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Refugees in the United States: Are They Worse Off?

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I. Abstract

This paper aims to investigate how refugees perform in the US labor market in relation to economic immigrants and natives. Drawing from conclusions from human capital and discrimination theories, I hypothesize that compared to economic immigrants and natives, refugees are more likely to be disadvantaged in the US upon their arrival. For example, refugees often have less time and fewer resources to acquire desirable US-specific labor skills prior to their entry and may face taste-based and statistical discrimination from employers after they arrive. However, over time assimilation would occur for refugees as they obtain more US-specific human capital, such as English skills and US labor market experience, and discrimination may diminish in the long-run as employers learn more about refugee workers. Using US Census and ACS data from 1980, 1990, and 2000-2015, I conducted descriptive statistics and multiple regression analyses on the labor market outcomes of refugees from eight countries: Vietnam, Cambodia, Afghanistan, Romania, Russia and other USSR nations, Laos, Iraq, and Somalia. My empirical results support my hypothesis. Overall, refugees are initially worse off in the US labor market upon their arrival years than non-refugee immigrants and natives in terms of employment rate, usual hours worked per week, and labor wages, but over time they improve their labor market outcomes and assimilate. However, the discrepancy in the results among the eight refugee groups after controlling for human capital variables also suggests that discrimination might affect the labor market assimilation of some refugee groups, especially refugees from Iraq and Somalia.

II. Introduction

Since the founding of the country, the United States has long been a popular destination of immigration. According to American Community Survey (ACS) data, in 2015, the immigration population in the US was more than 43.3 million, which constituted 13.5% of the total population in the country (Zong & Batalova, 2017). Individuals immigrate to the US for a variety of reasons, such as better employment, family, and education. Of these different immigrant groups, one group, in particular, has received increasing attention from labor economists: refugees. Unlike economic immigrants whose primary goal is to search for better economic opportunities, refugees flee to the US in order to escape persecution and war in their home country. In other words, economic immigrants choose to come to the US under their free will, whereas refugees do not have much liberty to choose when and where they would be resettled for humanitarian purposes. Hence refugees, in general, may have less time and fewer resources in their home country to prepare themselves for settlement in the United States, namely acquiring English skills to increase the likelihood of employment, than economic immigrants do. Since refugees are less likely to attain such US-specific labor skills prior to immigration, they are more likely to be disadvantaged in the US labor market when compared to non-refugee immigrants and natives.

Discussions on the humanitarian resettlement of foreigners in the US have reached a new high following the recent Executive Order 13769 issued by President Trump to suspend the US Refugee Admissions Program for 120 days. Amidst waves of supporting the admissions of refugees from the general public in response to the President's policy, providing stable jobs for refugees became one of the key aspects of helping resettle them. Immigration policy changes and the general sentiment towards refugees are closely related to the labor market performance of refugees in the US. A more hostile environment for refugees often results in increased discrimination against them in the labor market, which would further jeopardize the refugees' assimilation process in the US. It is hence important for

policymakers to understand how the refugees fare in the US labor market in order to formulate better humanitarian resettlement programs.

This paper aims to investigate how refugees perform in the US labor market in relation to economic immigrants and natives, and hence evaluate the effectiveness of the US humanitarian resettlement program. It is organized in the following order: literature review, theoretical model, data and methodology, descriptive statistics analysis, regression model and results, and conclusion. I will refer to both refugees and asylees in the US when I use the term "refugees" in this paper. This is because although both groups seek humanitarian aid, they are given different definitions in the US. Refugee status is granted to someone who is outside of the US when applying for humanitarian protection, whereas asylum is granted, either affirmatively or defensively, to someone who is already present in the US or at a US port of entry (Department of Homeland Security, 2015). Despite the minor differences in the definition of these two groups, it is assumed that they are fundamentally the same when it comes to the level of US-specific human capital upon arrival in the US.

Refugees from the following eight countries are selected for my assimilation analysis: Vietnam, Cambodia, Afghanistan, Romania, Russia and other USSR nations, Laos, Iraq, and Somalia. The labor market outcomes, such as the employment rate, usual hours worked per week, and real wages, of these refugees are compared to those of all non-refugee immigrants and all natives respectively. Both descriptive statistics and multiple regression analyses are conducted to estimate the effects of refugee status on an individual's labor market performance. Human capital and demographic variables are taken into account as well. Data across six time periods, 1980, 1990, 2000, 2001-2005, 2006-2010, 2011-2015, are analyzed to determine if assimilation occurs for these refugees in the US labor market.

