International Students and Political Preferences

by

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International Students and Political Preferences

Koç University

Graduate School of Social Sciences and Humanities

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ABSTRACT

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This thesis explores the political impact of international students in the United States in presidential and Senate elections using county-level data from 2000 to 2020. To capture the causality, this thesis uses the Instrumental Variable (IV) approach and exploits the past distribution of international students across U.S. counties by countries of origin as a driver of future migration flows. The primary contribution of this thesis is to demonstrate that an increase in international students decreases the vote share of the Republican Party. Potential underlying mechanisms for this negative relationship are analyzed by referring to the political discourses about international students. The findings also suggest that the political impact of international students is heterogeneous across counties depending on the predominance of Republican voters, and is not contingent upon the academic level.

ÖZETÇE

Uluslararası Öğrenciler ve Politik Tercihler

Özlem Toplar

Ekonomi, Yüksek Lisans

15 Eylül 2023

Bu tez, 2000 ve 2020 yılları arasında ilçe düzeyinde veri kullanarak uluslararası öğrencilerin Amerika Birleşik Devletleri'ndeki başkanlık ve Senato seçimlerine olan politik etkisini araştırmaktadır. Nedenselliği yakalamak amacıyla, bu tez Araç Değişkeni (AD) metodunu kullanmakta ve ABD'deki uluslararası öğrencilerin geçmişte ABD ilçelerine orijin ülkelerine göre nasıl dağılmış olduğu bilgisini, gelecekteki öğrenci akışlarının bir belirleyicisi olarak kullanmaktadır. Bu tezin ana bulgusu, uluslararası öğrenci sayısındaki artışın Cumhuriyetçi Parti'nin aldığı oy oranını azalttığını ortaya koymaktadır. Bu negatif ilişkinin olası sebepleri, uluslararası öğrenciler hakkındaki siyasi söylemlere atıfta bulunularak analiz edilmektedir. Bulgular ayrıca, uluslararası öğrencilerin politik etkisinin Cumhuriyetçi seçmenlerin sayıca üstünlüğüne bağlı olarak ilçeler arasında heterojen olduğunu ve öğrencinin akademik seviyesiyle ilintili olmadığını göstermektedir.

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ABBREVIATIONS

IV	Instrumental Variable
US	United States
NES	National Election Studies
FPOE	Freedom Party of Austria
ACE	American Council on Education
IPEDS	Integrated Postsecondary Education Data System
FIPS	Federal Information Processing System
ACS	American Community Survey

Chapter 1:
INTRODUCTION

Today, immigration is one of the most prevalent political issues in Europe and the United States. In many European countries and the United States, immigration policies of different parties are significant determinants when it comes to voters' preferences and electoral success of the parties. The issue of immigration constituted an essential dimension of the 2016 U.S. presidential elections, the Brexit referendum, and the recent political elections in Germany and Italy. Electoral victories of anti-immigration parties mark these political milestones. The pandemic also contributed to the prevalence of immigration in the political agenda by cultivating anti-immigrant sentiments. Border closures, nationalistic backlashes, and racial animosity have been familiar concepts for most voters in many countries.

Among immigrants, the number of international students has been increasing dramatically in recent decades. Today is marked by a global race for talent, as intensified interconnectedness amplified the importance of international students' participation in higher education. However, the outcomes of this race are highly heterogeneous. Although there are many potential destinations, not all of them are appealing in terms of professional and social opportunities. The extent to which they welcome foreigners and their accessibility differ from country to country. Apart from government policies, firms and institutions of higher education are integral to admission results and improving skills of potential migrants. Many factors shape the destination decision; however, it is clear that some countries are at the forefront of the menu of destinations. Undoubtedly, the United States is among those destinations, as it has a significant number of colleges and universities, and the most highly ranked colleges and universities are concentrated in the United States. As a reflection of these conditions, the United States has been hosting the largest population of international students over decades. Moreover, total enrolment of international students has increased noticeably over time, from 305,000 in 1980 to over 1,000,000 in 2017 (Bound et al., 2021). Although international students constitute a significant portion of immigrants, they are not studied much compared with the other major categories of migrants. In this context, this thesis is novel in the sense that it aims to tackle the connection between international students and vote share obtained by the

Republican Party in presidential elections and Senate elections in the period from 2000 to 2020.

The substantial student immigration to the United States has played a crucial role in transforming the U.S. economy and society. Firstly, student immigration can have economic impacts. Substantial increases in international student inflows have consequences not only for the education sector but also for job opportunities in the labor market and native workers' productivity (Demirci, 2020). Approximately 20 percent of the tuition revenue of significant research institutions can be attributed to international students (Larmer, 2019). Furthermore, studying in the United States may facilitate the transition of international students to high-skilled workers in the U.S. labor market (Bound et al., 2015; Demirci, 2019). These transitions mainly occur in high-skill sectors, such as health care and information technology (Bound et al., 2014). Regarding technology entrepreneurship, student migrants again prove to be significant actors (Saxenian, 2000; Wadhwa et al., 2007). Secondly, immigration can have cultural impacts. These impacts can be attributed to the difference between natives and immigrants in terms of culture, religion, language, race, and social norms. Immigrants influence the native people's culture, social norms, and sense of security. Although these economic and cultural impacts are very much linked, at least in principle, we can separate them. Through these two main channels, immigration can also influence political outcomes. By voting, U.S. citizens can express how they assess the material and psychological costs and benefits of hosting more foreign students. Regarding immigration, the Republican Party is affiliated with a less inclusionary stance and more restrictive policies than the Democrat Party. In this context, most supporters of the Republican Party perceive immigrants as a net cost to society (Alesina & Tabellini, 2021).

To understand the causal relationship between international students and the Republican vote share, I use shift-share instrumental variables (IV) approach in this thesis. I instrument the population of international students observed in the 2000-2020 period with the past distribution (in particular, the one in 1990) of international students from each country of origin across U.S. counties in the 2000-2020 period. Adopting this IV approach, including numerous fixed effects, and incorporating economic and demographic control variables at the commuting zone level, I find a negative and significant impact of international students on the Republican vote share in presidential elections and Senate elections. This result can be explained by the U.S. voters' favorable perception of international students on average.

In addition, I conduct various robustness checks. As a result of these, I find that my results are robust when the control variables are not included, the Democrat vote share instead of the Republican vote share is used as the dependent variable and the regressions are not weighted by county populations. When presidential elections and Senate elections are pooled, I include election-fixed effects and find significant results again. Besides robustness checks, I conduct heterogeneity analysis and explore whether the political impacts of undergraduate and graduate students differ. I find that the results are still significant for both undergraduate and graduate students. In another analysis, I investigate if the political effects of international students are contingent upon the political leaning of a county, which I infer based on the past electoral results. I find that in predominantly Republican counties, the results are not significant. In predominantly Democrat counties, the results are significant only for presidential elections. Finally, in the remaining counties that are in-between, the estimated relationship between international students and voting is significant for both types of elections analyzed.

Considering that voting is a manifestation of how natives perceive immigrants, the findings will contribute to the existing literature by untangling the forces at play regarding the interaction between native-born citizens and international students in the United States. Furthermore, since international students are classified as high-skilled immigrants, I expect my findings to enrich the literature on how natives perceive high-skilled immigrants.

The rest of this thesis is organized as follows. Section II briefly reviews the existing literature on the relationship between immigration and political preferences. Section III introduces the institutional background for international student mobility and election procedures. Section IV describes the data, and section V presents the methodology. Section VI demonstrates the results and section VII discusses the findings. Finally, section VIII concludes.

Chapter 2:
LITERATURE REVIEW

My thesis relates to both theoretical and empirical research in the economics literature that investigates the impact of immigration on political preferences. Some papers examine the interaction between immigration and voting by focusing on specific policies. Razin, Sadka, and Suwankiri (2011) study how voters collectively decide immigration and redistribution policies. Their findings suggest that in democratic countries, immigration and redistribution policies are produced so that natives respond to the flow of low-skilled immigrants by restricting redistribution, consistent with their fear of net transfers to immigrants. In line with this attitude, when restrictive immigration policies are implemented for low-skilled immigrants, natives tend to favor the idea of redistribution. The authors formulate a theoretical model which predicts how natives' preferences for more or fewer immigrants differ by the skill composition of natives, as well as the extent to which the country provides redistribution. Conconi et al. (2020) and Facchini and Steinhardt (2011) empirically explore how U.S. politicians' votes on immigration-related topics are contingent upon the characteristics of their regions.

