates academic success. Second, small transfers from the federal government to schools with high shares of refugees may have led to increases in school quality that benefited all students.

Taken together, my estimates suggest that current concerns about the impact of refugees on native children's opportunities are likely overstated. More generally, my study highlights the importance of taking immigrants' location choices into account when examining their impacts on host communities. Moving forward, research designs that circumvent selection bias will be critical to understanding this important phenomenon.

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7 Tables and Figures

Table 1: Relation between the share of refugees at the County level and 1970 County Characteristics

	U.S. National Archives 1975 Share	1980 Census Summary Files
Percentage black	-0.0003 (0.0002)	0.0001 (0.0002)
Median years of education	0.0079*** (0.0020)	0.0086** (0.0036)
Percentage of housing empty	-0.0004 (0.0006)	-0.0013*** (0.0004)
Logarithm of median household income	0.0300* (0.0178)	0.0836*** (0.0233)
Unemployment rate 1970	0.0012 (0.0007)	0.0016 (0.0011)
Labor force participation rate	0.0004* (0.0002)	-0.0005 (0.0004)
F-statistic	4.9989	10.0421
P-value	0.0004	0.0000

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Source: 1970 County Books.

Table 2: Relation between the share of refugees and native students' test scores - National Assessment of Educational Progress

	4th grade	9th grade	11th grade
Reading 1971	-0.01 (0.64) [22740]	-0.01 (0.52) [25170]	0.01 (0.58) [23230]
Reading 1975	0.02 (0.40) [19900]	0.01 (0.32) [19590]	0.02 (0.24) [18020]

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: *P*-values from standard errors clustered at the county level in parentheses. Standard errors also account for multiple imputation in student test scores. Number of observations in square brackets.

Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1971, and 1975 Reading Assessments.

Table 3: Relation between the share of refugees and native adults' academic attainment - Census Summary Tape Files

	Share of refugees in 1975
<i>Panel A: Education</i>	
Share high school dropout: 0-100	-0.0004 (0.0006)
Share high school graduate: 0-100	0.0003 (0.0005)
Share some college or more: 0-100	0.0017 (0.0011)
<i>Panel B: Labor market conditions</i>	
Employment share	0.0003 (0.0006)
Labor force participation	-0.0004 (0.0010)
Median household income in 1979	0.0038 (0.0095)
Poverty rate	0.0007 (0.0008)
<i>Panel C: Race</i>	
Share Black: 0-100	0.0008 (0.0008)
Share Hispanic: 0-100	-0.0008 (0.0005)
Share Asian: 0-100	0.0104* (0.0056)
Share other: 0-100	-0.0001 (0.0004)
F statistic	2.6
P value	0.014

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Source: 1980 Census Summary Tape Files.

Table 4: Effect of the share of refugees on native students' test scores
- National Assessment of Educational Progress

	4th Grade	9th Grade	11th Grade	Cross Cohort	Dosage or Exposure
Math 1978	0.03* (0.02)	0.03* (0.017)	-0.02 (0.014)	0.005 (0.015)	
Reading 1980	-0.004 (0.012)	0.001 (0.010)	-0.001 (0.010)	0.03 (0.030)	
Math 1982	-0.03 (0.037)	-0.01 (0.018)	0.02 (0.039)	0.34 (0.049)	
Math and Reading					0.008 (0.005)
Controls	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	No	No
County fixed effects	No	No	No	Yes	Yes
Year fixed effects	No	No	No	No	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parenthesis. Standard errors also account for multiple imputation in student test scores.

Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1978 and 1982 Mathematics Assessments and 1980 Reading Assessments.

Table 5: Effect of the share of refugees on native students' test scores - High School and Beyond

	1980			1982		
	All	Low Education	High Education	All	Low Education	High Education
<i>Panel A: 1975 Share (Archives)</i>						
Share of Refugees	0.007 (0.017)	-0.004 (0.025)	0.018 (0.022)	-0.003 (0.017)	-0.007 (0.022)	0.009 (0.023)
<i>Panel B: 1980 Share (Census)</i>						
Share of Refugees	0.005 (0.029)	0.011 (0.030)	0.004 (0.043)	-0.023 (0.023)	-0.023 (0.022)	-0.015 (0.035)
Number of students	9220	3640	5300	9220	3640	5300
Number of schools	740	710	730	740	710	730
Number of counties	400	390	390	400	390	390
County characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table 6: Effect of the share of refugees on native students' academic attainment - High School and Beyond