III. Literature Review

Previous research done on the labor market integration of refugees in a wide range of host countries have suggested that there exists a gap between the labor market outcomes of refugees and those of economic immigrants and natives. As Aiyar et al. (2016) point out in their study on the recent waves of refugees in the European Union, existing literature on immigration seldom distinguishes between economic immigrants and refugees when analyzing the assimilation process of immigrants. The researchers find that when compared to natives, immigrants, in general, have lower labor market participation rates, employment rates, and wages. The good news is that the gap in earnings and employment rate between immigrants and natives gradually diminishes as length of stay of the immigrants in the host country increases. However, refugees are more disadvantaged upon entry in the host country labor market and have a slower integration process than economic immigrants. Aiyar et al. reason that this is because economic immigrants could choose their destination country to maximize future employment outcomes, whereas refugees focus on seeking asylum to maximize personal safety. The researchers attribute the refugees' slow integration process to the lack of language skills and transferable job qualifications, as well as barriers to job search such as legal constraints on asylum applications.

Bevelander (2016) arrives at similar conclusions as Aiyar et al. (2016) did when he conducted a more detailed comparison on the employment levels and earnings of refugees to those of family reunion migrants and labor migrants in Sweden, Canada, the US, and the Netherlands. He finds that refugees start at a lower employment level upon arrival at host countries, but eventually they catch up economically with family reunion migrants. However, refugees integrate more slowly into host countries' labor market than labor migrants do. This is because a number of host countries hold screening processes to ensure smoother labor market integration for economic immigrants, and other

countries have policies that admit economic immigrants to match the demand for certain jobs in the host country. Refugees and family reunion immigrants did not enter the country to seek employment primarily, so information on the host country's labor market situation is of less importance for their migration destination.

Moreover, Bevelander finds that labor market integration is mostly dependent on individual human capital, such as the investment in schooling and education both in the source and the host country, and labor experience in the host country. Hence loss and depreciation of human capital and credentials during the asylum procedure negatively affect refugees' labor market integration. Factors such as age, marital status, gender, and country of origin also play a role in determining the economic integration of various immigrant categories. Bevelander asserts that intake policies in host countries don't provide adequate assistance to refugees attempting to integrate into the local labor market, which contributes to the poorer economic performance when compared to economic and family reunion migrants and is especially significant during the first few years after arrival.

In her research, Godøy (2017) examines how conditions in the local labor markets at the time of immigration influence later employment outcomes for refugees in Norway. She finds that in 2012, the employment rate of refugees in Norway was 50.1%, in contrast to the 68.7% of the entire population and the 62.8% among all immigrants. She then confirms the link between human capital and labor market performance by asserting that refugees face higher barriers to entry in the labor market due to limited language skills and lower educational attainment, and hence as a group, they have lower earnings and employment rates. On the other hand, it is shown that being placed in a labor market where other non-OECD immigrants do well would increase refugee labor earnings up to 6 years after immigration.

Similar to other researchers' findings, Ott (2013) concludes in her literature review that refugees are worse off than other immigrant groups in the labor markets in Australia, Canada, Norway, and

Sweden, especially in the short-term. Refugees are shown to be worse off in labor markets when compared to other immigrants and natives in the short term, even when controlling for differences in demographics and human catpial such as age, education level, and level of host country language acquisition. However, in the longer term, refugee gap diminishes as earnings of refugees and other categories converge. Employment rates and occupational status of refugees also improve over time.

Likewise, Hugo (2013, 2011) points out that in Australia, after determinants for disadvantage are controlled for, refugees have lower labor market participation rates than other migrant and non-migrant groups in the early years of resettlement. Aalandslid (2008) shows that refugees in Norway have lower employment rates than other immigrants and natives. Using the Longitudinal Survey of Immigrants to Canada, Yu, Ouellet, and Warmington (2007) find that refugees in Canada have lower employment rates compared to family class or skilled worker entry categories at 6 months and 2 years after arrival. However, Hiebert (2002, 2009) asserts that refugees across Canada show stronger than expected earnings considering education and English language levels, although the earnings are still much lower than the Canadian average, and they have the lowest self-employment rates of any immigrant category.

In contrast, refugees in the US are shown to have the same likelihood of employment as other immigrants but have significantly lower occupational status and earnings (Connor, 2010; Cortes, 2004). Again, human capital comes into play. Much of the refugee gap in the US can be explained by differences in education, language, and neighborhood of residence, but still, a gap remains when controlling for these factors. Furthermore, total education years and training in the US play a larger role in regression estimates for skilled occupations. Refugees may be marginalized because they tend to not have the country-specific experiences and skills that would better suit them for labor markets in developed countries which rely increasingly on customer-service and technical skills.

Poutvaara and Wech (2016) compared the labor market integration of refugees in Germany,

Sweden, Denmark, the UK, and the US, and investigated the factors that may contribute to the different labor outcomes of refugees between the European countries and the US. They find that in Germany and Sweden, assimilation of refugees in the labor market is evident as the employment rate of refugees increased by over 40% over 10 years after they settled in the countries. However, it is still below that of native workers (75% versus79%). In Denmark, refugees reach the same level of employment rate as natives (75%) 10 years after recognition. For the employment rate of refugees in the US, the researchers took data from a 2014 Office of Refugee Resettlement survey. They discovered that within 3 years after their arrival in the US, the employment rate for all refugees increased from less than 40% to over 50%, although still under the 60% employment rate of the total US population. The researchers explained the lower employment rate among refugees by stating that psychological traumas due to war from their home countries discourage both genders to participate in the labor force.