Determinants of the political preferences of citizens regarding immigration constitute another line of research. Specifically, there is a vast literature on whether citizens' approaches towards immigrants depend on the skill composition of citizens. Scheve and Slaughter (2001) analyze the sources of attitudes toward immigrants based on the 1992 National Election Studies (NES) survey results. Their findings suggest that high-skilled natives tend to embrace anti-immigrant sentiments less when compared to low-skilled respondents. Hanson, Scheve, and Slaughter (2007) adopt a broader view by also taking into consideration the effect of the public finance component on U.S. natives' approach towards immigration. Their paper demonstrates that the decrease in anti-immigrant sentiment, as correlated with the increase in skill level, is slighter in states classified as large welfare states. Card, Dustmann, and Preston (2012) show that while perceived economic benefits associated with immigrants depend on the skill composition of the natives, the perception of natives on how immigrants affect local culture forms the backbone of natives' political preferences.

From a broader perspective, some papers explore the relationship between perception of immigrants and economic and cultural characteristics of the host country. Mayda (2006) and Facchini and Mayda (2009) exploit the labor market and welfare

channels as drivers of public perception of immigrants across countries. Alesina, and Tabellini (2022) investigate the ways through which immigrants affect electoral outcomes in host countries and the reasons behind this influence. Drawing on evidence from various papers, they discuss that anti-immigrant sentiments can be explained by cultural and social concerns to a great extent, in addition to economic reasons. Turning to international students, Helms and Spreitzer (2021) collect survey data from U.S. voters regarding their perceptions of and stances towards them. The survey results reveal a complicated and nuanced picture of public opinion on international students, their positive intellectual and economic influence, their long-term role in U.S. innovation, and the necessity of making amendments to existing policy narratives.

There is some recent research that investigates the interaction between the inflow of immigrants and the rise of electoral support for right-wing parties in Europe. Barone et al. (2016) explore the impact of immigration on electoral outcomes in Italy for the 2001, 2006, and 2008 national elections. They discover that there is a positive correlation between the inflow of immigrants in a municipality and the vote share of the right-wing parties, which adopts a more restrictive stance towards immigration, compared to the center-left parties. Likewise, Halla et al. (2017) analyze how immigrant flows in Austria contribute to an increase in the vote share for a far-right-wing party, namely the Freedom Party of Austria. Their estimation indicates a positive and considerable impact at the neighborhood level. In addition, Edo et al. (2019) look at the impact of immigration on the electoral support for the far-right candidates in France. They find that immigration leads to an increase in electoral support for far-right candidates, and low-skilled immigrants from non-Western countries account for this relationship. In parallel, Steinmayr (2021) investigates whether exposure to refugees increases electoral support for the far-right Freedom Party of Austria (FPOE). He finds that in neighbourhoods hosting refugees, the electoral support for the FPOE decreases in state elections. He attributes this finding to the optimism of voters regarding the possibility of refugees' integration.

To my knowledge, there are four papers that study the relationship between immigration and electoral outcomes in the U.S directly. First one of them examines the U.S. state of Georgia and finds a negative correlation between the portion of total unauthorized immigrants and the vote share of the Democrat Party (Baerg et al., 2018). The second paper analyses the impact of the immigration on electoral outcomes in California in the period 2010-2018 and shows that immigration reduces the electoral

support for the candidates affiliated with the Democratic Party (Bargain et al., 2022). This paper attributes this finding to redistribution policies, public good policies and crime. Another paper investigates if immigration causes a shift towards electoral support for the anti-immigration presidential candidate from 2012 to 2016 by examining precinct-level data in the states Florida, Georgia, Michigan, Nevada, Ohio, Pennsylvania, and Washington (Hill et al., 2019). It finds that the inflow of Hispanic immigrants does not increase the electoral support for Trump relative to past Republican candidates. The final paper takes into consideration the U.S. elections in the whole country (Mayda et al., 2022). Their main finding is that an increase in the flow of high-skilled immigrants reduces the share of votes going to the Republican Party. Consistently, an increase in the number of low-skilled immigrants contributes to an increase in the vote share of the Republican Party.

The nuanced findings of Mayda et al. suggest that the effect of immigration on electoral outcomes can be explained mainly by the skill composition of immigrants. Contrary to the negative impact of immigration on Republican Party votes, research reveals that the correlation between immigration and right-wing Party votes in Europe is positive (See Otto and Steinhardt 2014; Barone et al. 2016; and Halla et al. 2017). Their explanation for the puzzling opposite trends in Europe and the United States is consistent with their main finding: Immigrants in European countries studied above (Italy, Austria, Germany and France) are, on average less-skilled compared to the immigrants in the U.S. In addition, some of the studies that target European countries focus on certain categories of immigrants, such as refugees, who are on average less-skilled than economic immigrants or international students. Mayda et al. also demonstrate that in areas where low-skilled immigrants are concentrated, the Republican Party, associated with more restrictive immigration policies, is likely to get more votes.

My thesis is related to research mentioned so far as it investigates the relationship between immigration and political outcomes. However, I aim to focus on a more specific group of immigrants, namely international students, while analyzing the electoral outcomes in the presidential elections and Senate elections in all counties in the United States from 2000 to 2020 without focusing on a specific policy. Furthermore, my thesis will present complementary evidence to the nuanced findings of the issue brief by American Council on Education (ACE) mentioned above, which reports survey data on the stances of the U.S. voters towards international students (Helms and Spreitzer, 2021).

Chapter 3:

INSTITUTIONAL BACKGROUND

This section presents a brief overview of the trends in the immigration of international students to the United States to motivate the analysis of the relationship between international students and U.S. electoral outcomes. The section first zooms into different aspects of the dramatic increase in international students. In addition, it provides information on the presidential and Senate elections' voting procedures and the past electoral results to give a background of U.S. politics.

3.1 Trends in international student inflows

The number of international students enrolled in U.S. universities and colleges has increased in an unprecedented manner in the last decade: total enrollment of international students increased from 400,164 in 1990 to 850,946 in 2020 (IPEDS). In parallel, the share of international students among all students in the United States increased from 2.8 to 4.3 percent over the same period. Specifically, international students' enrollment in undergraduate programs rose from 225,322 in 1990 to 469,414 in 2020, while the total enrollment of those in graduate programs increased from 174,842 to 381,656 over the same period, as illustrated in Figure 1.

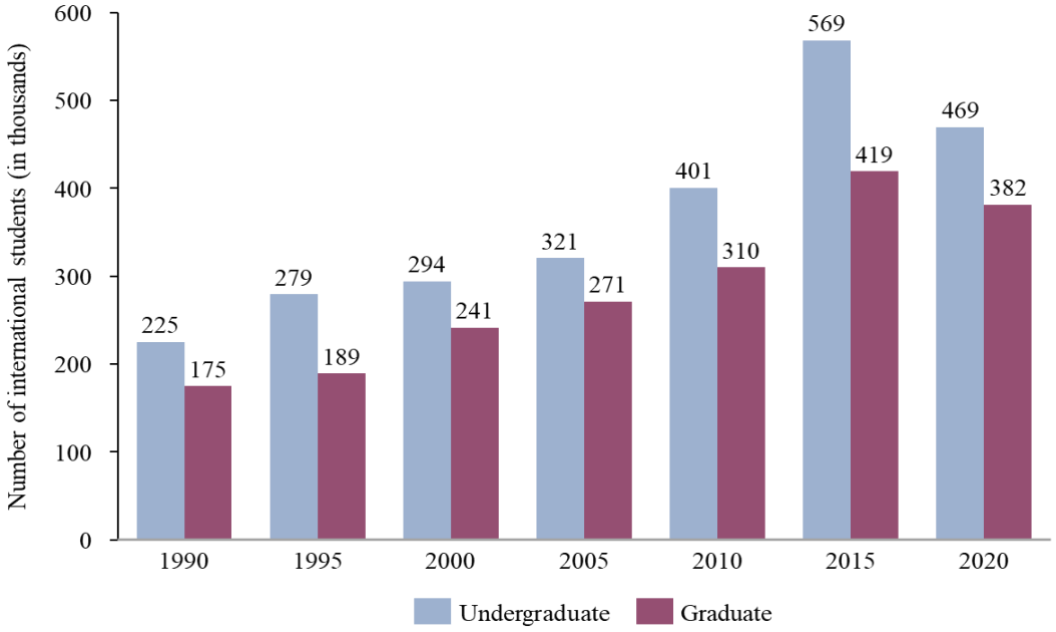

Figure 3.1:Number of International Students by Academic Level

Source: IPEDS Fall Enrollment (1990-2020).
Notes: Graduate-level enrollment covers master's, doctorate, and first-professional programs. The vertical axis shows thousands of international students enrolled in undergraduate and graduate-level programs.

