Safer in a strange land:
Studying the relationship between refugee resettlement and crime in the United States

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To Mom and Bob.
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Abstract

Xenophobia in America has fueled the perception that refugees pose a danger to native citizens. However, the refugee admissions process and "immigrant revitalization" perspective suggest that refugees would not affect crime. Yet, refugees with integration issues may commit crimes out of economic deprivation or social disorganization. Further research is necessary to understand how refugees affect public safety. In this paper, I study "free-case" refugee resettlement's effect on U.S. crime rates and whether southeast Asian refugee resettlement from 1975 to 1980 influenced crime. I find some evidence that refugee resettlement has a small negative relationship with murder rates. However, this finding does not extend to violent or property crime rates. Additionally, I find no evidence that southeast Asian refugees resettled during that period affected crime. This project develops the immigration-crime relationship and provides evidence that refugees do not threaten resettlement communities.

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Introduction

In September of last year, President Trump announced that he intended to decrease the number of refugees admitted to the United States from 110,000 to 45,000. In the report outlining the policy change, the White House reasoned that, "refugee resettlement opportunities [should] go only to those who are eligible for such protection and who do not present a risk to the safety and security of our country," (Laughland 2017). This policy change followed an executive order that the President signed in January 2017 which barred citizens of seven Muslim-majority countries from traveling to America, suspended refugee admissions to the United States for 120 days, and banned Syrian refugees from resettling in the United States indefinitely. Since signing that order, President Trump has disparaged refugees and their countries-of-origin (Dawsey 2018). He has also magnified European concerns over refugee migration and promoted falsified videos of refugees committing violent acts (McCallister 2018). Such rhetoric at the national level may affect public perceptions of refugees in their resettlement communities (Hopkins 2010)[1].

But is it really the case that refugee resettlement endangers public safety in local communities? Answering such a question would have implications for the public debate over refugee policy. Since the Syrian Civil War's outbreak, 5 million Syrians have fled their country and are seeking asylum in Europe and the United States (UNHCR 2017). Tragically, domestic security concerns are hindering efforts to resettle Syrian refugees. If policymakers understood how refugees affected public safety, then they would develop better policies to address the gravest humanitarian crisis since World War II.

In this paper, I present two studies of refugee resettlement's effect on crime rates. The first study controls for endogeneity between refugee characteristics and the counties into which they are resettled. The second study controls for county-characteristics that may affect refugee resettlement and crime. In the first, I estimate refugee resettlement's per capita effect on murder, violent crime, and property crime rates in counties in the United States. I find that refugee resettlement is linked to a significant but substantively small reduction in murder rates in U.S. counties, but I find insufficient evidence for a relationship between refugee resettlement and violent or property crime.

[1]Hopkins (2010) found that national politicization of immigration, coupled with a large influx of foreign born individuals into a community, can reduce support for immigrants. They did not specifically study refugees, so I can only speculate that his findings hold for them as an immigrant sub-population.

In the second analysis, I estimate the difference-in-differences in murder, robbery, and overall crime rates in U.S. counties that resettled southeast Asian refugees between 1975 and 1980. I do not find any significant change in crime in counties that resettled southeast Asian refugees.

The paper proceeds as follows. First, I present a brief history of refugee resettlement in the United States, discuss how refugee admission and resettlement affects local crime, and assess theoretical frameworks for understanding the relationship between refugees and crime. Second, I describe the data, methods, results, and limitations for my analyses of free case refugee resettlement and southeast Asian refugee resettlement's effect on crime in the United States. I conclude with a discussion of the results, their implications, and opportunities for future research.

History of Refugee Resettlement in the United States

From the 1880s until World War I, the primary beneficiaries of American refugee admission policies were Jews escaping pogroms in Eastern Europe and Armenian Christians fleeing the Ottoman Empire (Zolberg 1988). During and after World War I, the United States instituted quota systems that barred many Europeans from migrating. The result was a high barrier of entry for admission and millions of Jewish and Soviet refugees stranded in Europe until the end of World War II (Friedman 1973).

After World War II, American refugee policy focused on admitting and resettling European refugees. Congress passed the Displaced Persons Act of 1948 and the Refugee Relief Act of 1953, which together admitted more than 400,000 refugees from post-war Europe and the Soviet bloc (Zucker 1983). The laws also enshrined a public-private partnership between the federal government and voluntary agencies, known as VOLAGs, which resettled refugees in local communities. (Zolberg 1988)[2].

America's Euro-focused refugee policy changed after the Cuban Revolution, when it became the country of first asylum for thousands of Cuban refugees. In response, Congress passed the Migration and Refugee Assistance Act of 1962 (Zucker 1983). The act established the Cuban Refugee Program to provide cash assistance, welfare, and employment to asylum seekers. Many Cubans remained in Florida, the state in which they sought asylum, which limited the scope of

[2]The Corporate Affidavit Program of 1946 guaranteed public support for voluntary agencies that assisted in refugee resettlement. The voluntary agency had to ensure that the refugee would not become a public charge.

resettlement[3].

America's first national resettlement of non-European refugees began after the Fall of Saigon in South Vietnam in 1975. Between 1975 and 1980, the United States resettled 300,000 refugees from Vietnam, Laos, and Cambodia all over the country (Zong and Batalova 2016; Office of Refugee Resettlement 1980; Interagency Task Force for Indochina Refugees 1975)[4]. These refugees had no pre-existing community or cultural ties to the country and relied heavily on VOLAG and federal assistance (Interagency Task Force for Indochina Refugees 1975). To address their needs, Congress passed the Indochinese Refugee Assistance Act in 1975, which provided funds for refugees arriving from Vietnam, Laos, and Cambodia to be resettled throughout the United States (Zucker 1983).

By 1979, the United States refugee resettlement system was a patchwork of laws, agencies, and public-private partnerships. Congress responded with the Refugee Act of 1980, which established the framework for the refugee resettlement process in place today. The Act defined refugee[5], established flexible criteria for admission, and created the Office of Refugee Resettlement to coordinate between VOLAGs, states, and the federal government (Zolberg 1988).

After the Refugee Act of 1980's passage, the incoming Reagan administration claimed that the country was experiencing "compassion fatigue". He refused to grant Haitian and Cuban asylum seekers who had recently arrived in the United States refugee designation. Instead, he granted them special-status, which provided fewer resettlement resources and a longer path to permanent status (Zucker 1983). Reagan rolled back refugee assistance to keep migrants self-sufficient and VOLAGs accountable. His administration restricted refugee flows into the United States and had the Coast Guard intercept boats carrying Haitian asylum seekers to return them to the island. Reagan reduced funding to social services for refugees and decreased the amount of time refugees had before they needed to apply for state benefits from 36 months to 18 months.

From the Reagan administration until today, the refugee admission system has largely remained

[3]Today, of the 1.2 million Cubans in the United States, 750,000 of them live in Miami-Dade county and 900,000 live in Florida (Zong and Batalova 2017a).

[4]Prior to 1970, only 4,600 southeast Asians lived in the United States according to 1970 Public-use Census data. These immigrants were primarily guest workers and Amerasian children of American servicemen abroad (Zong and Batalova 2016).

[5]The United States already defined refugee by adopting the 1951 UN Refugee Convention, but this act codified the definition into the United States Code. A refugee is any person who is outside any country of such person's nationality or, in the case of a person having no nationality, is outside any country in which such person last habitually resided, and is unable or unwilling to return to, and is unable or unwilling to avail himself or herself of the protection of that country because of persecution or a well-founded fear of persecution on account of race, religion, nationality, membership in a particular social group, or political opinion (Office of Refugee Resettlement 2016).

the same. In 1989, the so-called Lautenberg amendment[6] expanded refugee admissions to religious minorities facing persecution in the Soviet Union and Vietnam (Singer and Wilson 2007)[7]. The amendment assisted thousands of Jews and evangelical Christians fleeing the Soviet bloc at the end of the Cold War. From the Soviet Union's dissolution until the late 1990s, the United States mostly accepted refugees from the former Yugoslavia. Since 2001, the United States has accepted refugees primarily from Liberia, Sudan, and Ethiopia as well as from Iran, Iraq, Afghanistan, and, until recently, Syria (Singer and Wilson 2007; Zong and Batalova 2017b).

Today, refugee resettlement's relationship to public safety may be particularly salient, but the notion that refugees, and immigrants more broadly, are dangerous has long been a misperception in the United States (Rumbaut and Ewing 2007). A substantial body of research has found that the media report on refugees as a danger to personal and public safety, health, local communities, and American culture (McKay, Thomas, and Kneebone 2012; Bleiker et al. 2013; Esses, Medianu, and Lawson 2013; Breen, Devereux, and Haynes 2006; Kaye 1998). When the media negatively frames refugees, this affects perceptions of resettlement at the local level (Ferwerda, Flynn, and Horiuchi 2017; Hopkins 2010). Further, when elites politicize immigrants or refugees, they decrease support for resettlement in the communities into which refugees resettle (Hopkins 2010)[8]. As a result, Americans have rarely expressed approval for admitting refugees into the United States. For instance, in November 1939, a Gallup Poll found that 77% of Americans opposed admitting more refugees from Europe (Friedman 1973). Only 33% of Americans approved admitting Hungarian refugees in 1956, 26% approved admitting any refugees in 1980, and in 2015, only 37% approved of admitting Syrian refugees to the United States (Newport 2015; Jones 2015).

The relationship between refugees and crime

The refugee admission and resettlement process

Despite consistent fears to the contrary, refugees as a cohort are less likely to commit crimes than native-born citizens for reasons endemic to the admission and resettlement process. Each year

[6]Named after the late Senator Frank Lautenberg (D-NJ).

[7]Today, the Lautenberg amendment also applies to religious minorities in Iran and to anyone who can claim credible persecution on the basis of religion in their home country.

[8]Again, Hopkins (2010) study immigrants and not refugees specifically, but their results should be consistent across immigrant sub-populations.

since the Refugee Act of 1980, the President determines the refugee resettlement priorities and sets the ceiling for admissions (Office of Refugee Resettlement 1980). A United States Embassy in the country of first-asylum or a specially-trained NGO refers a case to one of nine Refugee Support Centers (RSCs) around the world (Bureau of Population and Migration 2017)[9]. Once the RSC processes an application, the office investigates the refugee to determine if they pose a security risk. Following a thorough background check, refugees must complete an in-person interview and a health screening before the RSC approves their admission into the United States. Refugees with a criminal history, mental or physical health problems, or radical political beliefs are filtered out through this screening process (USCIS 2017; Stephen et al. 1994; Kennedy et al. 2006).

The refugee security screening process is stringent compared to other avenues by which non-citizens gain entry into the United States. For instance, in the family reunification process, an American citizen needs only to apply for a visa for their spouse or child, and have them pass a basic background check (American Immigration, Council 2016). The immediate family member does not go through an additional security screening or in-person interview, nor are they placed on a waiting list or expected to remain in a refugee camp until their application has been processed. Once the application is approved, the non-citizen is free to move to and live in the United States. While the United States strictly limits refugee resettlement, it sets no limit on immigration by immediate relatives (American Immigration, Council 2016; Vaughan 2015).

After a refugee passes the various hurdles for admission, one of nine VOLAGs must sponsor the refugee's resettlement (Office of Refugee Resettlement 2018)[10]. Once a VOLAG sponsors a refugee, that agency controls the refugee's resettlement location. The VOLAGs match refugees with family or with a pre-existing ethnic community whenever possible[11]. Existing communities can have significant effects on refugee resettlement outcomes. For example, in 2015, only 17.5% of resettled Cuban refugees required government assistance after their first year in the United States

[9]The RSCs are funded by the State Department's Bureau of Population, Refugees, and Migration and administered by five international NGOs.

[10]The nine voluntary agencies operate 350 offices to facilitate refugee resettlement. They are the Church World Service, Ethiopian Community Development Council, Episcopal Migration Ministries, Hebrew Immigration Aid Society, International Rescue Committee, US Committee for Refugees and Immigrants, Lutheran Immigration and Refugee Services, United States Conference of Catholic Bishops, and World Relief Corporation (Office of Refugee Resettlement 2012). The State Department's Reception and Placement Program provides a lump-sum payment of $2,000 to the VOLAG for each refugee resettled. The VOLAGs have small full-time staff and rely heavily on volunteers and donations to assist them with the refugee resettlement process.

[11]For instance, Cuban and Somali refugees are resettled most frequently in Miami and Minneapolis, respectively, where existing ethnic communities have developed over the last several decades.

as compared to the refugee average of 72% (Office of Refugee Resettlement 2016).

If refugees have no ties to the United States, then they are considered free cases and placed with a VOLAG with the resources to resettle them (Ferwerda, Flynn, and Horiuchi 2017). Once the VOLAG determines the resettlement location, they relay it to the RSC, which then transfers the refugee's case to the International Organization for Migration[12] to transport the refugee to the United States (Bureau of Population and Migration 2017)[13]. The entire admissions process takes anywhere from 18 to 24 months.

After arriving in the United States, the refugee meets a VOLAG representative, who takes the refugee to their new apartment, outfitted with basic furnishings, and assists them with getting a Social Security Card, registering for school, and learning to shop (Office of Refugee Resettlement 2018). Once resettled, refugees are eligible for direct cash-assistance from the State Department's Reception and Placement program for the first three-months after their arrival. After that time, they must apply for long-term assistance through the Department of Health and Human Services' Office of Refugee Resettlement or via state government programs. Refugees collect these benefits for up to three years. Upon arrival, refugees are eligible to work and encouraged to do so (Office of Refugee Resettlement 2016).

Perhaps most importantly, refugees do not have permanent status in the United States until after their first year in the country and they cannot apply for citizenship until they have been in the country for five years. As a result, if they commit a serious crime or pose a danger to the nation's safety, then they are deported to their country-of-origin (Kidane 2006). For refugees fleeing credible fears of persecution in their homeland, such a tacit threat substantially increases the cost of committing a crime[14].

[12] Intergovernmental organization that operates out of Switzerland.

[13] Any costs incurred for the refugee's transportation are paid for by the federal government through an interest-free loan that the refugee must repay after arriving in the United States.

[14] Despite integration challenges, refugees provide economic and social benefits to communities into which they are resettled in ways that may also reduce crime. For instance, refugees can provide doctors to communities that cannot incentivize native-born doctors to practice medicine there (New American Economy 2016). Since the 1990s, refugees have been resettled in increasing numbers into medium-sized and smaller metropolitan areas in an effort to stem population decline and economic stagnation across the Midwest (Connors 2017). Refugees now dominate the overall foreign born populations in places like Fargo, ND and Sioux Falls, SD (Singer and Wilson 2006)

Social disorganization theory and refugees

Although there are significant barriers for refugees to commit crimes, theoretical frameworks exist that predict a positive relationship between resettlement and crime. The first, social disorganization theory, was developed out of a study of 21 American cities done by Shaw and McKay (1942). Shaw and McKay concluded that immigrants were no more prone to commit crimes than citizens. Instead, the communities into which immigrants moved had characteristics that increased criminal activity. They theorized that crime is a relatively constant condition in specific types of community. Thus, social disorganization theory focuses on the types of places to which immigrants move rather than the types of people they are Martinez, Stowell, and Lee (2010).