Moreover, female refugees are significantly less likely to be employed than male refugees. The employment rate of male refugees rose to the same level to that of native males within two years after arrival, and it became even higher than that of native US males three years after arrival. On the other hand, the employment rate of female refugees still remains considerably lower than that of native females in all of the years considered by the researchers. The researchers attribute the female's worse outcomes to both because of the higher number of children and cultural barriers that discourage females from participating in the labor market. The researchers also find that there are discrepancies in the employment rate of different refugee groups in the US. Refugees of both genders from Latin America have the highest employment rate, and those from the Middle East have the lowest rates. The researchers assert that the difference in the employment rates between these two groups cannot be explained by varying human capital since both groups have similar educational attainment levels.

IV. Theoretical Model

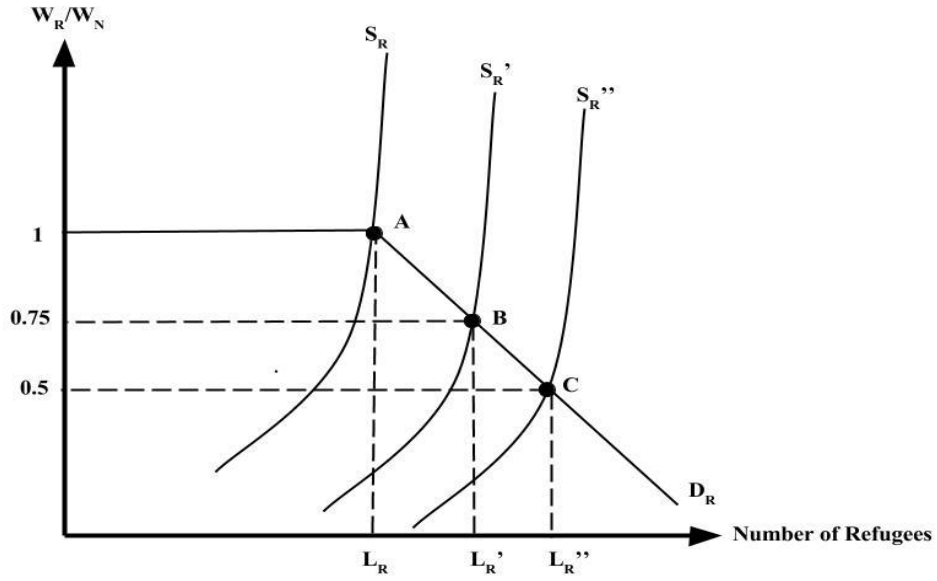
This section presents the theoretical component of this paper, which consists of human capital theory and discrimination theory. The human capital theory states that human capital is the income-generating worth of an individual, and it is a function of his or her productive skills and knowledge (Rosen, 2008). Traditionally, human capital is measured by an individual's educational attainment; the higher the educational attainment level, the greater the individual's human capital. Higher human capital thus leads to higher labor productivity, and labor earnings may increase. Age is also an estimate of human capital, as it is assumed that labor market experience, a key component of human capital, increases as an individual ages. However, it is important to note that the initial human capital levels of refugees, which is approximated by their educational attainment and age, are only partially transferable upon arrival in their host country (Cortes, 2004). Hence it is crucial for these refugees to obtain country-specific human capital to be able to compete in the host country labor markets. Therefore, in this paper, in addition to the educational attainment level and age of refugees, I also analyze how English proficiency, which is a US-specific human capital, impacts the wages of the different refugee groups. Since refugees are less likely to have country-specific human capital before seeking resettlement in the host country, and country-specific human capital takes time to gain, I hypothesize that refugees would perform worse than economic immigrants and natives when they first arrive in the host country, but eventually catch up as assimilation occurs over time.

Moreover, discrimination from employers might play a part in determining the refugees' labor earnings in the US. I will approach the discrimination theory from two perspectives: taste-based discrimination and statistical discrimination. Statistical discrimination addresses the inequality between demographic groups caused by non-prejudiced stereotypes that are unrelated to racial and gender biases (Moro, 2009). As current literature suggests, refugees have limited country-specific human capital, such

as English skills, upon arrival in the host country, and therefore they might be subjected to statistical discrimination due to their perceived lower human capital as a group. Employers may be less inclined to hire refugees as they believe that refugees, in general, have lower productivity because of the previous labor market performance of refugees. Moreover, because these discriminating employers make their hiring decisions of individual refugee candidates based on perceived performance of all refugees, by avoiding to hire refugees as a group they aim to increase the productivity and hence competitiveness of their firms. Due to their competitive edge, these employers are highly likely to persevere or even grow in the long-run, and therefore hiring decisions in the labor market based on statistical discrimination against refugees are unlikely to disappear and might even worsen.