	Post-secondary Education						
	High school						
	Graduate	Apply	Start	Complete	Associate	Bachelor	Graduate
<i>Panel A: 1975 Share (Archives)</i>							
All	-0.003 (0.004)	0.003 (0.011)	-0.004 (0.007)	0.020* (0.011)	0.000 (0.007)	0.023* (0.013)	0.025*** (0.009)
Low education	-0.005 (0.008)	-0.017 (0.020)	-0.016 (0.018)	0.015 (0.021)	0.013 (0.014)	0.014 (0.019)	0.000 (0.009)
High education	-0.004 (0.004)	0.015 (0.013)	0.003 (0.008)	0.029** (0.014)	-0.003 (0.007)	0.033** (0.016)	0.039*** (0.010)
<i>Panel B: 1980 Share (Census)</i>							
All	-0.004 (0.005)	0.006 (0.011)	-0.008 (0.009)	0.005 (0.013)	0.001 (0.005)	0.004 (0.014)	0.005 (0.006)
Low education	-0.013 (0.013)	0.019 (0.023)	-0.043*** (0.015)	0.012 (0.018)	-0.002 (0.015)	0.013 (0.012)	0.004 (0.009)
High education	-0.001 (0.005)	0.008 (0.016)	0.007 (0.008)	0.005 (0.015)	0.001 (0.007)	0.006 (0.020)	0.009 (0.009)
Mean	.91	.70	.88	.44	.07	.33	.13
Number of students	5000	3870	4290	4290	4290	4290	4290
Number of schools	730	690	710	710	710	710	710
Number of counties	390	370	390	390	390	390	390
County characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.
 Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table 7: Effect of the share of refugees on native students' academic attainment by arrival year - High School and Beyond

	High school		Post-secondary Education					
	Graduate	Apply	Start	Complete	Associate	Bachelor	Graduate	
<i>Panel A: All</i>								
Share of refugees in 1975	-0.002 (0.004)	0.000 (0.012)	-0.001 (0.008)	0.020* (0.012)	0.005 (0.008)	0.021 (0.014)	0.025*** (0.010)	
Share of refugees in 1976-1980	-0.003 (0.005)	0.009 (0.012)	-0.011 (0.009)	0.001 (0.011)	-0.014** (0.007)	0.007 (0.010)	-0.000 (0.006)	
Number of students	8620	5840	6500	6500	6500	6500	6500	
<i>Panel B: Parents with high school or less</i>								
Share of refugees in 1975	0.002 (0.009)	-0.034 (0.021)	-0.007 (0.021)	0.011 (0.022)	0.015 (0.014)	0.018 (0.021)	0.001 (0.010)	
Share of refugees in 1976-1980	-0.025** (0.012)	0.050* (0.027)	-0.024 (0.020)	0.011 (0.017)	-0.006 (0.012)	-0.011 (0.016)	-0.002 (0.009)	
Number of students	3390	1860	2080	2080	2080	2080	2080	
<i>Panel C: Parents with some college or more</i>								
Share of refugees in 1975	-0.006 (0.005)	0.017 (0.013)	0.005 (0.008)	0.031** (0.014)	0.003 (0.008)	0.027 (0.018)	0.038*** (0.011)	
Share of refugees in 1976-1980	0.007 (0.005)	-0.004 (0.014)	-0.005 (0.009)	-0.006 (0.013)	-0.019** (0.008)	0.018 (0.016)	0.003 (0.009)	
Number of students	5000	3870	4290	4290	4290	4290	4290	
Number of schools	730	690	710	710	710	710	710	
Number of counties	390	370	390	390	390	390	390	
County characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Student characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
School characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table 8: Instrumental variable estimates of the effect of the share of refugees on native students' academic attainment - High School and Beyond