Social disorganization theory is grounded in the systemic model of community interaction, where the community is conceptualized as a system of friendship and kinship networks (Kasarda and Janowitz 1974). The systemic model assumes that structural barriers can impede the development of a community's networks (Bursik Jr 1984). In this framework, social disorganization is a structural barrier for heterogeneous and poor communities[15].

Shaw and McKay (1942)'s theory guided scholarship on the relationship between immigration and crime throughout much of the 20$^{\text{th}}$ century. However, immigration's direct effect was not the focus of their study. Shaw and McKay (1942) argued that communities themselves, rather than any foreign menace, increased crime. More recent scholarship focuses on immigration's direct effect on communities rather than on a community's characteristics. This "immigrant revitalization perspective," argues that ethnic heterogeneity, immigration, and residential instability are associated with reduced crime rates (Martinez, Stowell, and Lee 2010). This model adopts social disorganization theory's logic, but argues that community features which produce social disorganization have changed. Today, urban areas that experience the most crime are often racially segregated, homogeneous neighborhoods.

In fact, empirical research up to this point has largely supported the immigration revitalization

[15]Sampson and Groves (1989) identify several community characteristics that lead to greater social disorganization. The first is a community's inability to control gangs. Delinquency is a group phenomenon (Thrasher and Short 1963), so socially disorganized communities are unable to control gang violence. When residents form social ties with one another, as in homogeneous areas, that community has an increased capacity for social control because the residents more easily communicate (Skogan 1986). Kasarda and Janowitz (1974) argue that integration into a community is a temporal process, so residential stability over time is also important for developing kinship networks among ethnically diverse groups. Finally, Sampson (1987) argues that family stability is critical for social organization.

perspective's prediction of a negative relationship between immigration and crime. Logan, Alba, and McNulty (1994) found that Latino immigrants in Miami committed half as many murders as expected given their population size. Ousey and Kubrin (2009) found that immigration decreases crime rates by increasing the presence of nuclear-families in communities. Wadsworth (2010) found that large increases in immigration in American cities from 1990 to 2000 corresponded with comparable decreases in murders and robberies during the same period. Reid et al. (2005) found that immigration was linked to lower crime in metropolitan areas in 2000. Recent research by Adelman et al. (2017) focused specifically on urban crime and found that immigration was consistently linked to a decline in violent and property crime in cities from 1970 to 2010.

The immigrant revitalization perspective does not dismiss the notion that refugees commit more crimes than non-citizens, but rather that the community characteristics that increase criminality have changed. For free case refugees, who are resettled into communities with no existing ethnic or familial connection, the community characteristics that increase crime rates may still persist. In recent years, refugees have been resettled less in immigrant enclaves like New York and Los Angeles and more in medium-sized and smaller metropolitan areas in the Midwest (Singer and Wilson 2006). These communities can be economically depressed and racially homogeneous, both characteristics conceived of as contributing to social disorganization within the immigrant revitalization perspective.

Economic opportunity theory and refugees

Economic opportunity theory would also predict a positive relationship between immigration and crime. Within the economic opportunity framework, rational actors weigh the costs and benefits of crime versus labor and choose the path with the higher expected return (Becker 1968; Freeman 1999). Cloward and Ohlin (1960) developed economic opportunity theory in a study of juvenile gangs in America. They found that individuals who experienced economic deprivation, coupled with an increase in criminal opportunity in their community, would resort to crime as a means of upward mobility.

The economic opportunity argument is particularly appropriate for predicting refugee resettlement's effect on crime. Most refugees require significant assistance in their first few years after resettlement. According to the Office of Refugee Resettlement's 2015 report to Congress, 72% of

refugees rely on cash assistance after 8 months in America and 68% are enrolled in Medicaid or Refugee Medical Assistance[16]. This rate halves after the first year of arrival, but the decline primarily reflects that refugees lose most of their cash and medical assistance after the first year and must enter the labor force (Office of Refugee Resettlement 2016).

Refugees may also experience economic deprivation due to poor English skills[17]. Capps et al. (2015) found that the primary impediment to integration and economic self-sufficiency is the language barrier. From 2008 to 2013, only 33% of refugees admitted to the United States spoke any English and only 7% spoke "good English"[18]. Developing English proficiency is particularly challenging because refugees coming to the United States speak well over 200 different languages. Refugee case-workers attempt to work with refugees in their native language[19], but finding fluent speakers in the myriad languages spoken by refugees is difficult. Further, Capps et al. (2015) found that literacy rates varied by nation-of-origin[20]. Illiterate arrivals must be taught to read in their native language before they can be taught to read in English, which poses yet another bottleneck on the integration process.

Economic opportunity theory has some empirical support. Bell, Fasani, and Machin (2013) found that the arrival of asylum seekers in the United Kingdom corresponded with an increase in property crime rates. The asylum seekers had low labor force participation and low wage levels, both of which correlated with increased crime rates. These findings corroborate Walburg (2016)'s findings that burglaries and pickpockets increased with the arrival of large waves of Syrian migrants in Germany. Yet, Bell, Fasani, and Machin (2013)'s results were influenced by government policy in the United Kingdom, which prevents refugees from working until their asylum application has been

[16]Two-thirds of refugees coming to the United States have family or ethnic ties that may sustain them economically. For instance, only 17.5% of Cuban refugees require cash assistance but 75% of Iraqi refugees do (Evans and Fitzgerald 2017).

[17]Refugees are often employed in undesirable labor sectors such as meatpacking and processing. This work provides low wages and difficult hours, but is suitable for individuals with no labor skills and poor English (Cohen 2018). Refugees employed in such work may still be prone to criminal activity for several reasons. First, anecdotal evidence suggests that the supervisors at these plants often fire workers for minor offenses, which may unintentionally harm refugees who do not understand the American work environment. Second, these jobs are monotonous and difficult, which creates high turnover. Refugees may leave employment at a meatpacking plant looking for other work and find none, which could lead to economic deprivation. Finally, even if a refugee remains in the meatpacking industry, they are paid meagerly: around $9 to $11 an hour, which may be below the poverty line if the refugee has a family.

[18]These statistics are self-reported by refugees who may have never had to live in an English speaking society. It is likely, then, that the number of fluent English speakers coming to the United States as refugees is even smaller.

[19]Studies have shown that doing so increases the rate at which a refugee moves off of those benefits or integrates Capps et al. (2015).

[20]Cuban refugees have the highest literacy rates at 94% literate and the Hmong from Laos having the lowest at 18%.

approved. Such a policy does not exist in the United States (Office of Refugee Resettlement 2018); however, labor force participation for refugees is low in the first year of arrival. The unemployment rate for refugees in their first year in America was 18.8% in 2015 compared to the overall U.S. rate of 4.7% during the same period (Office of Refugee Resettlement 2016). For employed refugees, the average hourly wage was $9.91 (Office of Refugee Resettlement 2016), which is below the poverty line for a family of four (Cooper 2013). Refugees in America may be encouraged to work within the first 6 months of arrival, but their employment opportunities are sparse and poorly paid, which may lead to economic deprivation.

Finally, there is reason to believe that refugee resettlement may endanger public safety due to native-born criminal activity. In Germany in 2016, there were 1,047 attacks on refugee homes and 705 attacks on asylum shelters from January to August of 2017 (Gopalakrishnan 2017). German Police are concerned about attackers forming terrorist organizations which could initiate an even greater wave of attacks against refugees. American communities could be experiencing a similar crime wave from refugee resettlement.

However, the situation in the United States is different in several ways. First, the United States has accepted around 60,000 refugees each year since the passage of the Refugee Act of 1980 and has an existing infrastructure for mass resettlement. Germany, in contrast, went from processing fewer than 30,000 refugees in 2010 to over 430,000 in 2015 (Katz, Noring, and Garrelts 2016). Such a major influx creates confusion in the local community that can lead to violent frustration with the refugee situation. Second, German refugee resettlement is much denser than in the United States. In 2015, the German capital, Berlin, resettled 42,000 refugees, which amounted to more than 60 refugees per square kilometer (Katz, Noring, and Garrelts 2016). In the United States, the largest resettling city in 2015 was Houston, with 1,869 refugees, or a density of 1.15 per square kilometer[21]. Refugee resettlement's density in Germany strains public resources and makes the process more visible to the public. Both the high refugee volume and resettlement density contribute to the increase in civilian crime in Germany, but would not lead to more native-born crime in the United States.

[21]Data on refugee resettlement are from the WRAPS Center. Information on Houston's land area can be found here: http://www.houstontx.gov/abouthouston/houstonfacts.html

Summary

America's admission and resettlement process selects out refugees who may be inclined to commit crimes while in the United States. In addition, many refugees who are resettled in the United States have existing familial and cultural ties in the country that assist them in integrating more quickly and becoming economically self-sufficient. Empirical evidence suggests that refugees, as a sub-population of immigrants, may even reduce crime.

However, free case refugees are not necessarily resettled into communities with the resources to engender economic self-sufficiency and successful integration. Poor English skills and low literacy rates are barriers to employment for some free cases. Significant cash and medical assistance for these refugees only lasts for the first three months after arrival. Economic hardship, coupled with the trauma of refugee resettlement, past experience with violence in their home country, and integration challenges may cause refugees to commit crimes. Further, characteristics of the communities into which they are resettled may also contribute to the increase in refugee criminality. More research is needed to understand the relationship between refugees and crime in the United States.

Study 1: Free Case Refugees' Effect on Crime

Data

Dependent Variables. Study 1 estimates refugee resettlement's *per capita* effect on U.S. county crime rates. The dependent variables in this analysis are the murder, violent crime, and property crime rates per 100,000 people in a county in a given year. I explore refugee resettlement's effect on three measures of county crime, but focus primarily on homicides for two reasons. First, crime data in the United States are aggregated by the *FBI Uniform Crime Report*, which compiles voluntarily reported crime statistics from local police agencies across the country. These data are often considered unreliable[22]. However, consistent with past research using the FBI's crime data, I argue that homicides are systematically reported because the crime's severity and rarity would encourage local agencies to document the incident (Mosher, Miethe, and Hart 2010). Second,

[22]Not every state requires municipalities to report crime, so the data are systematically under-reported for most crimes.

refugee migration is small compared to the overall crime rate[23]. If refugees are committing more crime than other citizens, then a statistical model would be more sensitive to crime, like homicides, which occurs with relatively low frequency and high variation across counties and years.

I compiled all crime by county as reported in the *FBI Uniform Crime Report* from 2003 to 2014. Table 1 provides summary statistics for murder, violent, and property crime in the United States over the 11 year period. Observations are filtered to include only counties with a reporting rate of greater than 75%, so all estimates are below top-line FBI statistics. Overall, the distribution of murder, violent crime, and property crime rates are heavily skewed, so my dependent variables are then the logged murder, violent, and property crime rates per 100,000 people in a county in a given year.

Table 1: Crime in the United States, 2003 to 2014

Crime	N	Per Year	National Rate	Per County	County Rate
Murder	128,988	11,726	3.91	5.21	3.32
Violent	6,661,644	605,604	201.8	442	269.1
Property	79,200,000	7,200,000	2,400	32,00	2,342

Rates are measured as crimes committed per 100,000 people.

Independent Variable. To estimate refugee resettlement's effect on a county's murder rate, I compiled a comprehensive data set of refugee resettlement in the United States. The Refugee Processing Center (WRAPS) maintains reports on refugee arrivals into the United States since 2003 by nationality and destination. However, some refugees arrived in the United States from host countries that have been displacing citizens since prior to 2003. The Office of Refugee Resettlement will be more likely to place these individuals in counties with established resettlement communities (USCIS 2017). Therefore, such a refugee's placement into a county in the United States is endogenous to characteristics of refugees themselves.

To counteract such issues, I select migrants only from countries with refugee crises which began between 2003 and 2014[24]. These free-cases are resettled into communities where voluntary agencies have the resources to resettle them, but where the refugees do not have any pre-existing social or cultural ties to assist them in integration or economic self-sufficiency. These refugees, therefore,

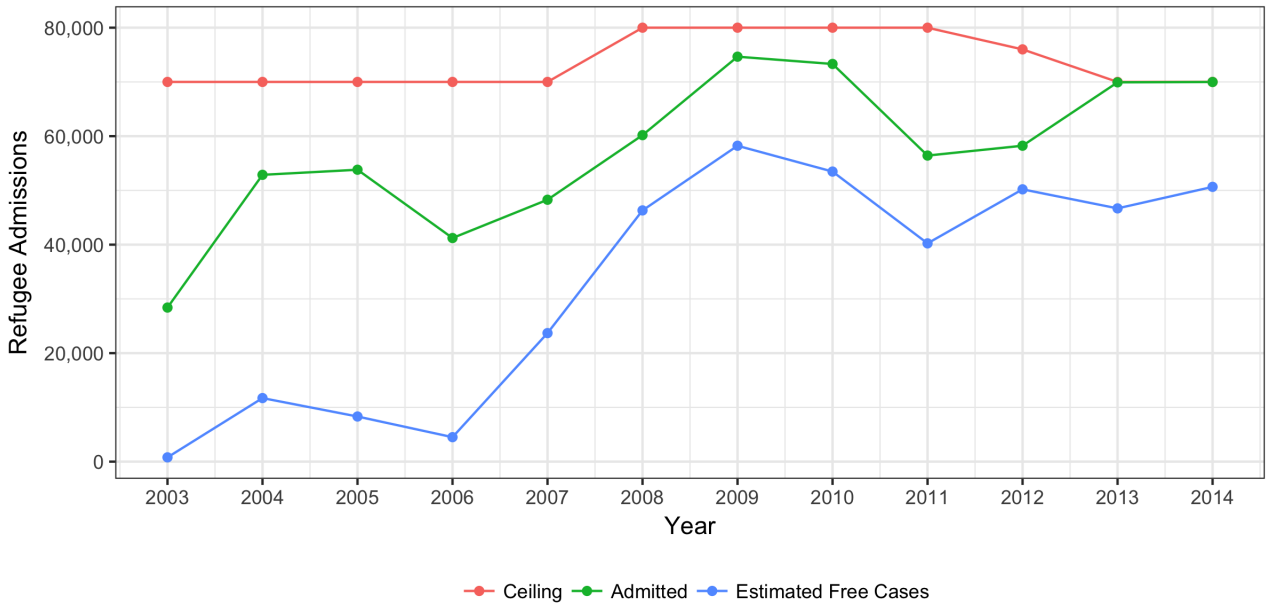
[23]For instance, in 2016, there were 1.2 million violent crimes in the nation compared to only 96,000 admitted refugees. However, in 2016, there were 15,000 homicides.