On the other hand, taste-based discrimination refers to how unjustified prejudicial feelings of individual members of a majority group could lead to negative employment outcomes for members of a discriminated-against group (Charles & Guryan, 2009). Taste-based discrimination can be attributed to common discriminatory factors in the labor market such as national origin, race, gender, and religion. Current literature also points out that discrimination exists even within the refugee population; refugees of certain national origin may experience greater degrees of discrimination from employers than other refugees, causing them to perform more poorly in the labor market. For example, Capps et al. (2015) find that although Vietnamese and Cuban refugees had similar English proficiency and educational attainment levels upon their arrival in the US, these two groups had significantly different economic outcomes in FY2009-11. Up to 56% of Cuban refugees received household income below twice the poverty line, whereas only 35% of the Vietnamese refugees did. This suggests that human capital is unlikely to be the only contributing factor in determining labor wages. Fortunately, it is likely that such kind of taste-based discrimination against refugees would eventually disappear in the labor market as explained by the Becker model below (Borjas, 2016).

Figure 1: Taste-Based Discrimination against Refugees Explained by the Becker Model



In Figure 1, I have simplified the labor market to consist of only refugees and native workers. Employers who have no preference of native workers over refugees would be willing to pay an equal amount of wages for both groups ($W_R/W_N = 1$) as shown by the horizontal portion of the demand curve for refugee workers. This would continue until there are no more non-discriminating employers left in the labor market (Point A) who are willing to pay refugees at a wage ratio of 1, and we enter the downward-sloping portion of the demand curve. Here we start with employers with a lesser extent of taste-based discrimination against refugees then gradually move on to those with more distaste against refugees. This indicates that after L_R number of refugees are hired in the labor market, the remaining prejudiced employers would only hire refugees if the wage ratio is lower than 1. The lower wage is to compensate the prejudiced employers for employing the less preferred refugees, and the more discriminating an employer is against refugees, the lower the wage ratio has to be for the employer to hire refugee workers.

The labor wages of refugees are also determined by the supply of refugee workers in the labor market. The greater the supply of refugee workers, the more likely that the labor market equilibrium would fall at the downward-sloping portion of the demand curve where employers have a greater preference for native workers over refugees as shown by the position of the three supply curves in Figure 1. As the supply of refugee workers increases in the labor market, for example, a shift from S_R to S_R', the equilibrium wages for these workers decrease due to the presence of discriminatory employers. However, eventually, this phenomenon would disappear as discriminatory employers face a higher labor cost when choosing to hire native workers over refugee workers. For instance, at Point B discriminatory employers would have to pay 33% more for native workers than non-discriminatory employers. The labor costs for discriminatory employers increase along the demand curve; at Point C, they would need to pay 50% more for native workers. Since higher labor costs decrease the competitiveness of firms, in the long-run these discriminatory employers would either have to terminate their discriminatory behaviors or face potential exit from the market.

Drawing from conclusions based on existing literature and economic theories, I hypothesize that compared to economic immigrants and natives, refugees would perform worse in the labor market upon arrival in the US. This is because they have less time and fewer resources to acquire desirable US-specific labor skills prior to their entry into the country as well as taste-based and statistical discrimination from employers. However, over time assimilation would occur for refugees as they can obtain more US-specific human capital, such as English skills and US labor market experience, and discrimination may diminish in the long-run as employers learn more about refugee workers. Moreover, due to the diverse background of the refugee groups, some might experience faster assimilation than others due to demographic and human capital factors.