Although trajectories of undergraduate and graduate enrollment are very similar, as shown in Figure 3.1, the increase in undergraduate and graduate enrollment can be attributed to different reasons. Among the origin countries of international students in the United States, newly emerging economies often contribute to graduate enrollment, especially in doctorate programs, since graduate programs provide financial support by offering research and teaching assistantships and scholarships (Bound et al., 2009). On the other hand, the rise in undergraduate enrollment is driven by the economic progress in the origin countries, which increases the number of international students who can afford to pay for the tuition fees of the undergraduate programs. China is an example of this pattern, as the enrollment of Chinese students in doctorate programs expanded in the 1980s and 1990s, whereas the increase in undergraduate enrollment occurred in the 2000s (Bound et al., 2021). Currently, China is the primary origin country for both graduate and undergraduate enrollment. Other prominent origin countries are India, South Korea, and Saudi Arabia.

Table 3.1 demonstrates the graduate and undergraduate enrollment trajectories of students from China, India, South Korea and Saudi Arabia from 2000 to 2020. These countries are the top source countries that are characterized by crucial student inflows; thus, it is informative to demonstrate the trends in student inflows from these origin countries. The number of students from China increased dramatically from 56,281 in 2000 to 279,436 in 2017, while the number of those from India increased from 52,056 to 118,997, and those from Saudi Arabia increased from 4,527 to 38,668 (Open Doors, 2022). These sharp increases explain a substantial part of the international student enrollment growth in the United States. In 2020 students from China constituted 34.7 percent of all international students in the United States. This value corresponds to 18.3 percent for students from India, 4.3 percent for students from South Korea, and 2.4 percent for students from Saudi Arabia in 2020.

Another phenomenon worth addressing is the reversal of the increasing trend of international student inflows in 2020, as illustrated in Figure 3.1 and Table 3.1. This reversal coincides with the outbreak of the COVID-19 pandemic as well as the end of the presidency of Donald Trump following his electoral victory in the presidential election of 2016. During the presidency of Trump, restrictive migration measures shaped by international relations with different countries and characterized by an enhanced sense of securitization were adopted (Streitwieser et al., 2020). In particular, China, Muslim countries, and countries that were approached with racist xenophobia became the target

of those measures (Buckner et al., 2022). Within this political climate, the pandemic erupted, substantially decreasing international students' inflow to the United States.

Table 3.1: International Students Enrolled in U.S. Higher Education Institutions by Origin Country

Year	2000	2010	2017	2020
Panel A: Undergraduate students by origin country				
China	8,252	56,976	148,593	125,616
India	12,259	14,004	23,346	23,734
South Korea	18,781	37,944	27,638	17,743
Saudi Arabia	2,833	10,946	27,646	11,738
Total undergraduates	260,848	291,439	442,746	359,787
Panel B: Graduate students by origin country				
China	48,029	76,830	130,843	118,859
India	39,797	63,624	95,651	68,869
South Korea	21,568	22,486	15,572	14,238
Saudi Arabia	1,694	4,604	11,022	7,310
Total graduates	244,398	296,574	382,953	329,271
Panel C: Total students by origin country				
China	56,281	133,806	279,436	244,475
India	52,056	77,628	118,997	92,603
South Korea	40,349	60,430	43,210	31,981
Saudi Arabia	4,527	15,550	38,668	19,048
Total students	505,246	588,013	825,699	689,058

Source: Open Doors Academic Level and Places of Origin (2022*).*
Notes: This table demonstrates the number of international students from each origin country and the total number of international students at the undergraduate and graduate levels separately and together. Non-degree and OPT programs are not included.

3.2 Election procedures

Voting procedures in the United States differ across election types. This thesis analyzes the electoral results of presidential and Senate elections (house elections are not analyzed due to data limitations); thus, it is essential to give background information on the processes of these elections.

Presidential elections take place every four years. The two primary parties, the Democrats and the Republicans decide on their presidential candidates to run in the presidential elections. Then, the candidate who wins decides on their vice-presidential candidate, who is expected to contribute to the campaign. Both presidential candidates conduct large-scale election campaigns, travel countrywide, and advertise their policies and ideas. It is important to highlight that on election day, the public does not directly vote for the presidential candidate, but a process called the Electoral College is conducted. According to this system, each state has electors whose number is equal to the number of senators and representatives. Those electors chosen by the public directly vote for the presidential candidate as consistent with the electoral preference of the majority of a state. In this context, it is important to differentiate between the electoral votes and popular votes. While the former denotes the votes of the electors, the latter denotes the votes of public. The winning party is usually the same according to both electoral and public votes, although it does not have to be the case necessarily. For instance, in 2000 and 2016, the Republican candidates won the presidency despite having fewer public votes than the Democrat candidates. In my analysis, I analyze popular votes instead of electoral votes. Table 3.2 summarizes presidential election results in the analysis period from 2000 to 2020.

Table 3.2: U.S. Presidential Election Results

Year	Candidates	Political Party	Electoral votes	Popular votes	Popular vote percentage
2000	George W. Bush	Republican	271	50,456,002	47.9
	Al Gore	Democratic	266	50,999,897	48.4
2004	George W. Bush	Republican	286	62,028,285	50.7
	John Kerry	Democratic	251	59,028,109	48.3
2008	John McCain	Republican	173	59,934,000	45.7
	Barack Obama	Democratic	365	69,456,000	52.9
2012	Mitt Romney	Republican	206	60,589,084	47.1
	Barack Obama	Democratic	332	65,446,032	50.9
2016	Donald Trump	Republican	304	62,979,636	46.0
	Hillary Clinton	Democratic	227	65,844,610	48.1
2020	Donald Trump	Republican	232	74,216,154	46.9
	Joe Biden	Democratic	306	81,268,924	51.3

Source: Britannica

Turning to the Senate elections, senators are the ones who assess and interrogate all proposals made by the representatives and the president before they are voted on whether to legislate or not. Senate elections take place every two years. However, elections are staggered, meaning that the 100 seats in the Senate have been allocated into three classes since May 1789, and elections are arranged accordingly in such a way that each class is subject to the regular fix-term elections. More specifically, elections are run every two years for the re-election of a third of the senators and accordingly each senator stays in the Senate for six-year terms. Since the classes of senators are fixed and election time of senators in each class is predetermined, the timing of the Senate elections does not depend on migration flows or any other current conditions. The entire state, as if each state is one congressional district, selects two senators to represent each state, and this number is not contingent upon its population. Since each state elects two senators from two different classes, the whole state attends two out of three elections each six year and elects one senator per election. However, some state laws may allow the election of two senators at the same time, as for instance it was the case in Senate elections in Georgia in 2020. In most of the states, the first past the post-voting system is used; thus, the candidate who gets the most votes is elected.

What is common in these election types is that the public votes are a manifestation of the voters' values, political opinions, and stances towards major political issues. In this sense, a vote going to the candidate affiliated with the Republican Party implies that the voter's opinions regarding major political issues are aligned with the Republican Party's proposed policies and ideals. Immigration is among the most pressing issues polarizing the two main parties. According to the research report by Hammer and Kafura (2019), 78 percent of Republicans perceive immigration as a crucial threat, while only 19 percent of Democrats think so. Furthermore, Republicans are much more likely to defend strict policy measures towards immigrants, such as arresting and deporting more immigrants (82 percent compared to 29 percent). In this context, this paper associates voting for the Republican Party with anti-immigrant sentiment. Through this lens, I explore the causal relationship between international students, an important subset of immigrants, and the Republican vote share.

Chapter 4:
DATA

4.1 Data Sources

In this section, I describe the data and relevant notation, and I present how I construct the key variables. For each county *i* and year *t*, the adult population Pop_{it} is the number of native and foreign-born adult residents over 18 years old. I define international students among them as IS_{it}, which refers to non-resident international students enrolled in higher education institutions in the United States. To be more specific, it covers international students enrolled in both undergraduate and graduate-level programs at U.S. universities and colleges.