[24]Table 3 in the appendix shows the countries from which "free-case" refugees originate.

represent the ideal case for testing social disorganization and economic opportunity theory, and their resettlement is exogenous to personal characteristics that may be correlated with crime. Overall, there are 8 countries from which free-case refugees arrived from 2003 to 2014, and America resettled 394,825 refugees from these countries during that time period.

Figure 1 shows the refugee ceiling set by the president, the total refugees admitted to the United States according to the WRAPS center, and the estimated free-case refugees admitted from 2003 to 2014. Prior to 2007, the United States was only accepting refugees from two countries with many free cases: Democratic Republic of the Congo and Eritrea. Beginning in 2007, when the United States began to accept thousands of Iraqi and Bhutanese refugees, free cases made up a significant portion of admissions[25].

Figure 1: U.S. Annual Refugee Ceiling and Admissions, 2003 to 2014



Ceiling set by the president for refugee admissions each year as well as the total number of refugees admitted and the estimated number of admitted free-case refugees.

[25]Iraqi refugees are an exceptional case. The United States has been accepting Iraqi refugees since the 1990s. However, I argue that Iraqi refugees arriving after 2007 are mostly free cases for two reasons. First, many Iraqi refugees from prior to 2007 were ethnic Kurds escaping government oppression. After 2007, many Iraqi refugees were escaping escalating violence in the Iraq War and were ethnically Arab. These groups are historically hostile towards one another and, therefore, resettlement agencies would be unlikely to place them in similar communities. Second, many Iraqi refugees who arrived in the United States prior to 2003 repatriated after the initial phase of the Iraq War. When violence escalated in 2007, they returned to the United States. As a robustness check, I include results that exclude Iraqi refugees from my analysis.

Refugee destinations are aggregated to the county level[26]. Each year an average of 230 counties resettled refugees in the United States. In total, WRAPS had data on 2,575 instances of a county accepting free case refugees over the 11 year sample[27]. The average resettling county in the data set received 115 refugees in a year.

Less than 10% of counties in the United States accept refugees in a given year and the distribution of refugee resettlement rates is heavily skewed. My independent variable is then the log of the one-year-lagged count of refugees resettled in a county. A one-year lag is used to ensure that all refugees recorded as resettled in a county have arrived when a crime occurs in a given year[28]. Additionally, refugee assistance in the United States is limited primarily to the first three months of arrival (Evans and Fitzgerald 2017), so I assume that refugees do not begin to experience economic deprivation until they are required to be entirely self-sufficient. The one year lag is the closest period of analysis to when refugees lose many of their benefits. All refugee-related benefits expire after three years[29]. Because refugee assistance is so limited, I assume that a refugee's resettlement location is fixed for the first year of arrival[30]. Figure 2 shows the geographic areas into which free case refugees are resettled. The largest resettlement areas are medium and large-sized metropolitan areas in Southern California and the Northeast.

Control Variables. Refugee resettlement's effect on crime rates may be moderated by the economic characteristics of the counties into which they are resettled (Adelman et al. 2017; Ousey and Kubrin 2009; Reid et al. 2005). Therefore, I include a control variable for each county's unemployment rate, the percentage of workers in a county employed in manufacturing, and the percentage of workers in low-skill service sector jobs. Manufacturing jobs provide high wages to low-skill workers, but, since the 1960s, such employment has been steadily replaced by low-skill service sector jobs that provide lower wages and less stability Adelman et al. (2017). I expect that areas with more manufacturing jobs will have lower crime and those with more low-skill sector employment will have higher crime

[26]I used a Census Designated Places to county crosswalk provided by the Missouri Census Data Center. Some cities straddle more than one county, so in those instances, I weighted the refugees resettled by the proportion of the town located within each county according to the town's population in 2000.

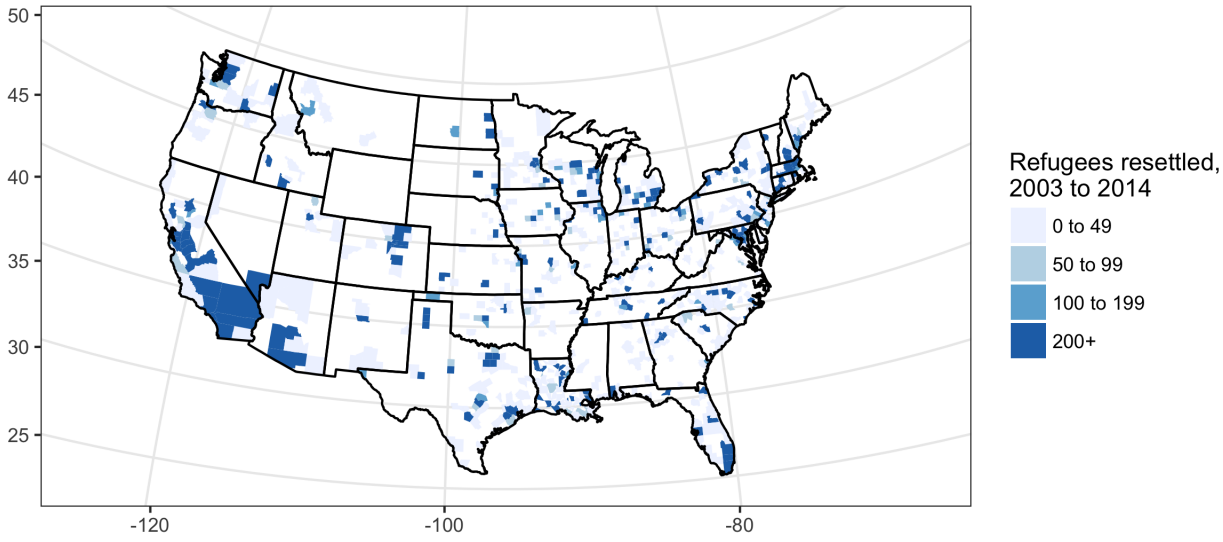
[27]All refugees are aggregated at the county level regardless of country-of-origin to increase statistical power.

[28]Results for all analyses without a lag are included in table 11 the Appendix.

[29]I include results from a three-year lag in Table 12 in the appendix as well.

[30]Free-case refugee resettlement take place over several years. Once refugee's have arrived in a community, continued resettlement in that county is likely correlated to refugees having already arrived there. To control for some of this endogeneity, I include a robustness check that only measures refugee resettlement for a group for five-years after they begin resettling into the United States in Table 14 in the appendix.

Figure 2: U.S Refugee Resettlement Locations, 2003 to 2014



Geographic distribution of estimated free case refugee resettlement across the United States from 2003 to 2014. Shading corresponds to the magnitude of resettlement.

rates. Both categories are defined using Boston (1990)'s labor segmentation scheme. I also include a control variable for the log of the median income in a county. The final economic control variable is a metric for a county's economic deprivation, which includes the following variables: the percentage of African American residents in the county, the percentage of people below the poverty line, and the percentage of households headed by an unmarried woman. Similar deprivation metrics have been used by Adelman et al. (2017) and Reid et al. (2005). I use the log of the deprivation measure to maintain a more normal distribution.

The next control variable accounts for the percentage of the population that is between the ages of 15 and 29. Studies have found that criminal behavior is more prevalent among younger populations (Moffitt 1993; Farrell, Laycock, and Tilley 2015). This variable controls for the presence of youth as a contributor to crime rates. I also include a control for the percentage of individuals in the county who are foreign born to control for the effect of ethnic heterogeneity on crime, consistent

with *social disorganization theory*. This variable is logged to control for the distribution's skew. I also measure the number of drug-related arrests per 100,000 people, which, according to Ousey and Lee (2007) is correlated with homicides[31].

The measure for unemployment is available for each year and each county of the study through data from the Bureau of Labor Statistics. The measure for drug arrests by county was calculated from the *FBI Uniform Crime Report* county-level data. All demographic and economic control variables (other than unemployment) were calculated using the 5-year ACS surveys taken from 2009 to 2014. For years prior to 2009, I assume that the change in those variables scales linearly to allow for greater variation in the data[32].

The 2000 Census data is the most comprehensive available for population data by county, but using those data, I can only control for the effect of unemployment and drug arrests on my estimation. All other control variables calculated from the Census do not vary by year. However, I also include county and year fixed-effects, which should capture much of the county-specific and year-specific characteristics that affect crime rates. The ACS data make available the various moderators outlined above, but the sample sizes are smaller and pose inferential challenges for aggregating at the county level. Therefore, estimates from both analyses are included in the results section. Both the 2000 Census data and the ACS data were compiled using the Integrated Public Use Microdata series (IPUMS) website[33].

Methods

Previous studies of the relationship between immigration and crime employ an OLS regression with similar economic and social control variables as the ones listed above (Ousey and Lee 2007; Ousey and Kubrin 2009; Reid et al. 2005; Adelman et al. 2017). However, past research suffered from several methodological problems that inhibit causal inference. First, their independent variable is immigration into American cities. With this explanatory variable, one cannot determine whether low crime rates attract immigration or whether immigration reduces crime. Second, stud-

[31]The drug arrest rate is also logged to obtain a more normal distribution.

[32]Linear interpolation may bias my results upward. Sudden and brief demographic or economic shifts that are correlated with crime are averaged out by linear interpolation and may magnify the estimate for refugee resettlement's effect on crime through random variance. However, such sudden demographic shifts would have to occur only within the nine year period in which linear interpolation is used to bias the model.

[33]Tables 5 and 4 in the appendix provide summary and crime statistics from the Census and ACS data.

ies in which cities are the unit of analysis may be biased by large immigrant communities that already exist in urban areas. Third, these studies reason that immigration's effect on crime varies with community characteristics without evaluating this claim empirically. Their models do not include interaction effects, so determining the correlation between immigration and drug arrests, for example, is not possible. My study resolves these problems by treating refugee resettlement as exogenous and including secondary models with interactions between several control variables and refugee resettlement.

To estimate the relationship between free case refugee migration and crime rates, I employ an OLS regression with clustered standard-errors by county and two-way year-county fixed-effects for all counties in the United States from 2003 to 2014. Clustered standard-errors control for heteroskedastic error among different counties. Fixed effects control for time invariant unobserved characteristics in each county and county invariant unobserved characteristics in each year that may be correlated with crime. The base regression specification is:

$$\begin{aligned} log(CrimeRate)_{i,t} = \beta_0 + \beta_1 * log(RefugeeResettlement)_{i,t-1} + \beta_2 \\ * log(DrugArrests)_{i,t} + \beta_3 * Unemployment_{i,t} + \delta_t + \gamma_i + \epsilon_{i,t} \end{aligned} \quad (1)$$

$log(CrimeRate)_{i,t}$ is the murder, violent, or property crime rate in county i in year t. $log(RefugeeResettlement)_{i,t}$ is the log of the total refugees resettled in county i in year *t-1*. $log(DrugArrests)_{i,t}$ is the log of the drug arrests per 100,000 people in county i in year t and $Unemployment_{i,t}$ is the unemployment rate in county i in year t. δ_t is a year fixed-effect, γ_i is a county fixed effect, and $\epsilon_{i,t}$ is the stochastic error term associated with each county-year combination.

I also test whether refugee resettlement's effect on a county's crime rate changes in areas with high drug crime and high economic deprivation as compared to those without[34]. I, therefore, test the following model:

[34]I coded a county as having a high rate of drug arrests or high economic deprivation if its drug arrest rate or economic deprivation score was in the 75th percentile for all counties. Counties with more than 609 drug arrests per 100,000 people were treated as areas with high drug arrest rates. Counties with an economic deprivation score of 62 out of 300 or more were considered areas with high economic deprivation.

$$log(CrimeRate)_{i,t} = \beta_0 + \beta_1 * log(RefugeeResettlement)_{i,t-1} + \beta_2 * log(DrugArrests)_{i,t} + \beta_3 * Unemployment_{i,t} + \beta_4 * log(RefugeeResettlement)_{i,t-1} * DrugArrestHigh_{i,t} + \delta_t + \gamma_i + \epsilon_{i,t} \quad (2)$$

Using the ACS data, I fit models 1 and 2 with the additional control variables specified above:

$$log(CrimeRate)_{i,t} = \beta_0 + \beta_1 * log(RefugeeResettlement)_{i,t-1} + \beta_2 * log(DrugArrests)_{i,t} + \beta_3 * Unemployment_{i,t} + \beta_4 * log(Deprivation)_{i,t} + \beta_5 * Manufacturing_{i,t} + \beta_6 * LowSkillSector_{i,t} + \beta_7 * YoungPopulation_{i,t} + \beta_8 * log(ForeignBorn)_{i,t} + \beta_9 * log(MedianIncome)_{i,t} + \delta_t + \gamma_i + \epsilon_{i,t} \quad (3)$$

$$log(CrimeRate)_{i,t} = \beta_0 + \beta_1 * log(RefugeeResettlement)_{i,t-1} + \beta_2 * DrugArrestHigh_{i,t} + \beta_3 * log(RefugeeResettlement)_{i,t-1} * DrugArrestHigh_{i,t} + \alpha_{i,j,t} + \delta_t + \gamma_i + \epsilon_i, t \quad (4)$$

$\alpha_{i,j,t}$ is the effect of control variable j in year t in county i. Model 5 is identical to model 4 except with the substitution of $DeprivationHigh_{i,t}$ for $DrugArrestHigh_{i,t}$ to test the interaction of high economic deprivation with refugee resettlement.