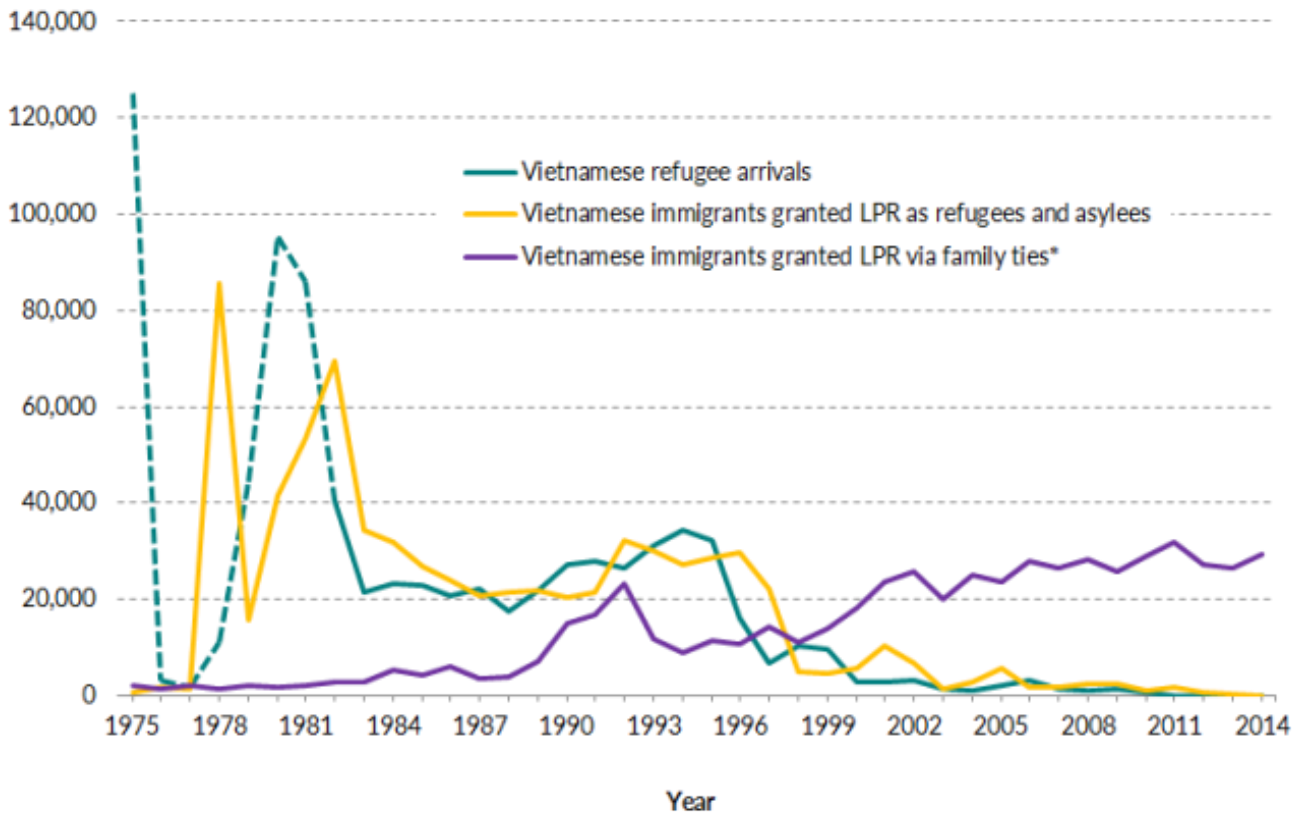
V. Data & Methodology

The data used in this research are obtained from the 1980, 1990, 2000 5% US Census surveys and the 2001-2015 1% American Community Survey (ACS) conducted by the U.S. Census Bureau. I extracted data across these years to better capture the assimilation process of refugees and economic immigrants. I pooled data from 2001-2005, 2006-2010, and 2011-2015 respectively to create three distinct periods that generate snapshots of the refugee assimilation process. When extracting my data, I limited my data selection to working-age individuals by identifying those are between age 18 and 65 when the surveys were conducted. Various sources are used to determine the various refugee flows to the US. Since the US Census and ACS data do not specify the immigration type of the respondents, I have to turn to alternative methods of defining what constitutes a refugee flow to the US. After careful consideration, I decided that if the sum of refugees and asylees from a country makes up at least 70% of the total immigration flow to the US in a given year, then that country's immigrants during that year are included in my definition of major refugee groups in the US.

The primary source of refugee, asylee, and immigrant data is the Statistical yearbook of the Immigration and Naturalization Services, which in 2002 is renamed the Yearbook of Immigration Statistics under the Department of Homeland Security (DHS). However, the statistical yearbooks do not contain refugee or asylee data before 1982, and therefore the earliest refugee waves from Vietnam and Cambodia prior to 1982 are identified using data from the Migration Policy Institute (MPI) instead of the 70% rule. It can be seen in Figure 2 that the arrival of Vietnamese refugees in the US peaked in 1975, and then between 1978 and 1983. Combining the MPI data with the statistical yearbooks data, I defined the Vietnamese immigrants in the ACS data who immigrated to the United States in 1975, or between 1978 and 1988, as refugees. Similarly, Cambodian immigrants in the ACS data who immigrated to the US between 1978 and 1985 are defined as refugees. It is important to note that due to

the limitations of using the refugee as at least 70% of the total immigrant population method to identify refugee flows to the United States, some immigrants who are defined as refugees might have been economic or family-based immigrants, and hence the results might be biased. However, based on information I have learned from non-ACS sources such as the DHS and MPI, I am confident that most respondents in my refugee waves are in fact refugees or asylees.