	High school		Post-secondary Education						
	Graduate	Apply	Start	Complete	Associate	Bachelor	Graduate		
<i>Panel A: All</i>									
Share of refugees 1980	-0.009 (0.013)	0.010 (0.039)	-0.014 (0.023)	0.064 (0.044)	0.001 (0.021)	0.071 (0.053)	0.079* (0.045)		
Number of students	8620	5840	6500	6500	6500	6500	6500		
First stage F	12.2	12.2	10.6	10.6	10.6	10.6	10.6		
<i>Panel B: Parents with high school or less</i>									
Share of refugees 1980	-0.016 (0.027)	-0.048 (0.054)	-0.043 (0.047)	0.040 (0.052)	0.033 (0.034)	0.035 (0.048)	0.001 (0.024)		
Number of students	3390	1860	2080	2080	2080	2080	2080		
First stage F	18.9	25.4	18.4	18.4	18.4	18.4	18.4		
<i>Panel C: Parents with some college or more</i>									
Share of refugees 1980	-0.012 (0.011)	0.054 (0.056)	0.011 (0.028)	0.097 (0.067)	-0.009 (0.024)	0.109 (0.080)	0.130* (0.067)		
Number of students	5000	3870	4290	4290	4290	4290	4290		
First stage F	8.9	8.7	8.2	8.2	8.2	8.2	8.2		
Number of schools	730	690	710	710	710	710	710		
Number of counties	390	370	390	390	390	390	390		
County characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Student characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
School characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes		

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.
 Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table 9: Effect of the share of refugees on native students' labor market outcomes - High School and Beyond

	Average Income	Income Index	Labor Force Participation Index	Unemployment Index
<i>Panel A: 1975 Share (Archives)</i>				
All	0.006 (0.013)	0.030 (0.024)	-0.006 (0.017)	-0.028 (0.026)
Low education	0.027 (0.024)	0.008 (0.028)	0.018 (0.027)	-0.028 (0.043)
High education	-0.005 (0.014)	0.049 (0.033)	-0.028 (0.023)	-0.026 (0.026)
<i>Panel B: 1980 Share (Census)</i>				
All	0.008 (0.015)	0.025 (0.038)	-0.016 (0.016)	0.011 (0.026)
Low education	0.028 (0.029)	-0.012 (0.047)	-0.025 (0.040)	-0.022 (0.045)
High education	0.005 (0.018)	0.054 (0.055)	-0.022 (0.019)	0.032 (0.028)
Mean	9.54	0	.12	-.05
Number of students	4450	2160	4590	1690
Number of schools	720	630	720	600
Number of counties	390	360	390	340
County characteristics	Yes	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table 10: Effect of the share of refugees on native students' income in 1992 - High School and Beyond

	Wage (any)	Social security	Unemployment compensation	Public Assistance	No Income
<i>Panel A: 1975 Share (Archives)</i>					
All	0.001 (0.005)	-0.002 (0.001)	-0.003 (0.004)	0.001 (0.004)	0.002 (0.003)
Low education	-0.006 (0.008)	-0.004 (0.003)	-0.007 (0.007)	-0.008* (0.005)	0.007 (0.006)
High education	0.004 (0.006)	-0.001 (0.002)	0.000 (0.005)	0.006 (0.005)	-0.001 (0.004)
<i>Panel B: 1980 Share (Census)</i>					
All	-0.008 (0.008)	-0.002 (0.003)	-0.000 (0.005)	0.003 (0.004)	0.005 (0.005)
Low education	-0.010 (0.011)	-0.005 (0.008)	-0.004 (0.012)	-0.000 (0.008)	0.006 (0.008)
High education	-0.005 (0.011)	-0.000 (0.002)	0.001 (0.008)	0.007 (0.005)	0.003 (0.005)
Mean	.89	.01	.06	.05	.04
Number of students	4800	4800	4800	4800	4800
Number of schools	720	720	720	720	720
Number of counties	390	390	390	390	390
County characteristics	Yes	Yes	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

8 Appendix A: Additional Outcomes

Table A1: Effect of the share of refugees on native students' socio-emotional outcomes - High School and Beyond

	Motivation	Disciplinary problems	Teenage pregnancy
<i>Panel A: 1975 Share (Archives)</i>			
All	0.012 (0.020)	0.026 (0.027)	-0.001 (0.004)
Low education	0.042 (0.040)	-0.021 (0.037)	-0.001 (0.007)
High education	0.018 (0.020)	0.041 (0.041)	0.001 (0.006)
<i>Panel B: 1980 Share (Census)</i>			
All	-0.010 (0.020)	0.017 (0.026)	0.007 (0.006)
Low education	-0.014 (0.053)	-0.030 (0.039)	0.010 (0.010)
High education	0.004 (0.025)	0.025 (0.031)	0.006 (0.007)
Mean	0	-.02	.04
Number of students	4130	4220	4920
Number of schools	700	700	730
Number of counties	390	390	390
County characteristics	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table A2: Effect of the share of refugees on native students' on voting - High School and Beyond