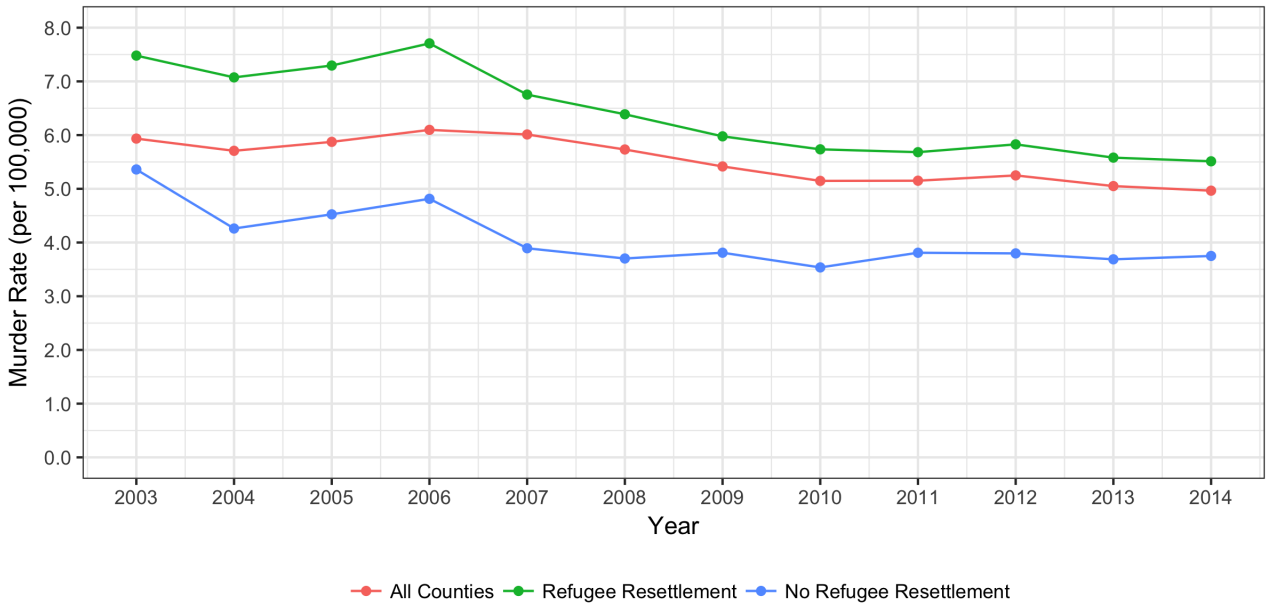
Results

Figures 3, 4, and 5 show the average crime rates per 100,000 people in U.S. counties from 2003 to 2014. The graphs split counties by whether or not they resettled refugees and include the overall murder, violent, or property crime rates in a given year. The graphs demonstrate that counties which resettle refugees have an overall higher crime rate than those which do not, but this primarily reflects that refugees are largely resettled into urban communities with higher crime and more people[35]. The graphs show that all crime rates have been declining since 2007. This corresponds to a precipitous increase in refugee resettlement due to the Iraq War and Bhutanese ethnic conflicts. However, further analysis is necessary to determine the extent, if any, that refugees influenced this decline in murder rate.

Model 1's results do not support the theory that refugees increase crime rates in counties in the United States. Instead, the results indicate that free case refugee resettlement is correlated with a statistically significant *decrease* in murder rates ($\beta = -0.02$, 95% CI = [-0.03, -0.01]), violent

[35]See Figure 2 for the geographic distribution of refugee resettlement.

Figure 3: U.S. Murder Rates, 2003 to 2014



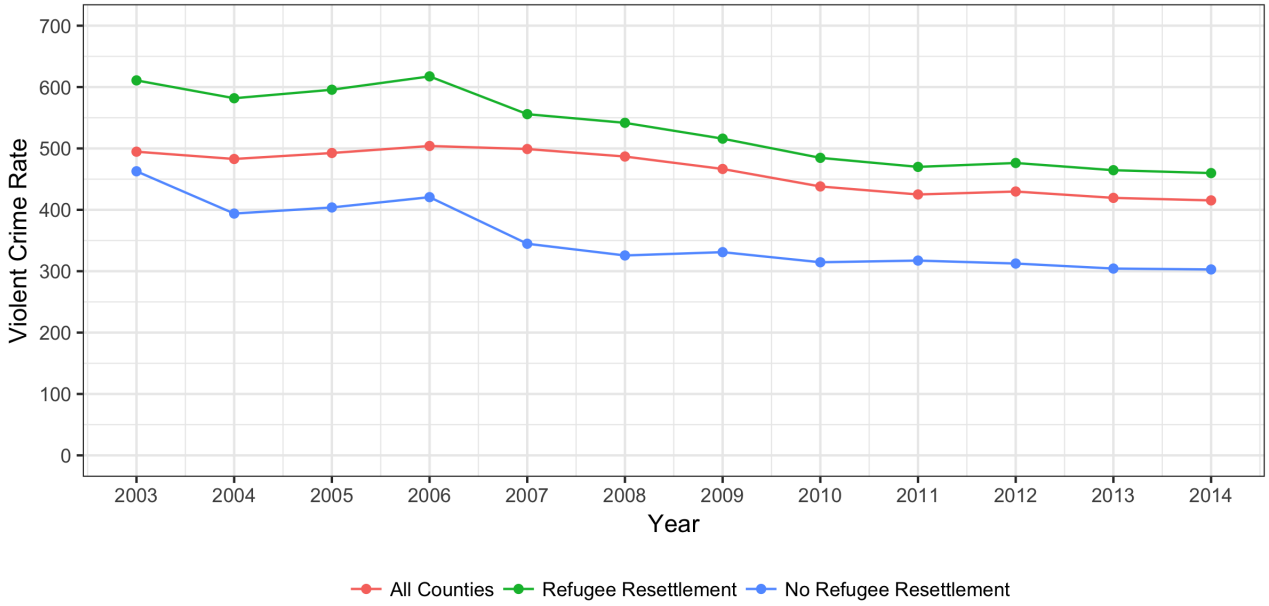
Average murder rates (per 100,000) in U.S counties from 2003 to 2014. Graph splits counties by whether or not they resettled free-case refugees. Average murder rates are weighted by 2000 county population.

crime rates ($\beta = -0.01$, 95% CI = [-0.02, -0.01]), and property crime rates ($\beta = -0.01$, 95% CI = [-0.01, -0.004])[36]. This effect is statistically significant but practically small. A 1% increase in refugees resettled over 11 years would decrease the murder rate in that county by 0.02% over the same period. A county with a murder rate of 4 per 100,000 would have to resettle an additional 1,200 refugees over 11 years to reduce its murder rate by 1. Such an increase in resettlement may strain VOLAG and federal resources and produce diminishing returns to safety.

Using the ACS data fitted to model 3, I also find a statistically significant, negative relationship between refugee resettlement and murder rates ($\beta = -0.01$, 95% CI = [-0.02, -0.004]). However, the effect of refugee resettlement on violent crime ($\beta = -0.004$, 95% CI = [-0.01, 0.004]) and property crime ($\beta = -0.003$, 95% CI = [-0.01, 0.004]) are both statistically insignificant. Table 8 in the appendix shows the full results of model 3. All the point estimates show a negative but substantively small relationship between refugee resettlement and crime. A county with a murder rate of 4 per 100,000 would have to resettle an additional 1,786 refugees over 11 years to reduce its murder rate by 1. Figure 6 shows the predicted effect of refugee resettlement on murders as

[36]Table 6 in the appendix shows the full results from the OLS regression.

Figure 4: U.S. Violent Crime Rates, 2003 to 2014



Average violent crime rates (per 100,000) in U.S counties from 2003 to 2014.

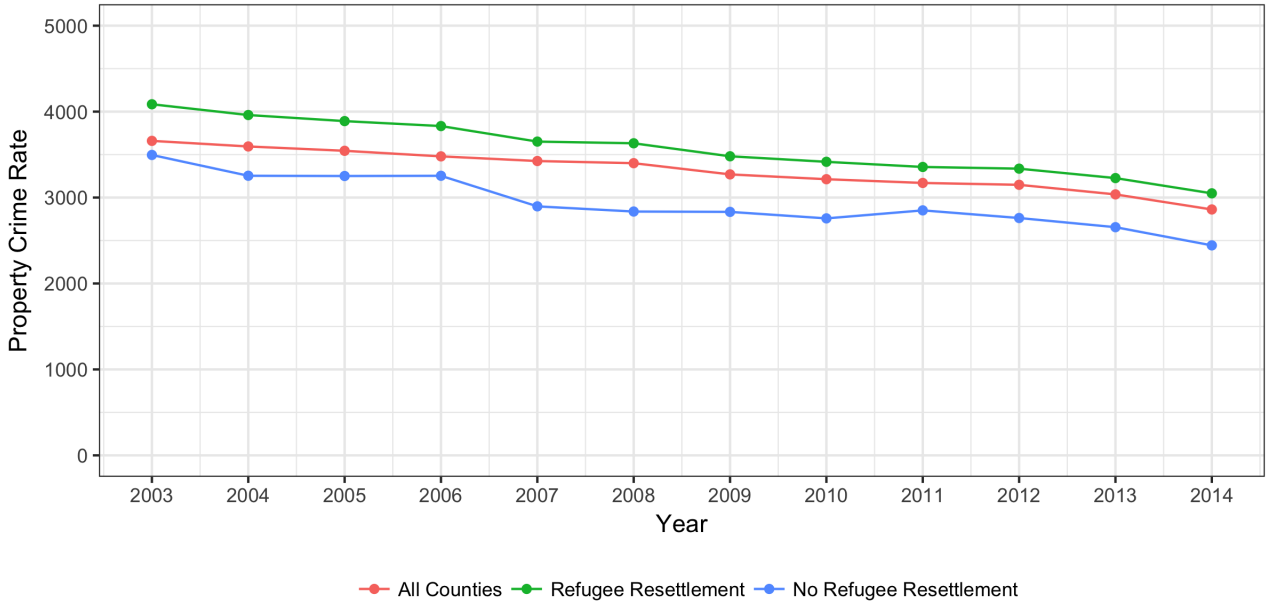
estimated by model 3. The trend line is visually negative but over a large range of resettled refugees. Models 1 and 3 provide substantial evidence that refugee resettlement is linked to reduced murder rates in U.S. counties. However, the results are inconclusive as to whether refugee resettlement reduced violent or property crime.

Turning now to the interaction effects in model 2 using the Census data[37], I find that the negative relationship between refugee resettlement and murder holds in areas with a high drug arrest rate ($\beta = -0.02$, 95% CI = [-0.03, -0.01]), but that the change in refugee resettlement's effect in areas with high drug arrests is insignificant ($\beta = 0.01$, 95% CI = [-0.01, 0.012]). Thus, refugee resettlement has a small but statistically significant effect on murder rates in areas with high drug arrests. The change in the effect is positive, so the point estimate on the effect is slightly smaller, but that change is insignificant.

I do not find that refugee resettlement's effect on violent crime is statistically significant in areas with high drug crime ($\beta = -0.01$, 95% CI = [-0.01, 0.001]), but the change in the relationship is statistically significant and positive ($\beta = 0.01$, 95% CI = [0.0002, 0.01]). These results provide

[37]Full results from model 2 are available in Table 7 in the appendix.

Figure 5: U.S. Property Crime Rates, 2003 to 2014



Average property crime rates (per 100,000) in U.S counties from 2003 to 2014.

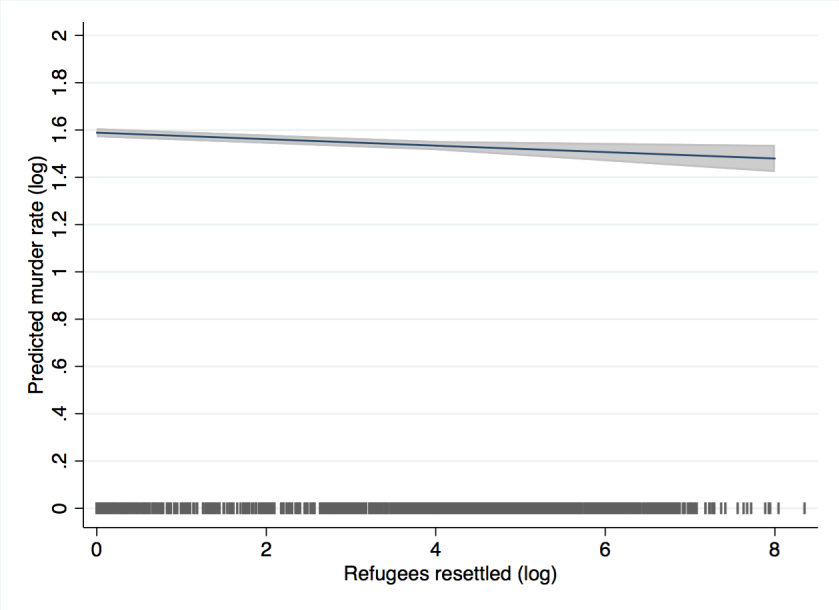
some evidence that a high rate of drug arrests attenuates refugee resettlement's effect on violent crime.

Finally, I find evidence that refugee resettlement has a negative, statistically significant relationship to property crime rates in areas with high drug arrest rates ($\beta = -0.01$, 95% CI = [-0.01, -0.0007]), but that the change in the effect is statistically insignificant ($\beta = 0.005$, 95% CI = [-0.0032, 0.01]). Thus, refugee resettlement's negative effect on property crime, as estimated with model 1, holds in areas with a lot of drug crime. The point estimate is about half as large in magnitude, but the reduction in the effect is statistically insignificant.

Using the ACS data and the controls in Model 4[38], I also find a significant, negative relationship between refugee resettlement and murder rates in areas with high drug arrest rates ($\beta = -0.01$, 95% CI = [-0.02, -0.003]). Consistent with model 2, the change in the relationship between refugee resettlement and murder rates was statistically insignificant ($\beta = 0.003$, 95% CI = [-0.01, 0.01]). Refugee resettlement's negative effect on murder rates holds in areas with high drug crime and the change in the effect is not statistically different.

[38]Full results from model 4 are available in Table 9 in the appendix

Figure 6: Refugee resettlement's predicted effect on murder rates



Predicted effect of additional refugee resettlement on the murder rate in a county using model 3. The gray area around the estimated predicted effect is the 95% confidence interval. Ticks on the x-axis are the distribution of counties by log of refugees resettled.

Turning to property crime, I find that refugee resettlement has a statistically insignificant, negative effect in areas with high drug crime ($\beta = -0.002$, 95% CI = [-0.01, 0.01]). The change in the effect is statistically significant and positive ($\beta = 0.01$, 95% CI = [0.002, 0.02]), which provides evidence that a high rate of drug crime moderates the effect of refugee resettlement on property crime. These results are contrary to those from model 2, which found that refugee resettlement had a significant, negative relationship with property crime in areas with high drug crime.

Refugee resettlement did not have a statistically significant effect on violent crime ($\beta = -0.0003$, 95% CI = [-0.01, 0.01]), nor a significant change in effect ($\beta = 0.01$, 95% CI = [-0.001, 0.02]) in areas with high drug crime. Figure 11 in the appendix shows the predicted effect of refugee resettlement on property crime rates in areas with and without high drug arrest rates. The effect in areas with high drug crime is nearly linear, which demonstrates that the point estimate is substantively and statistically insignificant.

The results from model 5, which includes the interaction of refugee resettlement with a metric for economic deprivation, yielded mixed results [39]. Refugee resettlement's effect on murder rates

[39]Full results from model 5 are available in Table 10 in the appendix

in areas with high economic deprivation was statistically significant ($\beta = -0.02$, 95% CI = [-0.03, -0.005]), but the change in the effect was negative and statistically insignificant ($\beta = -0.01$, 95% CI = [-0.03, 0.01]). Refugee resettlement into areas with high economic deprivation, therefore, reduced the murder rate, but economic deprivation did not change refugee resettlement's effect on crime. In fact, the interaction term's point estimate suggests that the effect of refugee resettlement may be magnified in areas with high economic deprivation, but the estimate is insignificant. These results, with those from models 1 through 4, are further evidence that refugee resettlement lowers murder rates regardless of a community's crime level or economic characteristics.