Figure 2: Vietnamese Refugee Arrivals and Vietnamese Immigrants Granted Lawful Permanent Residence (LPR) as Refugees and Asylees or through Family Ties, 1975-2014 (Zong & Batalova, 2016)



Using the DHS and MPI data and the 70% rule, I identified eight major refugee groups that have arrived in the US between 1975 and 2015:

- Vietnamese refugee wave: Year of immigration is 1975 or 1978 through 1988
- Cambodian refugee wave: Year of immigration is 1978 through 1985

- Afghan refugee wave: Year of immigration is 1982 through 1988
- Romanian refugee wave: Year of immigration is 1982 through 1990
- Russian and other USSR nations refugee wave: Year of immigration is 1987 through 1995
- Laotian refugee wave: Year of immigration is 1986 through 1996
- Iraqi refugee wave: Year of immigration is 1992 through 2000 or 2008 through 2015
- Somali refugee wave: Year of immigration is 1989 through 2007 or 2010 through 2015

Due to the coding of the ACS data, the Russian refugee group contains individuals born in Russia and other former Soviet Republics excluding the European states. The same cohorts of refugees are followed over time to trace their labor market assimilation process. Due to this research design, the age of the refugees would increase with the census year. Table 1 below lays out the different refugee groups present in the US in each time period, as indicated by the X's. For example, Vietnamese and Cambodian refugees are the earliest arrivals and hence are included in my refugee sample for all six time periods, whereas Iraqi and Somali refugees are the most recent arrivals and are only included after 2000. The ACS data are then analyzed using descriptive statistics and multiple regression to determine whether refugees perform more poorly in the US labor market than economic immigrants and natives do. Detailed explanation of the regression model design will be discussed in the next section.

Table 1: Refugee Groups and Years Present in the US

	1980	1990	2000	2001-2005	2006-2010	2011-2015
Vietnamese Refugee	X	X	X	X	X	X
Cambodian Refugee	X	X	X	X	X	X
Afghan Refugee	N/A	X	X	X	X	X
Romanian Refugee	N/A	X	X	X	X	X
Russian Refugee	N/A	X	X	X	X	X

Laotian Refugee	N/A	X	X	X	X	X
Iraqi Refugee	N/A	N/A	X	X	X	X
Somali Refugee	N/A	N/A	X	X	X	X

VI. Descriptive Statistics Analysis

Descriptive statistics are used to compare the labor market outcomes and human capital of refugees, other immigrants, and natives. This includes the employment rate, usual hours worked per week, as well as the educational attainment level and English proficiency. All descriptive variables are taken as the mean of each nativity group.

Tables 2 to 4 present the descriptive statistics summary for years 1980, 2000, and 2011-2015 to demonstrate the labor market assimilation process for the various refugee groups. Descriptive statistics tables for the remaining time periods are included in the appendix. We can see that in 1980, Vietnamese and Cambodian refugees had significantly lower employment rates, were more likely to be unemployed or out of the labor force, and worked much fewer hours per week on average than natives and other immigrants. This poorer labor market outcome might be attributed to the lower human capital possessed by the refugee groups; they spoke less English, were much less likely to attend high school and college, and were younger compared to the natives and non-refugee immigrants. Since age can be a proxy for labor market experience, it is assumed that younger individuals would have had less experience and hence worse labor market outcomes.

Table 2: 1980 Descriptive Statistics

	Natives	Other immigrants	Vietnamese refugees	Cambodian refugees
Sample Size	150615	438706	6292	522
Employed	68.0%	66.1%	55.7%	42.1%
Unemployed	4.4%	4.5%	5.1%	6.5%
NILF	27.6%	29.4%	39.1%	51.3%
Average usual hours worked per week	30.3	28.4	23.1	17.1
No English	0.2%	7.7%	10.0%	15.5%
Some/ well English	2.2%	37.4%	72.8%	75.5%
Excellent/ only English	97.7%	54.8%	17.2%	9.0%
Less than High School	24.3%	38.5%	37.9%	60.1%
High School	34.1%	24.3%	21.0%	12.6%
College1-3	25%	19.8%	32.9%	21.3%
College4	9.3%	7.8%	4.1%	2.9%
College_Plus	7.3%	9.6%	4.1%	3.1%
Average Age	36.8	38.7	31.9	31.0
Female	50.9%	52.7%	46.4%	46.2%
Married	61.7%	70.3%	55.8%	63.0%
Average NChild	0.92	1.21	1.51	1.50

When we compare Tables 2 and 3, it can be seen that the labor market outcomes for Vietnamese and Cambodian refugees improved in 2000, which would be 12 to 25 years since their arrival in the US. In Table 3, their employment rate increased significantly (up 13.6% for Vietnamese and 15.7% for Cambodians), and the unemployment rate of both groups are in fact lower than that of natives and other immigrants. The usual hours worked per week also increased for both groups; in 2000 Vietnamese even worked more hours per week than natives and other immigrants did. The human capital of both Vietnamese and Cambodian refugees improved along with their labor market performance. A higher percentage of them spoke more English and obtained a high school diploma, bachelor's degree or higher. The average age of these two refugee groups is also similar to that of natives and other immigrants, and therefore this possibly indicates more labor market experience for the refugees. The

comparison of the descriptive statistics for Vietnamese and Cambodian refugees in 1980 and 2000 suggest that these refugees are assimilating to natives and non-refugee immigrants in the US labor market. Moreover, it supports the human capital theory that human capital is positively correlated with labor market performance.