	Registered to vote			Voted		
	1984	1986	1992	Since age 18 (in 84)	1984 presidential election	1988 presidential election
<i>Panel A: 1975 Share (Archives)</i>						
All	0.008 (0.007)	0.009 (0.010)	0.004 (0.008)	0.011 (0.008)	0.005 (0.007)	0.014** (0.007)
Low education	0.001 (0.014)	-0.009 (0.016)	0.009 (0.013)	0.002 (0.012)	-0.005 (0.014)	0.020* (0.012)
High education	0.016* (0.009)	0.021** (0.011)	0.004 (0.009)	0.021** (0.009)	0.014 (0.008)	0.015* (0.008)
<i>Panel B: 1980 Share (Census)</i>						
All	0.001 (0.011)	0.015 (0.009)	0.001 (0.010)	0.002 (0.011)	0.014* (0.008)	0.023*** (0.008)
Low education	0.005 (0.016)	0.005 (0.017)	-0.000 (0.017)	0.009 (0.014)	0.009 (0.016)	-0.001 (0.017)
High education	0.002 (0.014)	0.020** (0.010)	0.003 (0.012)	0.001 (0.014)	0.016 (0.010)	0.037*** (0.011)
Mean	.56	.69	.67	.36	.52	.57
Number of students	5200	4820	4760	5170	4810	4770
Number of schools	730	730	720	730	730	720
Number of counties	390	390	390	390	390	390
County characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table A3: Effect of the share of refugees on native students' on political beliefs
- High School and Beyond

	Radical	Liberal	Moderate	Conservative
<i>Panel A: 1975 Share (Archives)</i>				
All	0.008*** (0.003)	-0.007 (0.005)	-0.010 (0.007)	0.006 (0.004)
Low education	0.012** (0.005)	-0.006 (0.008)	-0.012 (0.010)	0.001 (0.006)
High education	0.010** (0.004)	-0.008 (0.006)	-0.010 (0.011)	0.008* (0.005)
<i>Panel B: 1980 Share (Census)</i>				
All	0.008** (0.004)	-0.013** (0.006)	-0.005 (0.008)	0.004 (0.005)
Low education	0.014** (0.006)	-0.013 (0.009)	-0.007 (0.012)	-0.004 (0.006)
High education	0.008 (0.005)	-0.012 (0.008)	0.000 (0.011)	0.005 (0.006)
Mean	.05	.12	.25	.06
Number of students	5300	5300	5300	5300
Number of schools	730	730	730	730
Number of counties	390	390	390	390
County characteristics	Yes	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

9 Appendix B: Robustness Checks

Table B1: Effect of the share of refugees on native students' on native students' academic attainment excluding California- High School and Beyond

	High school	Post-secondary Education				
	Graduate	Start	Complete	Associate	Bachelor	Graduate
<i>Panel A: 1975 Share (Archives)</i>						
All	-0.002 (0.004)	-0.003 (0.007)	0.028*** (0.010)	0.000 (0.007)	0.024* (0.013)	0.025*** (0.009)
Low education	-0.004 (0.009)	-0.013 (0.019)	0.035 (0.022)	0.011 (0.014)	0.016 (0.018)	-0.003 (0.009)
High education	-0.004 (0.004)	0.003 (0.008)	0.031** (0.013)	-0.002 (0.007)	0.033** (0.017)	0.039*** (0.011)
<i>Panel B: 1980 Share (Census)</i>						
All	-0.003 (0.005)	-0.008 (0.010)	0.006 (0.014)	0.001 (0.005)	0.005 (0.015)	0.004 (0.006)
Low education	-0.010 (0.014)	-0.041*** (0.015)	0.018 (0.021)	-0.001 (0.016)	0.012 (0.011)	-0.002 (0.010)
High education	-0.001 (0.005)	0.008 (0.008)	0.005 (0.016)	0.002 (0.008)	0.007 (0.021)	0.010 (0.009)
Mean	.92	.88	.44	.07	.34	.14
Number of students	4710	4070	4070	4070	4070	4070
Number of schools	670	650	650	650	650	650
Number of counties	340	330	330	330	330	330

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table B2: Effect of the share of refugees on native students' on native students' academic attainment excluding counties with no refugees - High School and Beyond