Consistent with models 3 and 4, refugee resettlement's effect on property crime in areas with high economic deprivation was statistically insignificant ($\beta = -0.01$, 95% CI = [-0.01, 0.002]), but the change in the effect was also insignificant ($\beta = -0.01$, 95% CI = [-0.02, 0.01]). Model 5 provides no evidence that refugee resettlement affects property crime in areas with high economic deprivation, nor that the change in the effect in areas with high economic deprivation compared to all other counties is statistically significant.

Finally, refugee resettlement has a statistically insignificant effect on violent crime in areas with high economic deprivation ($\beta = -0.01$, 95% CI = [-0.02, 0.0008]). However, the change in refugee resettlement's effect between areas with high economic deprivation and those without is significant ($\beta = -0.02$, 95% CI = [-0.03, -0.001]). The interaction term's significant and negative point estimate suggests that refugee resettlement's effect is greater in areas with higher economic deprivation. Yet, the insignificant linear combination indicates that refugee resettlement's overall effect is insignificant in areas with high economic deprivation. Figure 12 in the appendix shows refugee resettlement's predicted effect on violent crime in areas with and without economic deprivation.

Robustness Checks

As a robustness check, I re-estimated Model 3 without including refugees from Iraq, who may bias the estimates by resettling into pre-existing Iraqi communities in the United States [40]. The results are mixed. Refugee resettlement's effect on murder rates is still small and statistically significant ($\beta = -0.01$, 95% CI = [-0.02, -0.01]). Resettlement's effect on property crime is also small and statistically significant ($\beta = -0.01$, 95% CI = [-0.01, -0.0002]). However, without

[40] Full results from excluding Iraqi refugees are available in Table 13 in the appendix

including refugees from Iraq, refugee resettlement's effect on violent crime remains statistically insignificant ($\beta = -0.01$, 95% CI = [-0.01, 0.002]). Iraqi refugees were approximately one-third of all estimated free cases resettled in the United States from 2003 to 2014, so removing them limits my analysis' power. The enduring statistical significance of refugee resettlement's effect on murder rates points to the robustness of that finding. Further, refugee resettlement's effect on property crime is insignificant when including Iraqi refugees. These results suggest that including refugees from Iraq who are potentially not free cases in the sample may bias their effect on property crime downward.

To address the problem of multi-year migration, I limit my analysis to refugees who arrived in the United States within the first five-years of the conflict that created free cases [41]. Refugee resettlement's effect on murder ($\beta = -0.02$, 95% CI = [-0.03, -0.01]), property crime ($\beta = -0.02$, 95% CI = [-0.02, -0.01]), and violent crime ($\beta = -0.01$, 95% CI = [-0.02, -0.01]) are all statistically significant. These results suggest refugees reduce crime in the first few years after their arrival, but, based on the findings in model 3, these results decrease over time. These findings may also be explained by the federal money given to communities that resettle refugees. These benefits may go towards direct or indirect crime prevention but diminish over time.

Finally, I also include an analysis with a logged, three-year lagged variable for refugee resettlement to test whether refugees are more prone to commit crimes after all of their benefits have expired [42]. I find that refugee resettlement continues to have a significant and small negative relationship with murder rates ($\beta = -0.01$, 95% CI = [-0.02, -0.0004]). However, the effect is positive but insignificant for property crime ($\beta = 0.001$, 95% CI = [-0.01, 0.01]), and negative and insignificant for violent crime ($\beta = -0.001$, 95% CI = [-0.01, 0.01]). These results suggest that refugees maintain their small, significant negative effect on murder rates over time. The other insignificant results conform to the findings in the main analysis.

Discussion

This study estimated free case refugee resettlement's effect on murder, violent crime, and property crime rates in counties in the United States from 2003 to 2014. The results provide evidence that

[41] Full results from limiting multi-year migration are available in Table 14 in the appendix.
[42] For full regression estimates, see Table 12 in the appendix.

resettling refugees in a county leads to a practically small but statistically significant reduction in the murder rate in the next year. I find some evidence that refugee resettlement reduced violent and property crime when estimating with model 1, but that effect disappeared after controlling for several other factors that are correlated with crime. The results largely held after limiting refugee resettlement's time-frame to five years and excluding Iraqi refugees from the sample.

Further, refugee resettlement's effect on murder rates retains significance in counties that have high drug crime and economic deprivation. However, results were more mixed when estimating refugee resettlement's effect on violent and property crime. The study provided some evidence that community characteristics attenuate refugee resettlement's negative effect on violent and property crime, but they did not form a clear pattern.

My study has several limitations. First, my metric for free case refugees is only an estimation. Free cases are approximately one-third of all refugee resettlement in a given year. However, publicly available data do not distinguish free cases from all other resettlement. As a result, I may be including refugees in my sample as free cases who are resettled into communities in which they have preexisting social or familial ties. Thus, my estimates could be biased upward by incorrect refugee classification. Further, I may also exclude free cases from countries with refugee crises that extend further back than 2003[43].

Second, all models in the study assume refugee migration is fixed for the first year of resettlement. If this assumption does not hold, then I am testing whether refugees who no longer live in a community affect crime rates. Further research is needed to understand whether this assumption about refugee migration is valid.

Finally, this analysis controls for endogenous characteristics of refugees, which affect their resettlement location. However, the analysis does not control for non-random resettlement location in the United States. A free case refugee may not be resettled into a community in which they have social ties, but they are likely resettled into a community with experience resettling refugees. Thus, some unobserved community characteristics may affect refugee criminality once they are resettled.

[43]For example, the United States continues to resettle Sudanese free cases, but VOLAGs have resettled Sudanese refugees since 2000.

Study 2: Southeast Asian refugee resettlement's effect on crime, 1970 to 1990

The above analysis estimates refugee resettlement's *per capita* effect on crime rates in counties in the United States. Using data only on estimated free case refugees controls for endogeneity between resettlement location and refugee because the refugees do not have any family or social ties that would affect their resettlement location. However, this does not mean that refugees are randomly placed throughout the United States. Instead, they are placed with VOLAGs which have the resources at that time to resettle free cases in a specific community (Ferwerda, Flynn, and Horiuchi 2017). Counties that resettle refugees likely already have a history of doing so, which makes them intrinsically different from all other counties in the United States. Such counties may also have a history of resettling *free cases* specifically, indicating that an infrastructure is already in place to assist similar refugees with integration. Both of these considerations demonstrate that controlling only for endogeneity of refugee characteristics does not eliminate bias from the estimation. Another analysis is needed to understand refugee resettlement's effect in counties without a pre-existing infrastructure to resettle refugees.

Study 2 estimates the effect of a county resettling southeast Asian refugees between 1975 and 1980 on crime rates in that county. Prior to 1975, only a few thousand southeast Asian immigrants lived in the United States (Zong and Batalova 2016)[44]. After the Fall of Saigon in 1975, the United States resettled more than 140,000 Vietnamese, Cambodian, and Laotian refugees (Interagency Task Force for Indochina Refugees 1975). The sudden influx of refugees led to the passage of the Refugee Act of 1980 to codify refugee resettlement practices and increase the refugee admissions ceiling (Zong and Batalova 2016). Through the Refugee Act, the United States accepted an additional 166,000 refugees from southeast Asia in 1980 (Office of Refugee Resettlement 1980). From 1975 to 1980, many communities in the United States, which had not before resettled refugees, received southeast Asian refugees in large numbers. These communities are excellent test cases for refugee resettlement's effect on crime in counties across the United States. Using a difference-in-differences regression analysis, I estimate the effect of resettling a large number of southeast Asian

[44] According to the 1970 census, only 4,600 individuals were living in the United States in 1970 who were born in Vietnam, Laos, or Cambodia.

refugees from 1975 to 1980 on a county's crime rate as compared to counties that did not receive a significant influx of refugees during that time.

Data

Dependent Variables. The dependent variables for this analysis are measures for the murder, robbery, and overall crime rates per 100,000 people in counties in the United States from 1970 to 1990. 1970 to 1975 is the time period prior to resettling southeast Asian refugees in a given county, 1975 to 1980 is the time period in which counties were treated with refugee resettlement, and 1981 to 1990 is the period after resettling refugees in a given county. Crime data were compiled from the *FBI Uniform Crime Report* and aggregated to the county level for each year[45].

Independent Variable. The independent variable for this analysis is a dichotomous measure of whether or not a county was "treated" with southeast Asian refugees from 1975 to 1980. I designate a county as treated if the percentage of foreign born Vietnamese, Cambodian, and Laotian individuals living within that county who immigrated from 1975 to 1980 comprised 10% or more of the foreign born population in that county in 1980. Treatment designation is limited to counties with 100 or more foreign born residents in 1980. Overall, there were 136 counties in which southeast Asian refugees made up 10% or more of the foreign born population[46]. I calculated both the estimated southeast Asian refugees by county and the total foreign born population by county using 1980 census data from IPUMS. Figure 7 shows the geographic distribution of the 136 counties that are treated with a significant influx of southeast Asian refugees. Unlike in the previous analysis, many treated counties are in the Midwest and the South.

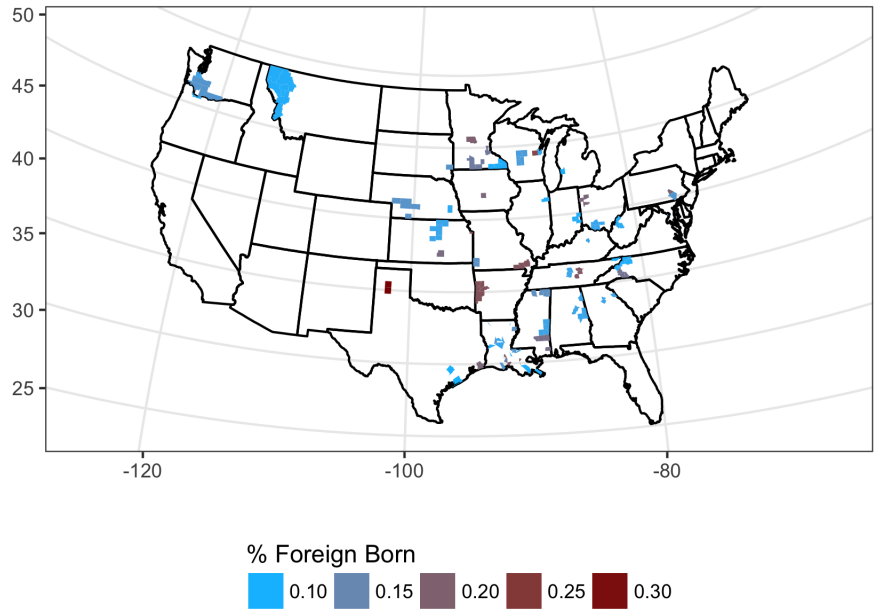
Methods

To estimate the effect of resettling southeast Asian refugees from 1975 to 1980 on crime rates, I employ a difference-in-differences analysis with the following specification:

[45]Overall, there were 383,891 murders or 19,195 per year; 9,282,897 robberies or 464,145 per year; and 234,000,000 crimes or 11,700,000 per year in the 20-year sample. Summary statistics for all variables for this analysis are available in Table 15 in the appendix.

[46]The average treated county resettled 291 southeast Asian refugees. The minimum resettled by a treated county was 12 in Alleghany County, NC. The maximum resettled by a treated county was 5040 in Orleans Parish, LA. The county with southeast Asian refugees comprising the largest percentage of foreign born individuals was Randall County, TX at 31.21%

Figure 7: Geographic distribution of treated counties



Geographic distribution of treated counties. The figure's gradient scale corresponds to the percentage of foreign born residents that are southeast Asian refugees.

$$log(CrimeRate)_{i,t} = \beta_0 + \beta_1 * Treated_i + \beta_2 * After1980_t + \beta_3 * Treated_i * After1980_t + \epsilon_{i,t} \quad (5)$$

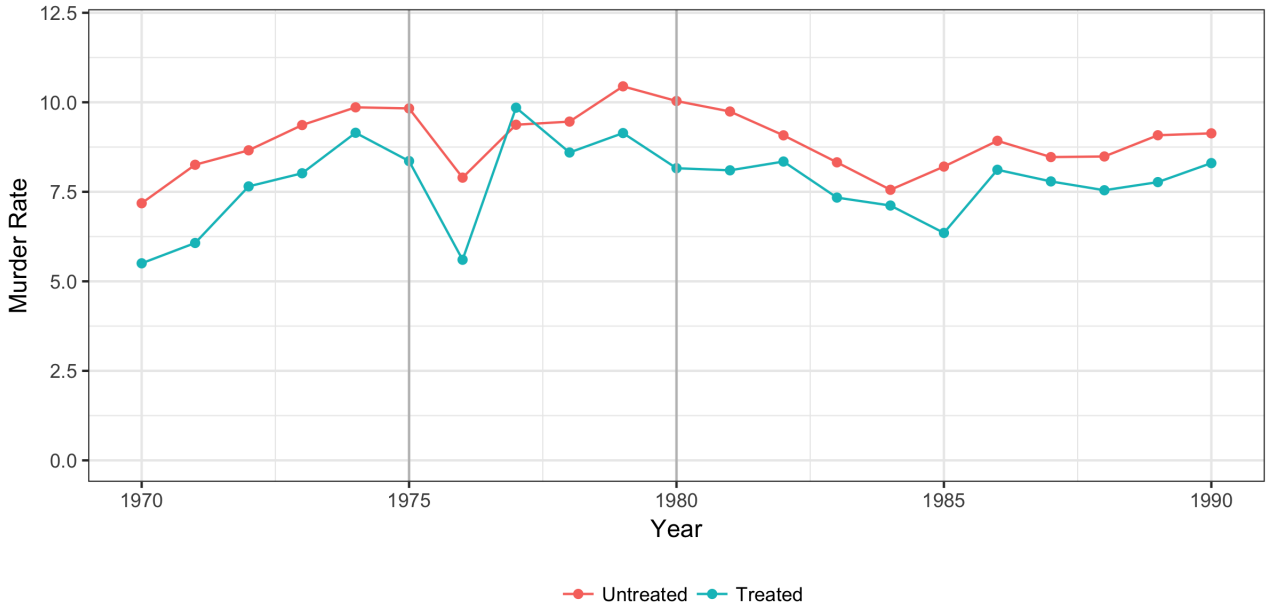
Where $log(CrimeRate)_{i,t}$ is the logged murder, robbery, or overall crime rate per 100,000 people in county i in year t. $Treated_i$ is a dichotomous measure of whether or not the county resettled southeast Asian refugees from 1975 to 1980. $After1980_t$ is a dichotomous measure for whether or not an observation is from before or after 1980. $Treated_i * After1980_t$ is the interaction term that measures the effect of being a treated county after refugee resettlement in 1980. If this interaction term is statistically significant and, for instance, negative, then southeast Asian refugee resettlement reduced crime rates relative to those in untreated counties. $\epsilon_{i,t}$ is the stochastic error term. The model employs cluster-robust standard errors by county to control for heteroskedastic variance across observations. The regression is weighted by county population to control for counties with skewed crime and resettlement rates due to their small size[47].