As the newest arrival groups in 2000, the labor market outlook was not as positive for the Iraqi and Somali refugees. These two groups had the highest unemployment rate, as well as the lowest usual hours worked per week, across all nativity groups. It is important to note that although Iraqi and Somali refugees were on average younger than other groups in 2000, their educational attainment and English proficiency level are not significantly lower when compared to other nativity groups. This perhaps suggests that labor market outcomes do depend to some extent on the length of stay in the US.

Table 3: 2000 Descriptive Statistics

	Natives	Other immigrants	Vietnamese refugees	Cambodian refugees	Afghan refugees	Romanian refugees	Russian refugees	Laotian refugees	Iraqi refugees	Somali refugees
Sample Size	148475	1157842	20351	3911	696	1436	13308	2715	1286	801
Employed	71.7%	63.5%	69.3%	57.8%	61.8%	69.6%	65.5%	52.0%	52.2%	52.3%
Unemployed	3.9%	4.5%	3.5%	4.2%	3.6%	3.4%	4.0%	4.3%	5.4%	9.6%
NILF	24.4%	32.0%	27.2%	38.0%	34.6%	27.0%	30.5%	43.7%	42.5%	38.1%
Average Usual hours worked per week	32.7	30.6	33.0	28.0	27.8	33.1	29.5	25.0	24.2	22.7
No English	0.0%	10.2%	2.3%	6.0%	1.9%	0.8%	2.7%	12.9%	8.7%	6.4%
Some/ well English	1.4%	39.6%	58.1%	61.0%	38.5%	39.3%	57.5%	64%	62.3%	60%
Excellent/ only English	98.5%	50.2%	39.6%	33.0%	59.6%	59.9%	39.8%	23.3%	29%	33.5%
Less than High School	18.6%	37.2%	34.7%	55.4%	27.2%	25.8%	22.9%	67.9%	43.8%	44.9%
High School	30.6%	19.8%	16.4%	20.4%	19.8%	22.2%	17.9%	22.6%	21.0%	27.1%
SomeCollege	32.3%	20.4%	30.2%	22.8%	33.9%	26.9%	24.4%	14.3%	18.7%	18.6%
Bachelors	15.0%	13.3%	19.5%	6.8%	17.0%	15.7%	25.0%	3.0%	12.5%	7.1%
Masters	5.3%	5.4%	3.2%	1.6%	3.9%	10.8%	14.7%	0.4%	1.9%	1.4%
Professional	1.6%	2.3%	2.0%	0.3%	2.3%	5.2%	3.8%	0.3%	1.7%	0.5%
Doctorate	0.7%	1.5%	0.6%	0.3%	1.1%	1.7%	3.8%	0.0%	0.4%	0.4%
Average Age	40.2	38.4	39.0	38.9	36.6	40.2	39.7	35.9	35.4	32.0
Female	50.9%	49.3%	46.4%	53.1%	46.8%	49.3%	53.0%	50.0%	44.1%	50.3%
Married	58.4%	63.6%	63.2%	62.6%	62.5%	66.7%	67.8%	67.2%	60.3%	47.9%
Average NChild	0.82	1.14	1.23	1.81	1.39	1.07	0.99	2.55	1.36	1.30

Other groups such as Cambodians, Afghan, and Laotian refugees showed some degree of assimilation but were not as successful as their Vietnamese, Romanian, and Russian peers. Comparing their labor market outcomes in 2000 and in 2011-2015, their employment rate and usual hours worked per week had increased, but still had not exceeded the levels of natives and other immigrants. Generally speaking, more of the individuals in these refugee groups spoke better English and received a bachelor's degree or higher, but again, the increased levels are still not comparable with the levels of English skills or educational attainment of natives and non-refugee immigrants. Given that Vietnamese and Cambodian refugees arrived in the US during similar years, as did the Afghan with the Romanian refugees, and the Russian with the Laotian refugees, this raises the question of what causes the differences in these refugee groups' assimilation experience.

However, not all refugees seemed to have assimilated to the US labor market after decades in the country. The labor market outcomes of Iraqi and Somali refugees are still considerably below those of native workers and other immigrants in 2011-2015. The unemployment rate of these two groups are the highest among all nativity groups, and the usual hours worked per week for Iraqi refugees dropped from 24 hours a week to 20 hours. What I find inconsistent with the human capital theory is that although the labor market outcomes were worse for these two refugee groups, their human capital actually was higher than previous years. The percentage of Iraqi and Somali refugees who spoke excellent to only English increased (by 10.5% for Iraqis, and by 11.5% for Somalis), and a greater percentage of these refugees obtained a bachelor's degree or higher (16.5% to 30.2% for Iraqis and 9.4% to 10.2% for Somalis). Nonetheless, it is important to note that since there were still new Iraqi and Somali arrivals in the US during 2011-2015 as given in their definition, these newly arrived refugees were not given sufficient time to assimilate and hence the descriptive statistics results might be biased by including these refugees in the analysis.