	High school	Post-secondary Education				
	Graduate	Start	Complete	Associate	Bachelor	Graduate
<i>Panel A: 1975 Share (Archives)</i>						
All	-0.001 (0.004)	-0.005 (0.007)	0.024** (0.010)	-0.002 (0.007)	0.028** (0.011)	0.024*** (0.009)
Low education	-0.002 (0.008)	-0.019 (0.019)	0.012 (0.021)	0.008 (0.012)	0.014 (0.020)	-0.003 (0.010)
High education	-0.001 (0.004)	0.002 (0.007)	0.034*** (0.011)	-0.005 (0.006)	0.039*** (0.014)	0.038*** (0.010)
<i>Panel B: 1980 Share (Census)</i>						
All	0.000 (0.006)	-0.028*** (0.009)	0.023 (0.015)	-0.004 (0.007)	0.027* (0.015)	0.009 (0.007)
Low education	-0.003 (0.010)	-0.061*** (0.014)	0.011 (0.018)	0.004 (0.009)	0.003 (0.017)	-0.010 (0.008)
High education	0.003 (0.006)	-0.008 (0.012)	0.032 (0.020)	-0.010 (0.008)	0.047** (0.019)	0.022** (0.010)
Mean	.91	.87	.46	.07	.35	.14
Number of students	4320	3690	3690	3690	3690	3690
Number of schools	630	610	610	610	610	610
Number of counties	370	360	360	360	360	360

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

Table B3: Effect of the share of refugees on native students' on native students' academic attainment by source of refugee information - High School and Beyond

	High school	Post-secondary Education				
	Graduate	Start	Graduate	Associate	Bachelor	Graduate
<i>Panel A: All</i>						
All	-0.003 (0.004)	-0.004 (0.007)	0.020* (0.011)	0.000 (0.007)	0.023* (0.013)	0.025*** (0.009)
0-18 years old	-0.004 (0.004)	-0.003 (0.008)	0.023** (0.011)	-0.001 (0.007)	0.025** (0.013)	0.026*** (0.009)
6-18 years old	-0.003 (0.004)	-0.003 (0.007)	0.024** (0.011)	-0.001 (0.006)	0.028** (0.012)	0.028*** (0.009)
8-12 years old	-0.002 (0.004)	-0.001 (0.008)	0.024** (0.012)	-0.002 (0.006)	0.028** (0.013)	0.025** (0.010)
<i>Panel B: Low parental education</i>						
All	-0.005 (0.008)	-0.016 (0.018)	0.015 (0.021)	0.013 (0.014)	0.014 (0.019)	0.000 (0.009)
0-18 years old	-0.004 (0.009)	-0.017 (0.018)	0.008 (0.019)	0.010 (0.013)	0.010 (0.017)	-0.002 (0.009)
6-18 years old	-0.004 (0.009)	-0.016 (0.017)	0.011 (0.019)	0.008 (0.012)	0.019 (0.018)	0.001 (0.009)
8-12 years old	-0.000 (0.009)	-0.014 (0.016)	0.013 (0.018)	0.007 (0.011)	0.020 (0.018)	0.001 (0.009)
<i>Panel C: High parental education</i>						
All	-0.004 (0.004)	0.003 (0.008)	0.029** (0.014)	-0.003 (0.007)	0.033** (0.016)	0.039*** (0.010)
0-18 years old	-0.004 (0.004)	0.006 (0.008)	0.036*** (0.013)	-0.003 (0.007)	0.038** (0.016)	0.042*** (0.011)
6-18 years old	-0.003 (0.004)	0.006 (0.008)	0.037*** (0.013)	-0.003 (0.007)	0.039** (0.016)	0.043*** (0.011)
8-12 years old	-0.002 (0.004)	0.008 (0.009)	0.038*** (0.014)	-0.004 (0.007)	0.041** (0.017)	0.041*** (0.012)
County characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Student characteristics	Yes	Yes	Yes	Yes	Yes	Yes
School characteristics	Yes	Yes	Yes	Yes	Yes	Yes

*** Significant at the 1 percent level, ** Significant at the 5 percent level, and * Significant at the 10 percent level.

Note: Standard Errors Clustered at the county level in parentheses.

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Longitudinal Study of 1980 Sophomores.

10 Appendix C: Indochinese Refugee' Characteristics at Arrival

Southeast Asian refugees were, on average, younger than the general U.S. population at arrival. For example, they had a median age of 20 while the U.S. median was close to 29; moreover, 45.9 percent of Indochinese refugees were under the age of 17 while this proportion was close to 25 percent in the U.S. population (Report to Congress, 1975). This is the result of the large number of children per refugee family. For instance, over a third of Vietnamese refugee families had more than six members (Haines, 1985).