I derive the international student data from the Fall Enrolment Surveys of the Integrated Postsecondary Education Data System (IPEDS). The enrolment data provide information on race/ethnicity, gender, attendance status, and level of study of all the students enrolled in academic programs in which students seek credit when taking their courses and achieve a postsecondary degree, diploma, or certificate upon completion. These awards range from less than one-year postsecondary certificates to doctoral degrees. As the vast majority of U.S. postsecondary institutions provide their students with a recognized postsecondary credential upon satisfying the course credit requirement,

the sample covers almost all higher education institutions. I also use data from the Institutional Characteristics Surveys of the IPEDS. Institutional characteristics in these data consist of directory information, including the Federal Information Processing System (FIPS) codes of the counties where the surveyed institutions are located. The county FIPS codes of the institutions' locations allow me to merge the student data with the election data at the county level.

I follow Mayda et al. (2022) when constructing the control variables. They obtain data from the U.S. Census for the years 1990 and 2000, as well as from the American Community Survey (ACS) for the years 2006, 2008, 2010, 2012, 2014, and 2016. Mayda et al. (2022) linearly interpolate the values of the control variables for the missing years. I adopt the same method to infer the control variables for 2002, 2004, 2018 and 2020. The Census and ACS data are available at the commuting zone level. I used a geographical crosswalk that maps U.S. counties to commuting zones to merge these data with the international student data at the county level. Since commuting zones are larger geographical units consisting of counties, each county is in the subset of a unique commuting zone. Using this relation, I applied the control variables to all counties in the commuting zone subset.

To construct the instrument, I need the past distribution of international students by country of origin across counties in the baseline year of 1990, and I use the U.S. Census to obtain this information. In addition, I need the total number of international students from each origin country for all years covered in the sample period, and I derive these data from Open Doors. To create the initial shares, I use the U.S. Census, since the country of origin information for international students is not available in student data for the baseline year of 1990. The 1990 Census provides information on the number of naturalized citizen and non-citizen immigrants broken down by their countries of origin and education levels. More specifically, I treat the group of immigrants with a bachelor's or higher degree as a proxy for international students. In other words, in constructing the baseline shares for students by country of origin for each county, I use the distribution of this group of immigrants, which I refer to as high-skilled immigrants below.

However, the Census data are at the commuting zone level. To apply the commuting zone level information to counties, I first compute the share of high-skilled immigrant among the adult population at the commuting zone level. Then, I allocate these shares to the counties in the commuting zone as proportionately with the county population of international students. In other words, to obtain county-level shares, I multiply the

commuting zone level shares by the ratio of the international student population of a county to that of the relevant commuting zone. For the period 2000-2020, the country of origin data are based on Open Doors, which gives information on the origin places of international students in the whole U.S. separately for undergraduate and graduate levels. Between 1990 and 2000, there are gaps in the Open Doors data; thus, the analysis starts from 2000.

The election data are based on CQ Press Library (2020) and include all presidential and Senate elections from 2000 to 2020. Since the data on house elections are unavailable at the county level, I cannot incorporate house elections into my thesis. My primary dependent variable in this analysis is the share of votes received by the candidate affiliated with the Republican Party among total votes:

$$r_{ite} = \frac{Republican\_Votes_{ite}}{Votes_{ite}} \quad (1)$$

where $Republican\_Votes_{ite}$ represents the number of votes going to the candidate affiliated with the Republican Party, and $Votes_{ite}$ is the total votes in county *i*, year *t*, and election type *e*.

4.2 Summary Statistics

When I combine the election data with international students' data, Census data and ACS data, the final sample consists of 16,049 county-year observations across presidential and Senate elections. This sample covers 11 years corresponding to all even-numbered years from 2000 to 2020, given that Senate elections are held once every two years in even-numbered years, and more often than presidential elections. The sample also consists of only counties that have at least one postsecondary education institution over the 2000-2020 period. In Panel A of Table 4.1, I present the summary statistics of the share of votes going to the candidate affiliated with the Republican and Democrat parties in presidential and Senate elections. The population-weighted averages, as shown in Table 4.1, demonstrate that, in counties consisting of higher education institutions, the Republican Party candidates received 44 percent of the total votes on average. In contrast, the Democrat Party candidates received 52 percent. Third-party and other candidates received the remaining votes. Between 2000 and 2020, the share of international students in the county adult population was 0.0031 on average. The standard deviation for this variable is 0.0088. Furthermore, the minimum value of this share equals to 0, whereas the maximum value is 0.329.

Panel C of Table 4.1 gives the descriptive statistics for the economic and demographic control variables. As consistent with the literature on what determines the voting behavior in the United States (see DellaVigna and Kaplan 2007), I incorporate the labor market participation rate, the share of low-skilled people, which is defined as people without high school degrees among all natives, the share of rural citizens, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. Since the Census data do not provide these economic and demographic variables at the county level, following Mayda et al. (2022), I construct these variables at the commuting zone level. Then, I implement them to relevant counties, as described in this section previously.

Table 4.1:Summary Statistics

	Observations	Mean	Standard deviation	Min	Max
Panel A: Election data					
Presidential and Senate elections					
Republican vote share	16,049	0.439	0.168	0	1
Democrat vote share	16,049	0.519	0.159	0	0.931
Presidential election					
Republican vote share	7,266	0.451	0.145	0.081	0.933
Democrat vote share	7,266	0.523	0.145	0.058	0.915
Senate election					
Republican vote share	8,783	0.429	0.184	0	1
Democrat vote share	8,783	0.516	0.17	0	0.93
Panel B: Student data					
All students	13,314	90,023	155,921	0	797,683
International students	13,314	4,244	8,218	0	48,823
Share of international students	13,314	0.0031	0.0088	0	0.329
Panel C: Demographic data					
County adult population	13,314	165,184	366,738	1,464	8,184,482
Share of low-skilled natives	13,314	0.114	0.044	0	0.421
Share of African-American citizens	13,314	0.123	0.093	0	0.572
Share of rural citizens	13,314	0.554	0.334	0	1
Average income of citizens (in 10,000$)	13,314	2.892	0.568	1.145	5.184
Share of male citizens	13,314	0.482	0.011	0.439	0.568
Unemployment rate	13,314	0.039	0.016	0	0.124
Share of married citizens	13,314	0.511	0.045	0.282	0.702
Labor market participation rate	13,314	0.653	0.047	0.313	0.835

Sources: CQ Library, IPEDS, Mayda et al. (2022), U.S. Census, ACS

Notes: The table presents summary statistics for the main variables that I use in my analysis, and they are all weighted by county adult population. Panel A reports the share of Republican votes among total votes by pooling presidential and Senate elections and separately for each election type. In Panel B, the share of international students is my main explanatory variable, and it refers to the share of international students among the county adult population. In panel C, the average income of citizens is the average yearly total personal income of citizens normalized to 1999 dollars divided by 10.000. Share of rural citizens is the share of people who are classified as living in rural areas based on the Census.

Chapter 5:
METHODOLOGY

This section introduces the empirical specification that I employ to estimate the effect of student migration on Republican Party vote shares. I model the relationship between international students and the vote share of the Republican Party-affiliated candidate r_{ite} in county *i* and year *t* for election type *e* as the following:

$$r_{ite} = \delta_i + \delta_t + \beta_{IS} \frac{IS_{it}}{Pop_{it}} + \beta_X X_{zt} + \varepsilon_{ite} \qquad (2)$$

Here, IS_{it}/Pop_{it} is the share of the international students among the total adult population in county *i* and year *t*. δ_i is the set of county-fixed effects, and they capture non-changing (or slowly) changing characteristics in a county which might drive time-invariant component of the Republican vote share. δ_t is the set of year-fixed effects to capture national year-specific patterns in voting. Furthermore, I incorporate economic and demographic control variables into the equation as these controls are likely to influence the local economic characteristics and labor market, which might affect voting behaviour. These controls, represented by X_{zt} are at the commuting zone level and applied to all counties in commuting zone z. These control variables are the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married people.

The key coefficient of interest is β_{IS}. The OLS estimation, however, is likely to lead to a biased estimate for several reasons. First, unobservable and time-varying county-level characteristics (captured in the error term) may both influence local votes and the share of international students among the county adult population, which might create omitted variable bias. Considering that a remarkable portion of international students aim to stay in the United States after graduation, economic and demographic changes occurring in a county play an essential role in the decision-making process of international students. These changes are also likely to be correlated with citizens' electoral preferences in those counties; thus, they might pave the way for a spurious correlation between the inflow of international students and Republican votes. Second, in addition to the omitted

variable concerns, there might be a reverse causality issue, as the changes in local votes may lead to local policy changes about immigration, which would affect the inflow of international students.