[47]Weighting by population helps control for structural heterogeneity between counties, but it does reduce some of the treated counties' statistical power because many are smaller in population size. The average population in treated counties was 64,997 people compared to 73,773 in the untreated group.

Results

Figures 8, 9, and 10 show the average murder, robbery, and overall crime rates for treated versus untreated counties from 1970 to 1990. The figures all demonstrate a similar pattern. The baseline rate was lower for murder, robbery, and overall crime in counties that resettled refugees. This is potentially due to the treated counties being smaller and less urban than the untreated sample. Additionally, all three crime rates appear to be increasing or linear over the period of the study regardless of treatment. I will now turn to the difference-in-differences analysis to evaluate this observation empirically.

Figure 8: Murder rates in U.S. counties, 1970 to 1990



Average murder rates per 100,000 in U.S. counties from 1970 to 1990. Data are separated by whether or not a county resettled significant southeast Asian refugees from 1975 to 1980.

The results from my difference-in-differences model do not provide substantial evidence that counties which resettled southeast Asian refugees from 1975 to 1980 had changes in their crime rates which differed from those that did not. Table 2 shows the full regression estimates from fitting the model.

Treated counties had a murder rate that was 20.19% lower on average than in untreated counties prior to 1980. However, this difference was not statistically significant (95% CI = [-0.52, 0.12])

Table 2: Difference in differences in crime rates in U.S. counties by treatment group, 1970 to 1990

	log(Murder Rate)	log(Robbery Rate)	log(Crime Rate)
Treated	-0.20	-1.31**	-0.18
	(0.16)	(0.52)	(0.14)
After 1980	-0.04**	0.15***	0.19***
	(0.02)	(0.04)	(0.02)
Treated X After 1980	0.01	0.08	0.07*
	(0.03)	(0.08)	(0.04)
Constant	1.91***	5.49***	8.26***
	(0.06)	(0.26)	(0.04)
Observations	58,765	58,765	58,765
R-squared	0.00	0.01	0.01

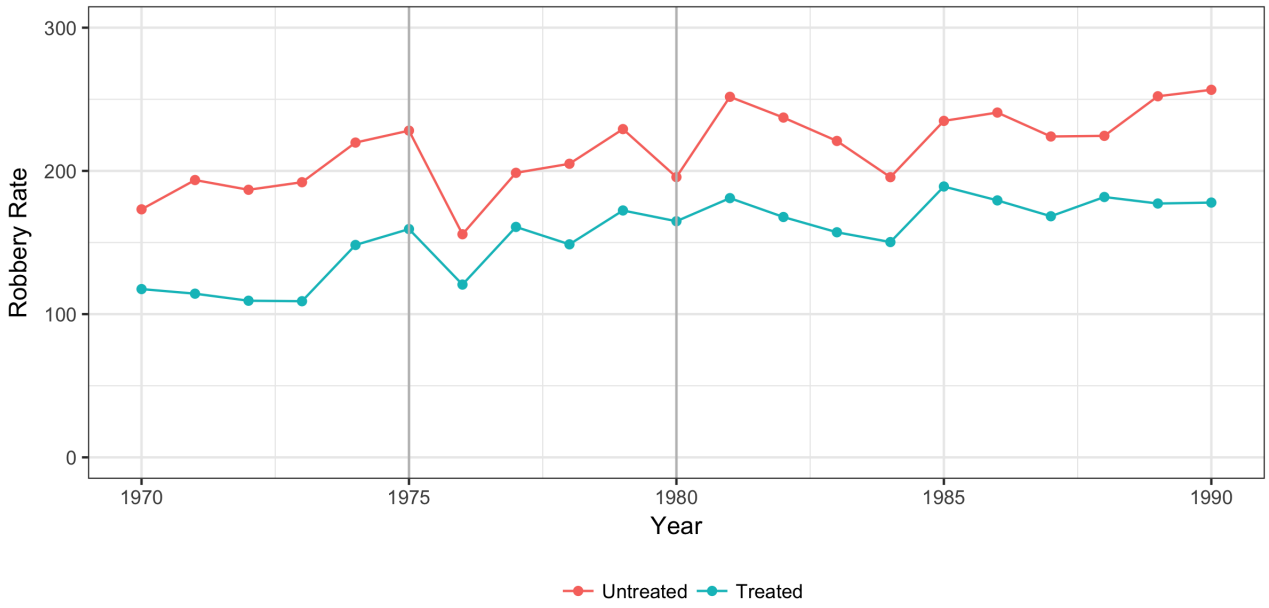
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The untreated county murder rates declined, on average by 4.02% after 1980 and that decline was statistically significant (95% CI = [-0.07, -0.01]). Treated county murder rates declined, on average, 0.01% less than untreated counties after 1980, but this difference was not significant (95% CI = [-0.06, 0.07]). Figure 13 in the appendix shows these results graphically, and demonstrates how substantively insignificant the difference-in-differences in murder rates between treated and untreated groups was after resettling southeast Asian refugees.

I find similar results when testing this model with county robbery rates. Treated county robbery rates were 130.79% lower than untreated counties before 1980 and this difference was statistically significant (95% CI= [-2.32, -0.30]). Untreated county robbery rates increased, on average, by 15.12% after 1980, which was a statistically significant increase (95% CI = [0.08, 0.23]). Treated county robbery rates increased by 7.90% more than untreated counties after 1980, but this difference was not statistically significant (95% CI = [-0.07, 0.23]). I, therefore, find evidence that robbery rates increased after 1980 across all counties, but that the difference-in-differences between refugee resettling counties and all other counties was not significant. Figure 14 in the appendix shows these results graphically.

Finally, fitting the model with overall crime rates yielded similar results. Treated county overall crime rates were 17.56% lower than untreated county overall crime rates prior to 1980, but the difference was insignificant (95% CI = [-0.44, 0.09]). Untreated county crime rates increased by

Figure 9: Robbery rates in U.S. counties, 1970 to 1990



Average robbery rates per 100,000 in U.S. counties from 1970 to 1990. Data are separated by whether or not a county resettled significant southeast Asian refugees from 1975 to 1980.

19.26% after 1980, on average, which was a significant increase (95% CI = [0.15, 0.23]). Treated county overall crime rates increased by 6.90% more than untreated county crime rates, but this increase was not significant (95% CI = [-0.001, 0.14]). Therefore, I do not find sufficient evidence that refugee resettlement affected overall crime rates in U.S. counties after 1980. Figure 15 in the appendix shows these results graphically.

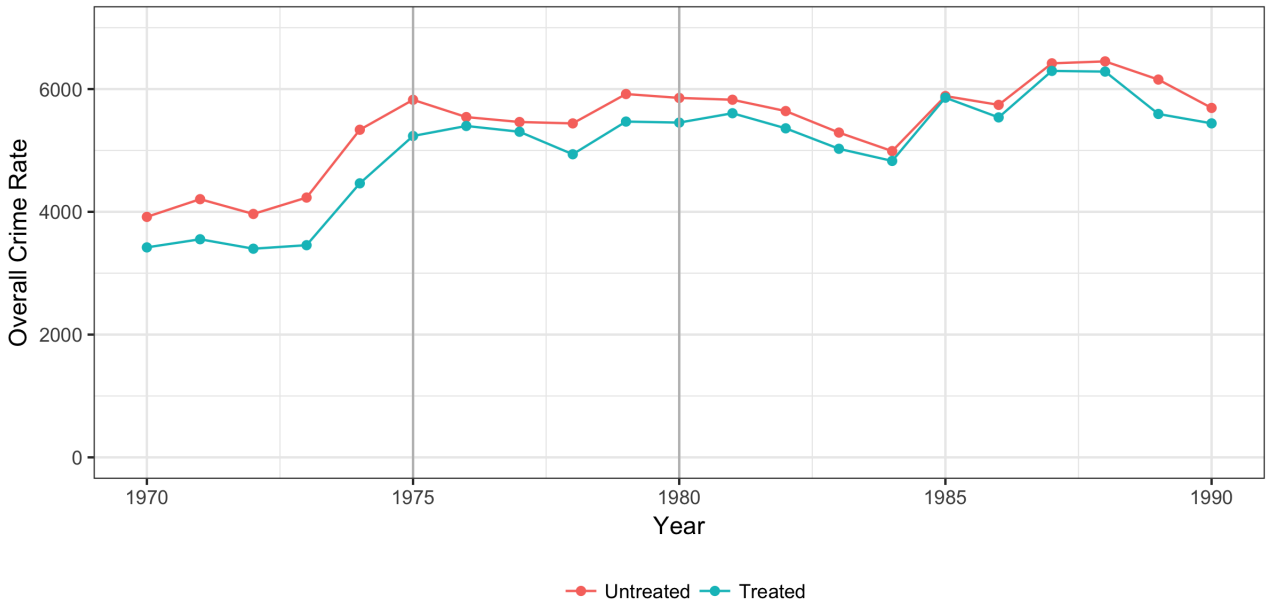
Robustness Checks

As a robustness check[48], I re-estimated the model and counted all counties as treated where Southeast Asian refugees comprised 5% or more of their foreign population[49]. The results were mixed. This cut-off increased the number of treated counties from 136 to 464. Treated county murder rates fell by 2.29% less than the untreated county rates after 1980, but this difference was not statistically significant (95% CI = [-0.04, 0.09]). Overall crime rates increased by 5.70% more in treated counties than untreated counties after 1980, and this increase was also statistically insignificant

[48] Additional robustness checks changing the limit on the foreign born population are available in Table 18 and 19 in the appendix.

[49] Full results from this analysis available in Table 16 in the appendix.

Figure 10: Overall crime rates in U.S. counties, 1970 to 1990



Average overall crime rates per 100,000 in U.S. counties from 1970 to 1990. Data are separated by whether or not a county resettled significant southeast Asian refugees from 1975 to 1980.

(95% CI = [-0.03, 0.15]). However, robbery rates in treated counties increased by 13.66% more than untreated counties after 1980, and this increase was significant (95% CI = [0.01, 0.26]).

To test whether this one significant finding extends to other arbitrary treatment cutoffs, I re-estimated the model and counted all counties as treated where southeast Asian refugees comprised 20% or more of their foreign population[50]. The results are once again mixed. There are only 15 treated counties at this cutoff. I do not find that treated county robbery rates differed significantly from those in untreated counties after 1980 ($\beta = -0.08$, 95% CI = [-0.26, 0.10]). Nor are treated county overall crime rates significantly different from untreated county rates after 1980 ($\beta = 0.10$, 95% CI = [-0.03, 0.23]). However, murder rates in these counties increased by 11.23% after 1980 while the murder rate in untreated counties fell by 4.06% and this difference was statistically significant (95% CI = [0.02, 0.29]). These results suggest that the arbitrary cut-off for treatment in my original analysis affected the model's results. However, both of the above robustness checks require further inquiry to understand their results. The significant increase in murder rates using the 20% threshold may be due to high variance in a small sample size. With the 5% threshold, the

[50]Full results from this analysis available in Table 17 in the appendix.

increase in robbery rates may be due to refugee resettlement[51] or other unobservable characteristics that are outside of this paper's scope.

Discussion

Study 2 tested whether resettling southeast Asian refugees from 1975 to 1980 significantly affected crime rates. The difference-in-differences model did not produce evidence that refugee resettlement had a significant effect on crime rates in U.S. counties from 1970 to 1990. The study found substantively small and statistically insignificant variation between treated and untreated counties in the change in their crime rates after 1980.

However, this analysis suffered from several limitations that should be noted. First, treated counties did not all resettle southeast Asian refugees at once. Treatment occurred in two waves, 1975 and 1980. Census data were not available to distinguish when immigrants moved to the United States within that five-year window. Changes within county structure during the treatment window could have affected my results.

Second, refugees may initially resettle into one community and then move to different areas over time. The twenty year time frame for this analysis leaves ample opportunity for refugees to migrate to other part of the United States. This may attenuate my results as refugees are being counted in communities in which they no longer live. However, my results are robust for studying the effect of *initial* resettlement into a community on crime even if over time the composition of refugees in a county changes.

Third, the accuracy of crime data available from the *FBI Uniform Crime Report* varies with time. My results may be biased by non-random variation in county-crime statistics introduced by systematic under-reporting. However, as argued in Study 1, murder rates are accurately reported by agencies, so fitting the model with murder rates produced robust results.

Conclusion

This paper presents some evidence that free case refugee resettlement has a substantively small but statistically significant negative effect on murder rates in U.S. counties. This negative relationship

[51] As is consistent with Bell, Fasani, and Machin (2013)'s findings.

holds in areas with high drug arrest rates and high economic deprivation. However, these results did not extend to southeast Asian refugee resettlement's effect on murder rates. The inconsistent results may be due to non-random resettlement of free-case refugees. Communities resettling refugees in the present day have voluntary agencies with the resources to do so. Therefore, a community's refugee resettling resources may be correlated with other factors that affect crime rates. Alternatively, the significant results from Study 1 alone suggest that the increase in federal money given to voluntary agencies coupled with refugee resettlement's institutionalization after the Refugee Act of 1980 improved integration outcomes related to crime.

Additional findings do not indicate that the negative relationship between refugees and murder extends to other metrics for crime in U.S. counties. Free case refugee resettlement appeared to have a significant but substantively minor effect on property and violent crime when controlling for only drug arrests and unemployment, but that effect disappeared when controlling for other factors related to crime. In addition, southeast Asian refugee resettlement did not affect robbery rates or overall crime rates. These findings further indicate that there is no relationship between refugee resettlement and crime beyond murder rates. However, these results may be due to the relatively high volume of violent and property crime in the United States compared to the volume of refugee resettlement.

This study provides ample opportunity for future research. Additional research should address non-random resettlement location by studying the effect of counties opening new resettlement offices or receiving federal grant money to resettle refugees. Future research should also study individual refugees over the course of their integration to better understand how economic deprivation affects refugee behavior. Finally, additional inquiry should also explore how native born citizens react to refugee resettlement in their communities.