Indochinese refugees that reached the U.S. were highly qualified. The statistics from the Task Force Report to the Congress in 1975 suggests that over 70 percent of households heads speak some English and that 36.7 percent speak it well. The report also states that 27.4 percent of household heads had a college degree and 19.5 percent of all refugees over 18 had a university degree or higher. Looking at their characteristics in the Census of 1980 shows a similar picture: 36 percent of refugees from Vietnam, Cambodia, and Laos, have at least some college education. This is very similar to the share of natives, aged 18 to 65, with some college close to 39 percent at the time. Nevertheless, there is a large share of refugees who didn't complete high school. On average, 37 percent of refugees dropped out of high school and 19 percent completed it as opposed to natives where the shares are 25 percent and 36 percent respectively.

However, there was significant variance across countries; for instance, Haines (1985) reports that 14 percent of Vietnamese refugees had college degrees while only 7 percent of Laotian refugees had the same level of education. Moreover, refugees' education levels varies across year of immigration. Specifically, given the nature of the evacuation process, the share of highly qualified refugees from urban areas and professional backgrounds was higher in the first wave than over the following years (Hung, 1985; Refugee Act 1975).

Regarding employment history, over two thirds of Indochinese refugees used to work in white-collar occupations before migrating while only about half of the population in the U.S. worked

in the same type of jobs at that time (Haines, 1985). Moreover, over 30 percent of Vietnamese refugees worked in professional and technical occupations while the share of workers in the same sectors was 15 percent for the U.S. general population.¹⁵

The evidence, therefore, suggests that even though Southeast Asian refugees were exposed to war, which usually reduces educational attainment and in general human capital accumulation, the group that reached the U.S., at least in the first wave, was highly qualified relative to their counterparts that stayed in Vietnam, Laos and Cambodia.

Regarding the characteristics of refugee children. Table C2 shows that, on average, refugee children were younger than natives in the same age groups. The table also shows that refugee children attended schools at a similar rate as natives. Moreover, those who were attending school were less likely to attend private and Catholic schools than their native counterparts. Finally, the last row shows that refugees were more likely to have completed no schooling.

To better understand how Indochinese refugee children (age 5–18 in 1980) could have affected native students, it is useful to see their educational attainment and labor market characteristics twenty five years after their arrival. Table C3 shows that 50 percent of Indochinese refugees have completed more than college while only 35 percent of natives in the same age group have that education level. This large increase in their share of students with more than college education comes mainly from high-school and college graduates as their rate of high school dropouts is only 2 percentage points higher than the ones from natives. This suggest as scenario where refugees, and the federal programs that incentivized them to attend college, may have pushed native students to attend college and further their education.

¹⁵The Task Force Report indicates that 7.2 percent of household heads were medical professionals and 24 percent worked in professional, technical, and managerial occupations.

Table C1: Education Level of Adult Indochinese Refugees (1980)

	Refugees		Natives	
	Mean	SD	Mean	SD
No schooling	0.07	0.26	0.00	0.06
High school dropout	0.37	0.48	0.25	0.44
High school graduate	0.19	0.39	0.36	0.48
Some college or more	0.37	0.48	0.38	0.48
Observations	8,079		6,441,677	

Source: 1980 Decennial Census.

Table C2: Native and Refugee Children Characteristics in 1980

	Refugees		Natives	
	Mean	S.D.	Mean	S.D.
Age	11.94	3.73	12.29	3.73
School attendance	0.92	0.27	0.94	0.24
Private School	0.07	0.25	0.11	0.31
Catholic School	0.06	0.24	0.09	0.28
No Schooling Completed	0.02	0.14	0.005	0.068
Observations	5025		2342561	

Note: The sample is restricted to individuals who were 5-18 years old in 1980.

Source: 1980 Decennial Census.

Table C3: Characteristics of Native and Refugee Children as Adults in 2000

	Refugees		Natives	
	Mean	S.D.	Mean	S.D.
Age	31.53	4.13	31.85	4.03
High School Dropout	0.14	0.34	0.12	0.32
High School Graduate	0.17	0.37	0.28	0.45
Some College	0.20	0.40	0.25	0.43
College or more	0.494	0.500	0.355	0.478
Observations	6313		2314373	

Note: The sample is restricted to individuals who were 5-18 years old in 1980.

Source: 2000 Decennial Census.