I develop an Instrumental Variable (IV) strategy to alleviate these potential concerns about the OLS estimates. My IV strategy relies on past patterns of international student inflows as the source of variation for the changes observed in international student migration in later period. By doing so, the role of contemporary local economic, political, and demographic conditions, which is likely to influence local electoral outcomes and international student mobility, is eliminated. The critical intuition for the IV is that considering a particular origin country, students from there will likely choose the same universities and subjects, regardless of the time period and current local conditions. This picture is also consistent with the claim of network theory, which suggests that international students' decisions regarding higher education institutions or, more broadly, destination countries for studying are highly affected by the network of individuals from their home countries who provide information about their own experiences and the path that they have pursued (Beech, 2014). These interactions lead to immigration patterns that differ across origin countries but persist for each origin country across years. These patterns are integral to my empirical strategy, which requires the exclusion of university-specific shocks, such as changes in world rankings or changes in institutional characteristics, as well as the exclusion of local economic and political shocks.

In Equation 3, $sh_{US,i,90}$, represents the distribution of the adult population (age 18 and older) in county *i* and $sh_{c,i,90}$, is the proxy for the distribution of international students from origin country *c* in county *i* in 1990. More specifically, $sh_{US,i,90}$, is the share of adults (age 18 and older) living in county *i* as of 1990 among the aggregate adult population in the United States in 1990. Similarly, $sh_{c,i,90}$ is the share of international students from country or country group *c*, living in county *i* as of 1990 among their aggregate population in the United States.[1] In practice, as explained in the Data section, the distribution of high-skilled immigrants across commuting zones in 1990 is used to

[1] The countries of origin of international students are aggregated into 13 countries or country groups as the following: Africa, China, Japan, Korea, India, Rest of Asia, Western Europe, Central&Eastern Europe, Canada, Oceania, Caribbean&Mexico&Central America, South America, Middle East&North Africa. Therefore, the index c in $sh_{c,i,90}$ differs across countries or country groups.

construct $sh_{c,i,90}$, since data on origin countries of international students are not available at the county level. In notation, the initial shares are as the following:

$$sh_{US,i,90} = \frac{Pop_{i,90}}{\sum_i Pop_{i,90}} \quad \text{and} \quad sh_{c,i,90} = \frac{IS_{c,i,90}}{\sum_i IS_{c,i,90}} \text{ for each } c \qquad (3)$$

I compute the predicted size of the adult population in county *i* and year *t*, which is denoted by $\widehat{Pop}_{it}$ in Equation 4, by multiplying the total adult population in the United States in year *t* with the 1990 share of the adult population in county *i*. Besides international student population, I predict the county adult population for the post-1990 years when constructing the instrument. This is necessary, because the county adult populations may change over time due to economic, political and demographic reasons, which might also affect voting behaviour. Interpreting the predicted international students as share of these new populations might not be plausible, since a substantial change in the populations might create endogeneity concerns, and cause overestimation or underestimation of the predicted international student shares.

In parallel, I predict the number of international students in county *i* and year t, which is denoted by $\widehat{IS}_{it}$ in Equation 4, by first multiplying the aggregate population of international students from country of origin *c* in year *t* with the 1990 share of international students by country of origin in county *i* as defined above, and then, summing these multiplications over all countries of origin. The imputed adult (Pop) and international student (IS) population in county *i* and year *t* are obtained as follows:

$$\widehat{Pop}_{it} = sh_{US,i,90} Pop_t \qquad \text{and} \qquad \widehat{IS}_{it} = \sum_c sh_{c,i,90}\, IS_{ct} \qquad (4)$$

The instrument for the share of international students in county *i* is then the ratio of the predicted number of international students to the predicted adult population, represented by $\widehat{IS}_{it}/\widehat{Pop}_{it}$.

This IV method is known as the shift-share instrument. In the economics literature, the shift-share instrument is a prominent and widely used methodology (e.g., Altonji and Card 1991 and Card 2001). It is convenient to use because networks of current immigrants significantly explain the subsequent inflow of immigrants from the same origin country. Furthermore, the plausibility of its exclusion restriction contributes to convenience. In this thesis, the central assumption is that how international students were distributed across counties by country of origin in the baseline year (1990) only predicts subsequent inflows of international students but does not predict local economic and demographic changes that occur during the period of analysis, which starts from the year

2000. Excluding these local economic and demographic changes reduces the omitted variable concerns.

Chapter 6:
RESULTS

6.1 Main Results

This section summarizes the main results of this paper. Table 6.2 displays both the OLS estimates of the coefficient β_{IS} from equation (2) (columns 1,3 and 5), and the 2SLS estimates based on the specification that takes the imputed international student shares as instruments (columns 2,4 and 6). The estimates are presented pooling all elections together (columns 1 and 2), and separately for presidential (columns 3 and 4) and Senate elections (columns 5 and 6). In all regressions, observations are weighted by the county-level adult population, and standard errors are clustered at the county level to deal with the concern that errors might be potentially correlated over time within counties. In addition, I include county fixed effects and year fixed effects, as well as control variables at the commuting zone level as explained in the previous section.

Before discussing the OLS and IV estimates, in Table 6.1 below, I present the first-stage estimates. According to this table, one percentage point increase in the predicted international student share increases the actual international student share by 0.856 percentage points. The magnitude of this coefficient implies that the predicted international student inflows are highly consistent with actual inflows. In addition, this relationship is statistically significant at one percent with t-ratio of 4.836.

In Table 6.2, the OLS estimates are not statistically significant; however, they are prone to omitted variable bias and reverse causality, as explained in the Methodology section. Local economic, political, and demographic changes might affect the international student inflows and the Republican vote share at the same time. For instance, economic growth in a county might increase the Republican vote share as a pro-business party while increasing the international student population in the same county, due to enhanced education and job opportunities. This simultaneous effect, in turn, underestimates the potential negative impact of international student inflows on the Republican vote share. The substantial discrepancy between OLS and IV estimates can

be attributed to this underestimation. Nevertheless, all OLS coefficients are negative, exhibiting the negative correlation between the international student and Republican vote share. However, the IV estimates show much larger negative relationship between international students and the Republican vote share.

In particular, the IV estimates show that one percentage point increase in international student share leads to a decline in the Republican vote share by 15.010 percentage points when the presidential and Senate elections are pooled (Column 2). The estimated decline in the Republican vote share is 10.790 percentage points in presidential elections, whereas 16.500 in Senate elections. These coefficients are statistically significant. Furthermore, the first-stage F-statistics are above 10 in all columns; hence, the instruments are not weak.

Besides statistical significance, assessing if the IV coefficients are economically significant is critical. In column 2 of Table 6.2, the coefficient -15.010 implies that, in the county with the average international student share (0.0031), the Republican vote share decreases by 4.7 percentage points compared to a county without any international student. According to the findings of Mayda et al. (2022), in the county with the average high-skilled immigrant share (0.096), the Republican vote share decreases by 14.7 percentage points compared to a county that has no high-skilled immigrants. Taking the findings of Mayda et al. (2022) as a reference point and considering the interpretation of the coefficient -15.010, it is plausible to claim that my results are in a meaningful range and economically significant.

Table 6.1:First Stage Results

First stage	Share of international students
Predicted share of international students	0.856***
at county level	[0.177]
Commuting zone control variables	Yes
Time fixed effects	Yes
County fixed effects	Yes
Observations	13,314
R-squared	0.834

Notes: This table presents the first stage results of 2SLS regressions, shown in Table 6.2. The dependent variable is the actual share of international students at the county level in the period 2000-2020. The explanatory variable is the instrument, which is the predicted share of international students. The control variables at the commuting zone are included. The first stage regression is weighted by the county adult population. The standard errors are clustered at the county level.