This study's results are valuable despite the dearth of statistically significant findings. This study is the first comprehensive analysis of refugee resettlement's effect on crime and provides a foundation for more detailed research into this immigrant sub-population. Additionally, these results complicate theories tested in this analysis. I find no evidence to support social disorganization theory, economic opportunity theory, or the immigration revitalization perspective. The results suggest that social disorganization and economic opportunity are dated ways of understanding ethnic heterogeneity's relationship to criminality. Further, this analysis indicates that

the immigrant revitalization perspective relies too heavily on endogeneity between immigrants and their communities to draw robust conclusions about their relationship to crime. Finally, the study demonstrates that those who argue that refugees endanger public safety do so without empirical evidence. Although null results are inconclusive, the consistently insignificant findings provide some evidence that refugees do not affect crime in their local communities. Public officials can focus less on limiting refugee resettlement for safety reasons and instead focus on assisting refugees in integrating and becoming economically self-sufficient.

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Study 1 Appendix

Table 3: Estimated free-case refugees resettled in the U.S., 2003 to 2014

Nation-of-origin	Cause	First Arrival	N
Bhutan	Ethnic conflict	2008	80,074
Burma	Ethnic conflict	2006	136,958
Burundi	Civil war	2007	10,322
Central African Republic	Civil war	2003	1,064
Dem. Rep. Congo	Civil war	2003	18,857
Eritrea	Border war	2003	13,288
Iraq	Civil war	2007	118,439
Laos	Ethnic conflict	2004	15,823
Total			394,825

Table 4: Summary Statistics, 2003 to 2014

Variable	N	Mean	Std. Dev.	Min.	Max.
log(Murder Rate)	24,751	0.91	1.00	0.00	5.51
log(Violent Rate)	24,751	5.18	1.17	0.00	7.94
log(Property Rate)	24,751	7.53	0.88	0.00	9.79
log(Refugees resettled)	22,165	0.31	1.10	0.00	8.35
log(Drug Arrest Rate)	24,751	5.74	1.19	0.00	1.67
Unemployment	24,751	6.68	2.84	1.12	29.01
Refugees resettled	2,575	115.7	267.9	1.00	4,229

Table 5: ACS Summary Statistics, 2003 to 2014

Variable	N	Mean	Std. Dev.	Min.	Max.
log(Murder Rate)	24,578	0.92	1.02	0.00	5.51
log(Violent Rate)	24,578	5.20	1.18	0.00	7.83
log(Property Rate)	24,578	7.540	0.89	0.00	9.61
log(Refugees Resettled)	22,052	0.31	1.09	0.00	8.35
log(% Foreign Born)	24,578	1.63	0.62	0.45	3.90
Unemployment	24,578	6.68	2.84	1.12	29.01
log(Drug Arrest Rate)	24,578	5.76	1.19	0.00	10.66
% under 29	24,578	15.25	2.64	10.06	35.23
Manufacturing	24,578	7.95	3.56	1.23	24.87
Low Skill Sector	24,578	22.69	2.90	14.03	41.81
log(Median Income)	24,578	10.84	0.24	3.54	11.81
log(Economic Deprivation)	24,578	3.71	0.29	2.98	4.82
Refugees resettled	2,573	115.56	267.98	1.00	4,229

Table 6: Refugee resettlement's effect on crime rates in U.S. counties, 2003 to 2014 (Census)

	log(Murder Rate)	log(Violent Rate)	log(Property Rate)
log(Refugees resettled)	-0.02***	-0.01**	-0.01***
	(0.01)	(0.00)	(0.00)
log(Drug Arrest Rate)	0.02	0.06***	0.02**
	(0.02)	(0.02)	(0.01)
Unemployment	-0.02**	-0.01**	-0.01**
	(0.01)	(0.01)	(0.00)
Constant	1.57***	5.67***	7.99***
	(0.12)	(0.11)	(0.07)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	22,165	22,165	22,165
R-squared	0.02	0.10	0.22
Number of counties	2,587	2,587	2,587

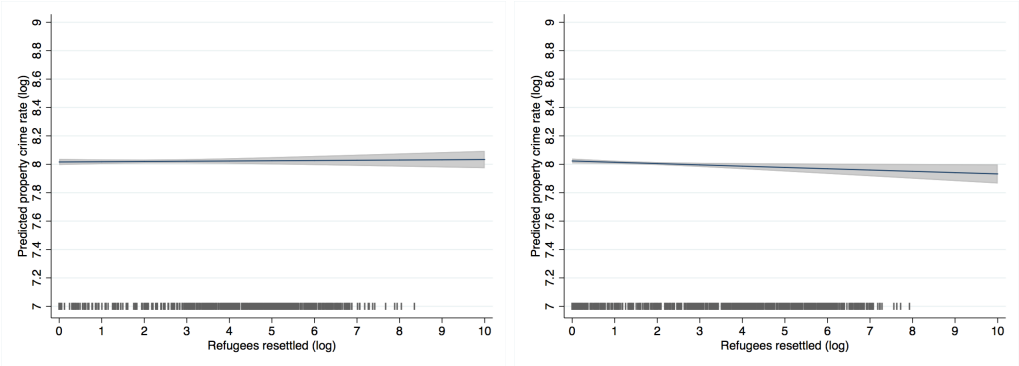
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Refugee resettlement's effect on crime rates in counties with high drug crime (Census)

	log(Murder)	log(Violent)	log(Property)
log(Refugees resettled)	-0.02***	-0.01**	-0.01***
	(0.01)	(0.01)	(0.00)
High Drug Arrests	0.02	0.01	-0.01
	(0.03)	(0.02)	(0.01)
High Drug Arrests X log(Refugees resettled)	0.00	0.01**	0.00*
	(0.01)	(0.00)	(0.00)
log(Drug Arrest Rate)	0.01	0.05**	0.02**
	(0.02)	(0.02)	(0.01)
Unemployment	-0.02**	-0.01**	-0.01**
	(0.01)	(0.01)	(0.00)
Constant	1.62***	5.73***	7.99***
	(0.12)	(0.12)	(0.07)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	22,165	22,165	22,165
R-squared	0.02	0.10	0.22
Number of counties	2,587	2,587	2,587

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 11: Refugee resettlement's predicted effect on property crime rates by drug arrests



(a) *Refugee resettlement in counties with high drug crime*

(b) *Refugee resettlement in counties without high drug crime*

Predicted effect of refugee resettlement on the property crime rate of counties with and without high drug crime with data fitted to model 4. Gray area around the estimated marginal effect represents a 95% confidence interval. Note the axis cutoff. Tick marks underneath are the distribution of counties by drug arrest rate and log of refugee resettlement.

Table 8: Refugee resettlement's effect on crime rates in U.S. counties from 2003 to 2014 (ACS)

	log(Murder Rate)	log(Violent Rate)	log(Property Rate)
log(Refugees resettled)	-0.01***	-0.00	-0.00
	(0.00)	(0.00)	(0.00)
log(% Foreign Born)	-0.25***	-0.41***	-0.45***
	(0.07)	(0.06)	(0.10)
Unemployment	-0.01*	-0.01	-0.00
	(0.01)	(0.00)	(0.00)
log(Drug Arrest Rate)	0.09***	0.16***	0.15***
	(0.02)	(0.02)	(0.02)
% under 29	0.01	0.01	0.03***
	(0.01)	(0.01)	(0.01)
Manufacturing	-0.00	-0.00	-0.01
	(0.01)	(0.01)	(0.01)
Low Skill Sector	0.02*	0.02**	0.03***
	(0.01)	(0.01)	(0.01)
log(Median Income)	-0.63***	-0.42***	-0.37*
	(0.13)	(0.13)	(0.20)
log(Deprivation)	-0.29	-0.19	-0.28*
	(0.19)	(0.16)	(0.15)
Constant	9.17***	10.65***	12.28***
	(1.85)	(1.67)	(2.21)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	22,052	22,052	22,052
R-squared	0.03	0.14	0.22
Number of counties	2,526	2,526	2,526

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Refugee resettlement's effect on crime rates in counties with high drug arrest rates (ACS)

	log(Murder)	log(Property)	log(Violent)
log(Refugees resettled)	-0.02**	-0.01**	-0.01*
	(0.01)	(0.00)	(0.00)
High Drug Arrests	-0.02	-0.01	-0.00
	(0.02)	(0.01)	(0.01)
High Drug Arrests X log(Refugees resettled)	0.00	0.01**	0.01*
	(0.01)	(0.00)	(0.01)
log(% Foreign Born)	-0.25***	-0.44***	-0.41***
	(0.07)	(0.10)	(0.06)
Unemployment	-0.01*	-0.00	-0.01
	(0.01)	(0.00)	(0.00)
log(Drug Arrest Rate)	0.09***	0.14***	0.15***
	(0.02)	(0.02)	(0.02)
% under 29	0.01	0.03***	0.01
	(0.01)	(0.01)	(0.01)
Manufacturing	-0.00	-0.01	-0.00
	(0.01)	(0.01)	(0.01)
Low Skill Sector	0.02*	0.03***	0.02**
	(0.01)	(0.01)	(0.01)
log(Median Income)	-0.65***	-0.38**	-0.42***
	(0.13)	(0.19)	(0.13)
log(Deprivation)	-0.29	-0.27*	-0.18
	(0.19)	(0.14)	(0.16)
Constant	9.24***	12.35***	10.70***
	(1.84)	(2.14)	(1.63)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	22,052	22,052	22,052
R-squared	0.03	0.22	0.15
Number of counties	2,526	2,526	2,526

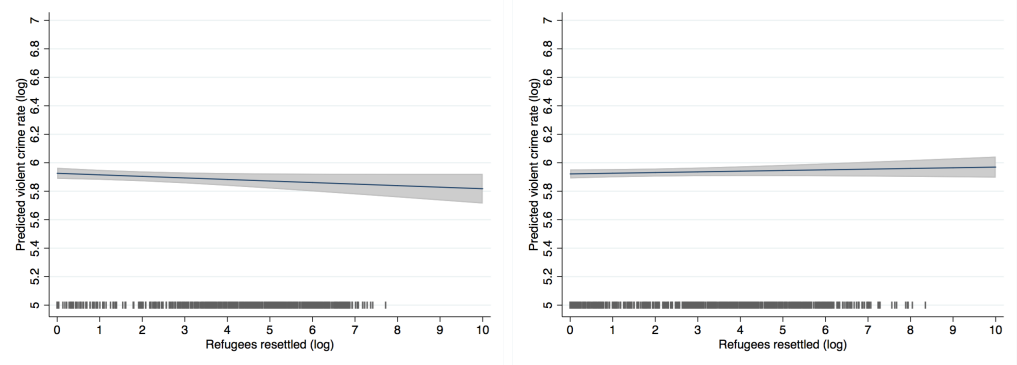
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Refugee resettlement's effect on crime rates in counties with high economic deprivation (ACS)

	log(Murder)	log(Property)	log(Violent)
log(Refugees resettled	-0.01	0.00	0.00
	(0.01)	(0.01)	(0.00)
High Deprivation	0.03	-0.05	0.00
	(0.04)	(0.04)	(0.03)
High Deprivation X log(Refugees resettled)	-0.01	-0.01	-0.02**
	(0.01)	(0.01)	(0.01)
log(% Foreign Born)	-0.24***	-0.42***	-0.39***
	(0.07)	(0.08)	(0.05)
Unemployment	-0.01*	-0.00	-0.01*
	(0.01)	(0.00)	(0.00)
log(Drug Arrest Rate)	0.09***	0.15***	0.16***
	(0.02)	(0.01)	(0.02)
% under 29	0.01	0.03***	0.01
	(0.01)	(0.01)	(0.01)
Manufacturing	-0.00	-0.01	0.00
	(0.01)	(0.01)	(0.01)
Low Skill Sector	0.02*	0.03***	0.02***
	(0.01)	(0.01)	(0.01)
log(Median Income)	-0.65***	-0.41**	-0.47***
	(0.13)	(0.16)	(0.12)
log(Deprivation)	-0.33	-0.22	-0.18
	(0.20)	(0.15)	(0.16)
Constant	9.38***	12.33***	10.99***
	(1.85)	(2.06)	(1.58)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	22,052	22,052	22,052
R-squared	0.03	0.22	0.15
Number of counties	2,526	2,526	2,526

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 12: Predicted effect of refugee resettlement on violent crime rates by economic deprivation



(a) *Refugee resettlement in counties with high economic deprivation*

(b) *Refugee resettlement in counties without high economic deprivation*

Predicted effect of refugee resettlement on the violent crime rate of counties with and without high economic deprivation with data fitted to model 4. Gray area around the estimated marginal effect represents a 95% confidence interval. Note the axis cutoff. Tick marks on the bottom axis represent the distribution of counties by economic deprivation and log of refugees resettled.

Table 11: Refugee resettlement's effect on crime rates without one-year lag (ACS)

	log(Murder)	log(Property)	log(Violent)
log(Refugees resettled)	-0.01**	-0.00	-0.01
	(0.01)	(0.00)	(0.00)
log(% Foreign Born)	-0.23***	-0.40***	-0.36***
	(0.07)	(0.09)	(0.05)
Unemployment	-0.01	0.00	-0.01
	(0.01)	(0.00)	(0.01)
log(Drug Arrest Rate)	0.08***	0.14***	0.14***
	(0.02)	(0.01)	(0.02)
% under 29	0.01	0.03***	0.01
	(0.01)	(0.01)	(0.01)
Manufacturing	-0.00	-0.01	-0.00
	(0.01)	(0.01)	(0.01)
Low Skill Sector	0.02	0.03***	0.02**
	(0.01)	(0.01)	(0.01)
log(Median Income)	-0.62***	-0.40**	-0.51***
	(0.13)	(0.18)	(0.13)
log(Deprivation)	-0.27	-0.29**	-0.20
	(0.19)	(0.15)	(0.16)
Constant	8.93***	12.59***	11.69***
	(1.83)	(2.01)	(1.65)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	24,578	24,578	24,578
R-squared	0.03	0.20	0.12
Number of counties	2,526	2,526	2,526

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 12: Refugee resettlement's effect on crime rates with a three-year lag (ACS)

	log(Murder)	log(Property)	log(Violent)
log(Refugees resettled)	-0.01**	0.00	-0.00
	(0.00)	(0.00)	(0.00)
log(% Foreign Born)	-0.34***	-0.53***	-0.49***
	(0.08)	(0.12)	(0.07)
Unemployment	-0.01**	-0.01	-0.01***
	(0.01)	(0.00)	(0.00)
log(Drug Arrest Rate)	0.09***	0.16***	0.17***
	(0.02)	(0.02)	(0.02)
% under 29	0.01	0.02***	0.01
	(0.01)	(0.01)	(0.01)
Manufacturing	-0.01	-0.00	-0.00
	(0.01)	(0.01)	(0.01)
Low Skill Sector	0.02	0.03***	0.02***
	(0.01)	(0.01)	(0.01)
log(Median Income)	-0.61***	-0.31	-0.31**
	(0.16)	(0.23)	(0.15)
log(Deprivation)	-0.34*	-0.22	-0.14
	(0.20)	(0.14)	(0.16)
Constant	9.49***	11.42***	9.35***
	(2.12)	(2.60)	(1.86)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	17,000	17,000	17,000
R-squared	0.04	0.29	0.19
Number of counties	2,456	2,456	2,456