Table 6.2: Republican Vote Share and International Students

Election type	OLS and IV estimates, US counties consisting higher education institutions, 2000-2020					
	Pooled		Presidential elections		Senate elections	
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Share of IS	-0.329	-15.010**	-0.277	-10.790***	-0.489	-16.500**
	[0.517]	[6.713]	[0.280]	[3.779]	[0.902]	[8.245]
Commuting zone control variables	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed	Yes	Yes	Yes	Yes	Yes	Yes
effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects						
Observations	16,049	16,049	7,266	7,266	8,783	8,783
IV F-stat		23.72		23.82		22.91

Notes: This table presents both OLS and 2SLS estimates. The dependent variable is the Republican vote share in county *i* and year *t*. Columns 1 and 2 shows estimates for pooled elections, columns 3 and 4 for presidential elections, and column 5 and 6 for Senate elections in the period 2000-2020. The explanatory variable is the share of international students among county adult population. In all specifications, control variables at the commuting zone are included and they are as follows: the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. Each regression is weighted by the county adult population. The standard errors are clustered at the county level.

6.2 Robustness Checks

The first robustness check I present is the inclusion of time trends as additional control variables. I present in Table 6.3 below the OLS and IV coefficients that are estimated by including commuting zone time trends. Here, it is important to note that the magnitude of the estimated effect becomes smaller when the time trends are controlled for, when compared with the results in Table 6.2. In addition, all estimates are statistically significant, aside from the IV estimate for the Senate elections, which is still negative but not significant. The Senators are elected as the representatives of the State which they are the candidate of, and serve for six-year terms; which might imply that voting patterns for the Senate elections across years are influenced significantly by commuting zone time trends. Therefore, once these time trends are controlled for the estimated effect becomes insignificant.

In Table A1 in the Appendix, I report the coefficient estimates of the control variables for the IV specification. In the specifications without time trends (Columns 1, 3 and 5), most control variables are statistically significant. Once I control for time trends (Columns 2, 4 and 6), only a few coefficients of the control variables remain as statistically significant. The change in the results when time trends are included implies

that there are certain trend patterns in control variables and voting behavior within commuting zones across years. If trends are not explicitly controlled for, other variables capture the role of trends. In the specification controlling for trends, only average county income and unemployment rate statistically explain voting behavior. More specifically, higher average income in a county increases the Republican vote share in my sample, which consists of only counties hosting a higher education institution, while higher unemployment rate increases the Republican vote share in Senate elections, and decreases it in presidential elections.

Table 6.3:Republican Vote Share and International Students with time trends

Election type	OLS and IV estimates, US counties consisting higher education institutions, 2000-2020					
	Pooled		Presidential elections		Senate elections	
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Share of IS	-1.290**	-8.184**	-0.978***	-7.189***	-1.506*	-2.825
	[0.507]	[3.302]	[0.284]	[1.667]	[0.886]	[2.479]
Commuting zone control variables	Yes	Yes	Yes	Yes	Yes	Yes
Commuting zone time trends	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,049	16,049	7,266	7,266	8,783	8,783
IV F-stat		47.52		45.34		42.06

Notes: This table presents both OLS and 2SLS estimates. The dependent variable is the Republican vote share in county *i* and year *t*. Columns 1 and 2 shows estimates for pooled elections, columns 3 and 4 for presidential elections, and column 5 and 6 for Senate elections in the period 2000-2020. The explanatory variable is the share of international students among county adult population. In all specifications, control variables at the commuting zone are included and they are as follows: the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. Each regression is weighted by the county adult population. The standard errors are clustered at the county level.

Table 6.4 shows the results of different robustness checks for the specification controlling for time trends when all elections are pooled. In column 1, I present the IV estimate without including any control variable at the commuting zone level, and I find a similar result. In addition, third-party candidates might have a substantial impact on electoral outcomes. To deal with this issue, I report the IV estimate for the specification where the Democrat vote share is the dependent variable in column 2, and I find that the result is significant (with opposite sign). Furthermore, it is critical to conduct robustness checks regarding weights. All the regressions presented in the previous tables are

weighted by county adult population. These weights reduce the impact of the voters living in small counties. Column 3 demonstrates the result of the unweighted regression, which shows that the negative impact of international students on the Republican vote share is still significant. In addition, since political preferences may differ across Senate and presidential elections, I report the IV estimates for the specification where I include election-fixed effects. Column 4 verifies that the result is robust to including election-fixed effects. In Table A2 in the Appendix, the IV estimates of the same specifications, except for the column (4) specification, are reported for the presidential and Senate elections separately. Table A2 demonstrate that the presidential and Senate election results are also robust to various specifications.

Table 6.4: Republican Vote Share, International Students and Robustness

Regression specification	No controls (1)	Democrat vote share (2)	Unweighted regression (3)	Election-fixed effects (4)
Share of IS	-8.334**	3.972**	-8.344***	-7.948**
	[3.347]	[1.556]	[1.560]	[3.201]
Commuting zone control variables	No	Yes	Yes	Yes
Commuting zone time trends	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes
Election fixed effects	No	No	No	Yes
Observations	16,049	16,049	16,049	16,049
IV F-stat	45.23	47.52	38.24	47.51

Notes: The dependent variable is the Republican vote share in a county and year. The explanatory variable is the share of international students among the county adult population. All regressions include time fixed effects, county fixed effects and commuting zone time trends. Specification (1) does not include any control variables. Specifications (2) to (4) include all commuting zone level control variables which are as the following: the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. Specification (2) uses the Democrat vote share in a county and year as the dependent variable. Specification (3) is unweighted, and the remaining regressions are weighted by the county adult population. Specification (4) includes election fixed effects.

6.3 Heterogeneity Analysis

In this subsection, I present the results of two different heterogeneity analyses. First, I investigate if the political effect of international students differs across academic levels. Table 6.5 shows the OLS and IV estimates for the political impact of international students at the graduate level in Panel A, and of those at the undergraduate level in Panel B. Compared to the results in Table 6.2, the IV coefficients are larger and still significant, except for the coefficient for graduate students in Senate elections. The results imply that, pooling all elections, 1 percentage point increase in graduate international student share

leads to 42.95 percentage point decline in the Republican vote share, whereas to 23.18 percentage point decline when time trends are controlled for. The corresponding coefficient for the undergraduate international students equals to -31.18 in the specification in column 1, and to -16.73 in the specification including time trends. In addition, the decline in the number of observations in the Table 6.5 is due to the fact that some commuting zones have zero foreign undergraduate or graduate students. More specifically, since the share of foreign undergraduate and graduate students among the commuting zone populations of them are used to allocate the baseline high-skilled immigrants, the instruments have missing values, which reduce the number of observations in the IV estimations.

Table 6.5: Republican Vote Share and International Students by Academic Level

Election type	OLS and IV estimates, US counties consisting higher education institutions, 2000-2020					
	Pooled		Presidential elections		Senate elections	
	(1)	(2)	(3)	(4)	(5)	(6)
	2SLS	Trend 2SLS	2SLS	Trend 2SLS	2SLS	Trend 2SLS
Panel A: Graduate International Students and Republican Vote Share						
Share of graduate students	-42.95* [24.17]	-23.18* [11.89]	-27.49** [13.21]	-17.18*** [5.469]	-50.83 [31.13]	-13.32 [9.381]
Commuting zone control variables	Yes	Yes	Yes	Yes	Yes	Yes
Commuting zone time trends	No	Yes	No	Yes	No	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,899	11,899	5,392	5,392	6,507	6,507
IV F-stat	7.342	9.988	8.156	10.33	6.744	8.843
Panel B: Undergraduate International Students and Republican Vote Share						
Share of undergraduate students	31.18** [12.35]	-16.73** [6.792]	18.95*** [6.311]	-12.57*** [3.606]	-36.22** [15.12]	-2.471 [5.513]
Commuting zone control variables	Yes	Yes	Yes	Yes	Yes	Yes
Commuting zone time trends	No	Yes	No	Yes	No	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,035	16,035	7,260	7,260	8,775	8,775
IV F-stat	17.05	26.44	15.94	23.35	17.45	24.56

Notes: The dependent variable is the Republican vote share in a county and year. In Panel A, the explanatory variable is the share of graduate international students among the county adult population. In Panel B, the explanatory variable is the share of undergraduate international students among the county adult population. All regressions include time fixed effects, county fixed effects and commuting zone control variables. In all specifications, control variables at the commuting zone are included and they are as follows: the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. Each regression is weighted by the county adult population. The standard errors are clustered at the county level.

Second, I explore the heterogeneity in the political impact of international students across counties based on the political leanings of these counties. To be more specific, I categorize the counties into three different groups according to the electoral results within those counties. Predominantly Democrat counties are those where the average Republican vote share in the period 2000-2020 on average is below 0.45. In contrast, in predominantly Republican counties, the average Republican vote share is above 0.55. The remaining counties whose average Republican vote share lies within the thresholds 0.45 and 0.55

are referred to as “in between counties”. Table 6.6 presents the IV and Trend IV estimates for these 3 subgroups of counties separately. The IV estimates are significant only for in between counties and for predominantly Democrat counties in presidential elections. These results imply that as the political leanings towards the Republican or Democrat Party become stronger, the political impact of the international students diminishes. However, it is important to note that there is no effect when the time trends are controlled for. Therefore, the heterogeneity in the political impact of international students across counties needs to be taken cautiously.

Table 6.6: Heterogeneity Analysis across Counties based on the Republican and Democrat Party Predominance

	OLS and IV estimates, US counties consisting higher education institutions, 2000-2020					
Election type	Pooled		Presidential elections		Senate elections	
	(1)	(2)	(3)	(4)	(5)	(6)
	2SLS	Trend 2SLS	2SLS	Trend 2SLS	2SLS	Trend 2SLS
Panel A: Predominantly Democrat counties						
Share of international students	-6.310 [5.445]	-1.918 [2.723]	-5.147* [2.948]	-3.828** [1.544]	-5.079 [6.459]	4.238 [3.191]
Commuting zone control variables	Yes	Yes	Yes	Yes	Yes	Yes
Commuting zone time trends	No	Yes	No	Yes	No	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,828	3,828	1,559	1,559	2,546	2,546
IV F-stat	18.41	32.14	17.40	28.68	18.54	30.84
Panel B: Counties that are in between						
Share of international students	-11.65* [6.027]	-4.726 [3.243]	-10.63* [5.602]	-5.792 [4.945]	-17.58** [7.134]	-7.205 [10.58]
Commuting zone control variables	Yes	Yes	Yes	Yes	Yes	Yes
Commuting zone time trends	No	Yes	No	Yes	No	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,367	4,367	1,737	1,737	2,206	2,206
IV F-stat	11.75	31.62	11.60	19.55	15.42	24.54
Panel C: Predominantly Republican counties						
Share of international students	333.3 [1,790]	-4.046 [11.52]	160.0 [380.0]	-11.97 [17.40]	64.77 [95.42]	-8.129 [25.82]
Commuting zone control variables	Yes	Yes	Yes	Yes	Yes	Yes
Commuting zone time trends	No	Yes	No	Yes	No	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,854	7,854	3,970	3,970	4,031	4,031
IV F-stat	0.0345	1.578	0.171	0.878	0.513	0.993

Notes: The dependent variable is the Republican vote share in a county and year. In Panel A, the sample consists of predominantly Democrat counties whose average Republican vote share in the period 2000-2020 is below 0.45. In Panel B, the sample consists of in between counties whose average Republican vote share in the period 2000-2020 is above 0.45 and below 0.55. In Panel C, the sample consists of predominantly Republican counties whose average Republican vote share in the period 2000-2020 is above 0.55. All regressions include time fixed effects and county fixed effect. In all specifications, control variables at the commuting zone are included and they are as follows: the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. Each regression is weighted by the county adult population. The standard errors are clustered at the county level.

Chapter 7:
DISCUSSION

In this section, I discuss the empirical findings that I presented in the previous section by referring to the political discourses revolving around international students in the United States and the survey data on the U.S. citizens' perceptions of international students, which I explain in detail below. Before elaborating on the portrayal of international students in U.S. politics, it is essential to indicate what the Republican Party and the Democrat Party represent in this context. The Republican Party is associated with anti-immigrant sentiment and appeals to the voters who advocate for more exclusionary immigration policies, whereas the Democrat Party is associated with a more inclusionary and welcoming stance towards immigrants. In this sense, the decline in the Republican vote share, which is presented in the previous section, implies that the influence of the anti-immigrant sentiment is reduced. Relatedly, the opposing stances towards international students reflected in political discourses and public opinions are attributed to the Republican Party. This section examines the negative causal relationship between international student share and the electoral support for the Republican Party through this lens and attempts to understand the underlying mechanism behind this relationship.

The negative impact of an increase in international student share on Republican vote share can be attributed to several reasons. For exploring these reasons, it is useful to analyse how international students are incorporated into political agendas. A newly-emerging literature treats policy as being produced consistent with the complicated negotiations integral to language and political discourses (Goodwin, 2011). Accordingly, Menz (2016) discusses that policy actors exploit discourse to shape political agendas and justify their decisions. Given these, Riano et al. (2018) classify political discourses regarding international students that politicians use to justify their policy choices as follows: "(a) as economic agents or drivers of knowledge and eventually of economic growth, (b) as sources of income for the higher education sector, (c) as temporary subjects, (d) as immigrants of doubtful value and (e) as part of soft power." Although some of these discourses contradict each other, they can be used simultaneously. They also change as aligned with politicians' shifting political and economic interests. Since political preferences are highly intertwined with prevalent political discourses, presenting these political discourses together with U.S. public perceptions concerning international

students will constitute a holistic approach to evaluating sentiments towards international students.

The American Council on Education (ACE) serves as the major coordinating organization for the U.S. colleges and universities, and aims to influence the higher education public policies in an effective manner. The issue brief by the ACE, "International Student Inclusion and Success: Public Attitudes, Policy Imperatives, and Practical Strategies" (2021), presents survey data on 1000 registered U.S. voters' stances towards international students. The demographic data on the 1000 voters are compared to the population data presented by the U.S. Census in the report "Characteristics of Voters in the Presidential Election of 2016" below. The comparison demonstrates that the survey aims to be representative of the U.S. voters. For example, 52 percent of the survey respondents is female while 48 percent of them is male. According to the population estimates by the U.S. Census for 2022, 53.6 percent of the U.S. population is female, and 46.4 percent of it is male. Another important dimension is the age composition. 36 percent of the survey respondents are in the age range 18-44, 41 percent of them are in the age range 44-64, and 23 percent of them are 65 and above. Similarly, the Census data report that 38.2 percent of the population is in the age range 44-64, 37.6 percent of it is in the age range 44-64, and 24.2 percent of it are 65 and above. In addition, 69 percent of the survey respondents are white, 12 percent of them are African-American and 13 percent of them are Hispanic. In parallel, Census data show that 73.3 percent of the U.S. voters are white, 11.9 percent of them are African-American and 9.2 percent of them are Hispanic or Latino (U.S. Census Bureau, 2018). The ACE survey complements the political discourses by reflecting U.S. citizens' perceptions of international students, thus is referred to frequently below.

To begin with the first political discourse, the perception of international students as "economic agents" can be attributed to the claim that today is marked by global competition for talent. This competitive climate implies that countries adopting anti-immigration measures give up on their opportunity of attracting high-skilled immigrants and capitalize on their talent (Menz, 2016). High-skilled graduates are considered valuable human capital and expected to provide significant economic contributions. In addition to the economic aspect, their social experiences in the U.S. facilitate their social cohesions. In parallel to this discourse, the American public portrays international students as valuable members of their communities, both at the institutional, local, national, and global levels. Regardless of still studying, being graduated, and entering the

workforce, international students are associated with vital academic, economic, cultural, and scientific contributions. According to the issue brief by the American Council on Education (ACE), 55 percent of survey respondents defend that the U.S. should adopt more open immigration policies concerning international students so that they can increase international competitiveness and contribute to the U.S. economy. The share of respondents who agree with this increased from 50 percent to 55 percent from 2017 to 2021. Furthermore, 55 percent of respondents agree that international students' stay in the U.S. after graduation is positive as they augment the workforce by acquiring critical jobs in high-skill sectors, such as tech and STEM, and enrich the U.S. economy (ACE, 2021).

Another important political discourse treats international students as "sources of income for the higher education sector." This is a consequence of higher education institutions' efforts to attract more international students, which in turn is expected to increase revenues and contribute to the financial sustainability of those institutions. Fifty-six percent of respondents acknowledge that money spent by international students directly contributes to the U.S. economy when they are enrolled in a U.S. institution and study there. The income that international students provide amounted to $44 billion in 2019 (ACE, 2021). In addition, tuition revenue paid by international students constitutes approximately 20 percent of many major research institutions' total tuition revenue (Larmer 2019). In this sense, the revenue from foreign students may be utilized by institutions to serve the benefits of local students by recognizing their preferences (Bound et al., 2021). The economic contribution narrative also surpasses the institutional level and resonates with the public. 60 percent of U.S. citizens recognized the spillover effects of international students by agreeing that they contribute significantly to the U.S. economy by spending money when living in the U.S. and supporting various jobs in different sectors.