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 13: Refugee resettlement's effect on crime rates without Iraqi refugees (ACS)

	log(Murder)	log(Property)	log(Violent)
log(Refugees resettled)	-0.01***	-0.01**	-0.01
	(0.00)	(0.00)	(0.00)
log(% Foreign Born)	-0.23***	-0.44***	-0.41***
	(0.07)	(0.10)	(0.05)
Unemployment	-0.01*	-0.00	-0.01*
	(0.01)	(0.00)	(0.01)
log(Drug Arrest Rate)	0.09***	0.15***	0.16***
	(0.02)	(0.02)	(0.02)
% under 29	0.01	0.03***	0.01
	(0.01)	(0.01)	(0.01)
Manufacturing	-0.00	-0.01	-0.00
	(0.01)	(0.01)	(0.01)
Low Skill Sector	0.02	0.03***	0.02**
	(0.01)	(0.01)	(0.01)
log(Median Income)	-0.64***	-0.38*	-0.43***
	(0.13)	(0.19)	(0.13)
log(Deprivation)	-0.30	-0.29**	-0.19
	(0.19)	(0.14)	(0.16)
Constant	9.30***	12.32***	10.70***
	(1.77)	(2.20)	(1.64)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	22,052	22,052	22,052
R-squared	0.03	0.22	0.14
Number of counties	2,526	2,526	2,526

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 14: Refugee resettlement's effect on crime rates within five-years of migration (ACS)

	log(Murder)	log(Property)	log(Violent)
log(Refugees resettled)	-0.02***	-0.02***	-0.01***
	(0.00)	(0.00)	(0.00)
log(% Foreign Born)	-0.22***	-0.43***	-0.40***
	(0.07)	(0.09)	(0.05)
Unemployment	-0.01*	-0.00	-0.01
	(0.01)	(0.00)	(0.00)
log(Drug Arrest Rate)	0.09***	0.15***	0.16***
	(0.02)	(0.01)	(0.02)
% under 29	0.00	0.03***	0.01
	(0.01)	(0.01)	(0.01)
Manufacturing	-0.00	-0.01	-0.00
	(0.01)	(0.01)	(0.01)
Low Skill Sector	0.02	0.03***	0.02**
	(0.01)	(0.01)	(0.01)
log(Median Income)	-0.66***	-0.39**	-0.44***
	(0.13)	(0.18)	(0.12)
log(Deprivation)	-0.28	-0.28*	-0.18
	(0.19)	(0.14)	(0.16)
Constant	9.36***	12.39***	10.75***
	(1.78)	(2.08)	(1.60)
Year FE	Yes	Yes	Yes
County FE	Yes	Yes	Yes
Observations	22,052	22,052	22,052
R-squared	0.03	0.22	0.15
Number of counties	2,526	2,526	2,526

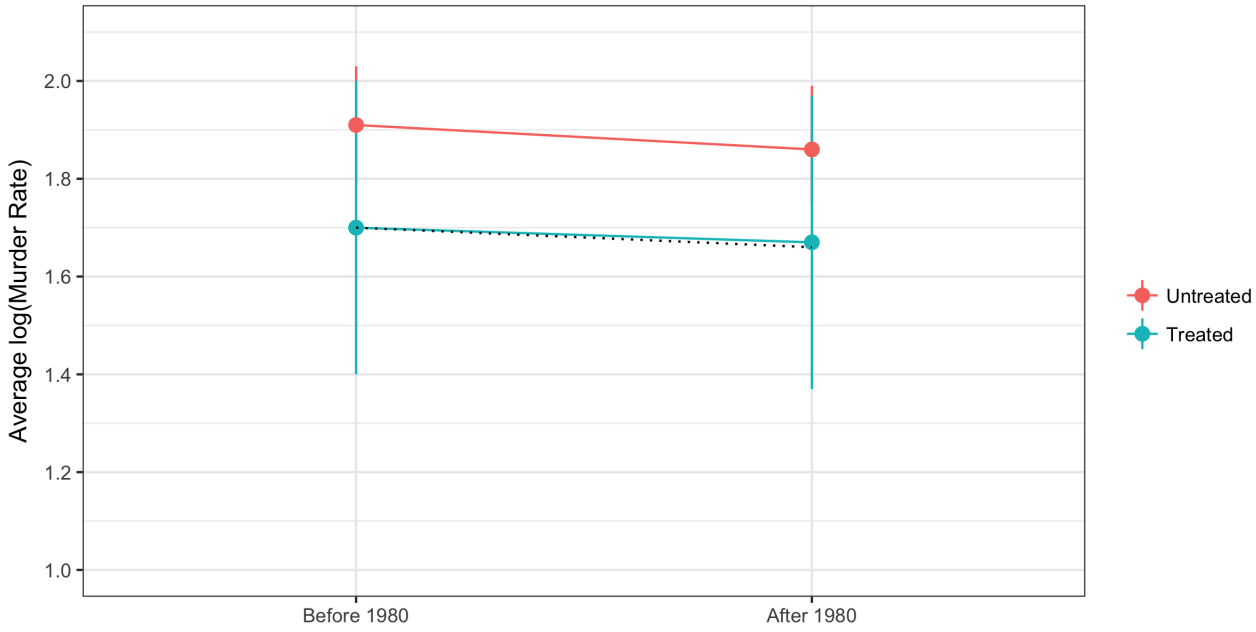
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Study 2 Appendix

Table 15: Summary crime statistics, 1970 to 1990

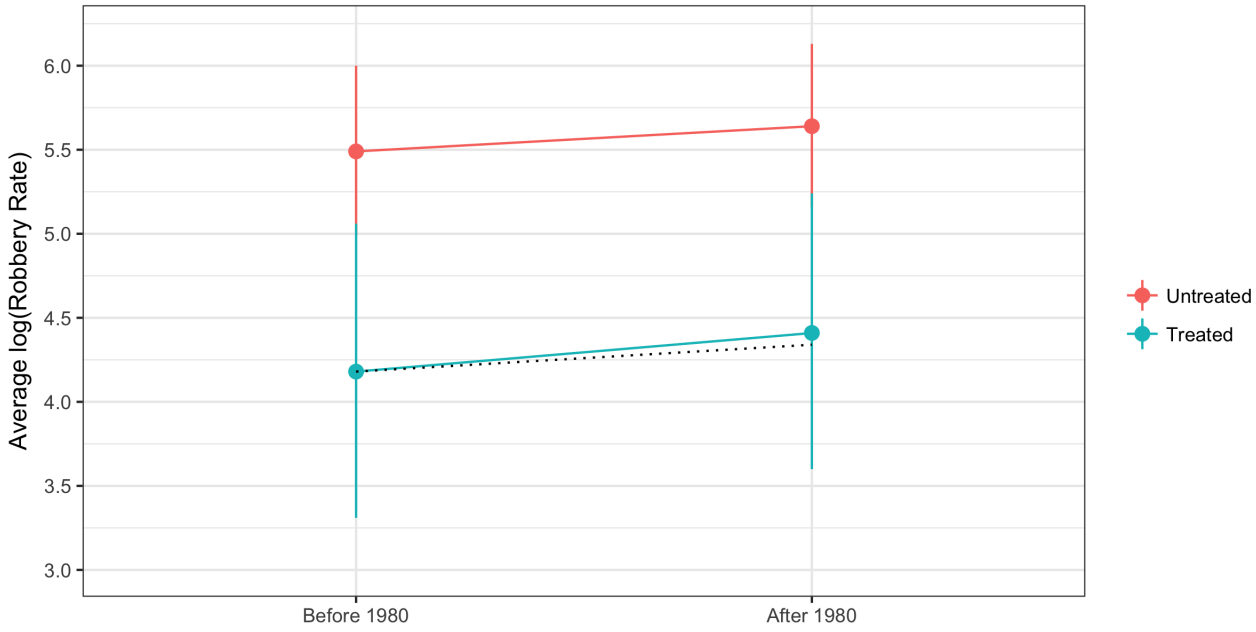
Variable	N	Mean	Std. Dev.	Min.	Max.
Murder	58,765	6.53	42.53	0.00	1,768
Robbery	58,765	157.97	1,464	0.00	63,094
Crime	58,765	3,988	19,147	1.00	661,734
Murder Rate	58,765	5.85	11.79	0.00	990.10
Robbery Rate	58,765	42.32	142.16	0.00	21,996
Crime Rate	58,765	2,900	3,497	1.60	263,543
log(Murder Rate)	58,765	1.19	1.20	0.00	6.90
log(Robbery Rate)	58,765	1.89	1.93	0.00	11.05
log(Crime Rate)	58,765	7.57	1.03	0.96	12.48

Figure 13: Treatment effect on murder rates in U.S. counties, 1970 to 1990



Average logged murder rate by treatment group and period. Dotted line represents the counter-factual murder rate for the treated group assuming a parallel trend. The difference between that dotted line and the point estimate after 1980 is the average treatment effect. Vertical lines represent 95% confidence intervals. Note the axis cutoff.

Figure 14: Treatment effect on robbery rates in U.S. counties, 1970 to 1990



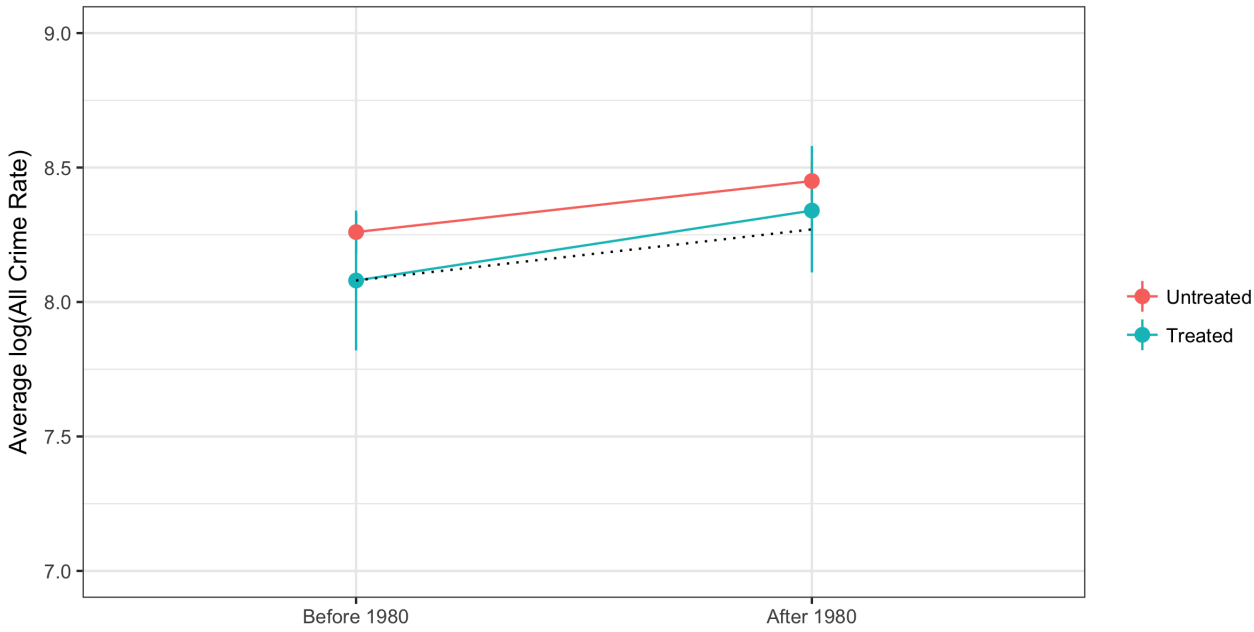
Average logged robbery rate by treatment group and period. Dotted line represents the counter-factual robbery rate for the treated group assuming a parallel trend. The difference between that dotted line and the point estimate after 1980 is the average treatment effect. Vertical lines represent 95% confidence intervals. Note the axis cutoff.

Table 16: Difference-in-differences with 5% of foreign born population treatment threshold

	log(Murder)	log(Robbery)	log(Crime)
Treated (5% Threshold)	-0.19**	-0.87**	0.00
	(0.09)	(0.40)	(0.08)
After 1980	-0.04**	0.14***	0.19***
	(0.02)	(0.04)	(0.02)
Treated (5% Threshold) X After 1980	0.02	0.14**	0.06
	(0.03)	(0.06)	(0.05)
Constant	1.93***	5.57***	8.25***
	(0.07)	(0.29)	(0.04)
Observations	58,765	58,765	58,765
R-squared	0.00	0.01	0.01

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 15: Treatment effect on overall crime rates in U.S. counties, 1970 to 1990



Average logged overall crime rate by treatment group and period. Dotted line represents the counter-factual overall crime rate for the treated group assuming a parallel trend. The difference between that dotted line and the point estimate after 1980 is the average treatment effect. Vertical lines represent 95% confidence intervals. Note the axis cutoff.

Table 17: Difference-in-differences with 20% of foreign born population treatment threshold

	log(Murder)	log(Robbery)	log(Crime)
Treated (20% Threshold)	0.56	0.12	0.16
	(0.46)	(1.24)	(0.25)
After 1980	-0.04**	0.15***	0.19***
	(0.02)	(0.04)	(0.02)
Treated (20% Threshold) X After 1980	0.15**	-0.08	0.10
	(0.07)	(0.09)	(0.07)
Constant	1.89***	5.44***	8.25***
	(0.06)	(0.25)	(0.04)
Observations	58,765	58,765	58,765
R-squared	0.00	0.00	0.01

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 18: Difference-in-differences without a limit on 1980 foreign born population

	log(Murder Rate)	log(Robbery Rate)	log(Crime Rate)
Treated (No Lim.)	-0.21	-1.40***	-0.22
	(0.16)	(0.51)	(0.14)
After 1980	-0.04**	0.15***	0.19***
	(0.02)	(0.04)	(0.02)
Treated (No Lim.) X After 1980	0.00	0.07	0.07**
	(0.03)	(0.08)	(0.04)
Constant	1.91***	5.50***	8.26***
	(0.06)	(0.26)	(0.04)
Observations	58,765	58,765	58,765
R-squared	0.00	0.01	0.01

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 19: Difference-in-differences with a 1,000 person limit on 1980 foreign born population

	log(Murder Rate)	log(Robbery Rate)	log(Crime Rate)
Treated (1,000 Lim.)	-0.07	-0.23	0.18
	(0.21)	(0.54)	(0.14)
After 1980	-0.04**	0.15***	0.19***
	(0.02)	(0.04)	(0.02)
Treated (1,000 Lim.) X After 1980	0.05	0.12*	0.06*
	(0.04)	(0.07)	(0.03)
Constant	1.90***	5.45***	8.25***
	(0.06)	(0.26)	(0.04)
Observations	58,765	58,765	58,765
R-squared	0.00	0.00	0.01

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1