One puzzling aspect is that the above discourses coexist with the portrayal of international students as "immigrants of doubtful value." International students from some underdeveloped countries might be perceived as potential economic migrants who exploit the student visa to access the labor market of the U.S. For instance, 37 percent of U.S. respondents agree that the visa timelines are not binding for most international students, and they overstay their visas based on the ACE survey. While international students are portrayed as a source of revenue for higher education institutions, they are also perceived as having doubtful value, which poses an apparent contradiction. Although

policies concerning international students have liberalized and become more open in many countries, they are also confronted with backlashes due to the rise of anti-immigration rhetoric, populist discourses, and nativist politics. These backlashes pave the way for the coexistence of inclusionary and open measures with the restrictive and exclusionary ones in political agendas. For example, following Donald Trump's electoral victory in the 2016 U.S. presidential elections, international students have been 'othered' based on their religion, race, and national origin, as they became the target of the executive order 13769. This executive order banned the inflow of migrants, including international students, from seven Muslim-majority countries at the United States. Trump stated, "This is not about religion-this is about terror and keeping our country safe." (Weimer & Barlete, 2020). Similarly, higher education institutions and educational associations opposed the exclusionary language, as well as the executive order. As for the U.S. public, 18 percent of the respondents said they would like international students to obtain U.S. immigration visas more easily. In comparison, 44 percent agreed that they would like the current visa policy to stay the same (ACE, 2021).

Finally, the rhetoric of "international students as part of soft power" is integral to the political discourses surrounding international students and is receiving substantial scholarly attention (Raghuram, 2013). In today's global climate of increased competition for talent, states increasingly perceive higher education institutions as strong entities that strengthen their soft power and stretch their scope of influence. Offering higher education to foreign students in the U.S. effectively improves mutual relations and cooperation between states, as the educational process facilitates the dissemination of ideas, cultural traditions, and different worldviews. Relevant to this discourse, 54 percent of the U.S. respondents think that welcoming international students to U.S. institutions catalyzes the improvement of the relations between the U.S. and foreign students' home countries, as they are expected to be future leaders in their home countries.

These political discourses about international students and the opinions of the U.S. public respondents justify my empirical results. Although contradicting perceptions regarding international students coexist, their positive attributes outweigh the negative ones. More specifically, the perceived contribution of international students to the U.S. economy and the U.S. soft power outweighs the doubts regarding the value of international students. In this context, as the U.S. natives interact more with international students, whose number increased drastically in the last decade, the anti-immigrant

sentiments lose their influence. These interactions, in turn, reduces the electoral success of the Republican Party, which attributes doubtful value to the immigrants.

Chapter 8:
CONCLUSION

In this paper, I have explored the impact of international students on the vote share of the candidate affiliated with the Republican Party in presidential elections and Senate elections from 2000 to 2020 in the United States. The existing literature already reveals that high-skilled and low-skilled immigrants have opposite impacts on the Republican vote share. The findings suggest that high-skilled immigrants are seen to provide economic benefits to natives, contribute to the job creation process and be more likely to integrate into U.S. society. Conversely, low-skilled immigrants are portrayed as potential competitors of low-skilled voters and less likely to integrate compared to the high-skilled ones. Evidence suggests that they are compatible with the perceptions of U.S. voters, perhaps due to how the issue of migration appears in media.

Based on these assessments, my main contribution has been demonstrating that the political impact of international student migration to the U.S. is consistent with the political impact of high-skilled migration. My findings suggest that as the number of international students in a U.S. county increases, the Republican vote share in presidential elections and Senate elections decreases. The assumption that is integrated into my hypothesis entails that the presidential candidates of the Democrat Party are more inclusionary and open regarding the migration issue. In contrast, the opposite holds for those of the Republican Party. Therefore, my results support the claim that the U.S. natives favor international students and recognize their benefits.

In addition to my main finding, I showed that the political impact of the inflow of international students is heterogeneous across the counties where the predominant political position of the voters living there differs. I find that the political impact of international students in counties where the vote share of the Republican Party is close to 50 percent and Democrat counties is significant. In counties where most voters are Republican, the political impact becomes insignificant. In addition, I explored if the international students' levels of study lead to differential impacts, and I found that both undergraduate and graduate students have a negative impact in the Republican vote share.

The discussion on the political discourses concerning international students reveals that although contradicting forces are at play, the portrayal of international students as economic agents and soft power overrides negative perceptions of them. Overall, my findings imply that international students, who are classified as high-skilled immigrants, have a considerable influence over the political landscape and electoral outcomes in the United States.

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Appendix

Table A1: Republican Vote Share and Control Variables

	OLS and IV estimates, US counties consisting higher education institutions, 2000-2020					
Election type	Pooled		Presidential elections		Senate elections	
	(1)	(2)	(3)	(4)	(5)	(6)
	2SLS	Trend 2SLS	2SLS	Trend 2SLS	2SLS	Trend 2SLS
Share of low-skilled natives	0.756*** [0.203]	0.183 [0.163]	0.700*** [0.110]	-0.006 [0.090]	0.922*** [0.298]	0.184 [0.245]
Share of African-American citizens	0.756*** [0.290]	-0.169 [0.235]	0.021 [0.182]	0.147 [0.140]	1.478*** [0.448]	1.498** [0.615]
Share of rural citizens	-0.056** [0.028]	-0.004 [0.013]	-0.030** [0.012]	0.009 [0.008]	-0.080* [0.042]	0.026 [0.021]
Average income of citizens (in 10.000$)	0.070*** [0.022]	0.031** [0.014]	0.026** [0.011]	0.022*** [0.008]	0.110*** [0.037]	0.003 [0.027]
Share of male citizens	1.737*** [0.376]	0.396 [0.271]	1.416*** [0.266]	0.159 [0.167]	2.224*** [0.558]	1.175** [0.580]
Unemployment rate	0.560** [0.259]	0.271* [0.164]	-0.125 [0.167]	-0.441*** [0.102]	1.175*** [0.443]	0.988** [0.432]
Share of married citizens	-0.390*** [0.100]	-0.124 [0.079]	-0.363*** [0.071]	-0.050 [0.045]	-0.422*** [0.138]	-0.189 [0.142]
Labor market participation rate	-0.385*** [0.132]	-0.074 [0.104]	-0.291*** [0.090]	-0.040 [0.060]	-0.474** [0.196]	0.040 [0.208]
Commuting zone time trends	No	Yes	No	Yes	No	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,049	16,049	7,266	7,266	8,783	8,783
IV F-stat	23.72	47.52	23.82	45.34	22.91	42.06

Notes: This table presents both OLS and 2SLS estimates for the control variables at the commuting zone. The dependent variable is the Republican vote share in county *i* and year *t*. Columns 1 and 2 shows estimates for pooled elections, columns 3 and 4 for presidential elections, and column 5 and 6 for Senate elections in the period 2000-2020. The explanatory variables are control variables at the commuting zone as the following: the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. The international student share in a county and a year is included. Each regression is weighted by the county adult population. The standard errors are clustered at the county level.

Table A2: Robustness in Presidential and Senate Elections

Regression specification	No controls (1)	Democrat vote share (2)	Unweighted regression (3)
Panel A: Presidential elections			
Share of IS	-7.713***	8.388***	-7.935***
	[1.962]	[1.623]	[1.560]
Commuting zone control variables	No	Yes	Yes
Commuting zone time trends	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes
Observations	7,266	7,266	7,266
IV F-stat	40.85	45.34	33.84
Panel B: Senate elections			
Share of IS	-2.913	2.820	-8.122***
	[2.516]	[1.971]	[1.742]
Commuting zone control variables	No	Yes	Yes
Commuting zone time trends	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes
Observations	8,783	8,783	8,783
IV F-stat	42.21	42.06	35.49

Notes: The dependent variable is the Republican vote share in a county and year. The explanatory variable is the share of international students among the county adult population. Panel A presents the IV estimates for the presidential elections and Panel B for the Senate elections. All regressions include time fixed effects, county fixed effects and commuting zone time trends. Specification (1) does not include any control variables. Specifications (2) and (3) include all commuting zone level control variables which are as the following: the labor market participation rate, the share of low-skilled citizens, the rural share, average income per capita, the share of African-American citizens, the unemployment rate, the share of male and share of married. Specification (2) uses the Democrat vote share in a county and year as the dependent variable. Specification (3) is unweighted, and the remaining regressions are weighted by the county adult population.