Table 4: 2011-2015 Descriptive Statistics

	Natives	Other immigrants	Vietnamese refugees	Cambodian refugees	Afghan refugees	Romanian refugees	Russian refugees	Laotian refugees	Iraqi refugees	Somali refugees
Sample Size	820693	1455111	19231	3177	527	1330	12384	2073	3557	1819
Employed	67.5%	69.0%	75.1%	67.2%	65.1%	73.1%	76.7%	63.5%	49.3%	57.1%
Unemployed	5.6%	5.5%	4.5%	4.6%	8.5%	6.2%	4.8%	5.3%	10.4%	11.6%
NILF	26.9%	25.6%	20.4%	28.2%	26.4%	20.7%	18.5%	31.2%	40.2%	31.3%
Average Usual hours worked per week	29.2	29.2	31.7	28.7	29.2	32.1	32.1	26.5	20.3	24.1
No English	0.0%	7.5%	2.1%	3.4%	0.9%	0.6%	0.8%	8.5%	6.2%	7.4%
Some/ well English	1.0%	38.6%	55.1%	59.1%	40.6%	28.4%	38.2%	60.5%	54.3%	47.7%
Excellent/ only English	99.0%	53.9%	42.8%	37.5%	58.4%	71.0%	61.0%	31.0%	39.5%	45.0%
Less than High School	9.02%	25.7%	23.3%	37.8%	16.7%	8.95%	3.96%	43.2%	23.9%	37.8%
High School	28.0%	21.5%	15.5%	20.6%	21.6%	25.8%	14.5%	27.2%	25.0%	23.9%
SomeCollege	34.7%	22.5%	27.4%	24.9%	26.6%	28.1%	24.9%	19.4%	21.0%	28.2%
Bachelors	18.3%	17.5%	23.7%	12.4%	26.0%	20.2%	29.9%	8.6%	22.7%	8.3%
Masters	7.3%	8.5%	5.6%	3.4%	6.5%	10.7%	17.8%	1.0%	4.4%	1.5%
Professional	1.8%	2.1%	3.1%	0.5%	1.7%	3.8%	4.7%	0.3%	2.3%	0.2%
Doctorate	0.9%	2.1%	1.4%	0.3%	0.9%	2.4%	4.2%	0.3%	0.8%	0.2%
Average Age	42.4	42.2	49.3	48.7	46.3	48.0	43.8	43.7	38.4	35.8
Female	50.6%	51.4%	45.7%	52.0%	50.3%	51.5%	52.9%	48.4%	47.6%	51.9%
Married	51.5%	62.9%	72.7%	66.2%	78.9%	69.3%	65.2%	64.4%	63.1%	51.6%
Average NChild	0.69	1.09	1.17	1.37	1.72	0.86	0.85	2.11	1.41	1.96

VII. Regression Model and Results

In addition to descriptive statistics, multiple regression analyses are used to better examine the labor market integration of refugees. In general, the purpose of the regression models is to determine the effect of refugee status on labor earnings in the US relative to two comparison groups: non-refugee immigrants and natives. This means that every regression model is run twice; first with a sample of the refugee groups and non-refugee immigrants, and second with a sample of the refugee groups and natives. This approach allows me to estimate the effect of being in the refugee groups compared to non-refugee immigrants as well as the effect of being in the refugee groups compared to natives. The regression models are as follows:

Regression Model 1: Natural Log of Real Wages = $\beta_0 + \beta_1$Refugee

Regression Model 2: Natural Log of Real Wages = $\beta_0 + \beta_1$Refugee + β_2Female + β_3Age + β_4AgeSQ + β_5Married + β_6NChild + β_7English + B_8HighSchool + β_9SomeCollege + β_{10}Bachelors + β_{11}Masters + β_{12}Professional + β_{13}Doctorate

Regression Model 1 is designed to determine the gross effects of being in a particular refugee group on real wages in the absence of any control variables relative to the two comparison groups: one being all non-refugee immigrants, and the other being all natives. Hence two regressions are run for each time period: first, all refugees versus all other immigrants, and second, all refugees versus all natives. Table 1 in the data/ methodology section lists the various refugee groups that are regressed against the comparison groups in each time period.

Using a similar design, Regression Model 2 adds demographic and human capital factors into the equation. Demographic factors such as gender and age are largely associated with workplace discrimination, and I would like to investigate whether these demographic factors would decrease the magnitude of the refugee status effect. Race is not taken into consideration in my research since it is

assumed that the racial composition of the refugee groups is homogenous within each group. Human capital variables are also controlled for in Regression Model 2 since it is known that a positive relationship exists between investing in human capital (higher education attainment and English skills) and wages. In other words, a refugee with higher educational attainment and more fluent English should earn more. If the coefficient of being a refugee in the United States, β_1, is lower in Regression 2 than in Regression 1, then we can confirm that the demographic and human capital variables may account for some of the effects of refugee status on income. The 1980 US Census measures educational attainment slightly differently than the rest of the surveys do; instead of measuring educational attainment as the degrees earned like the succeeding years do, it uses the highest grade attended by the respondents, and hence there is a different set of educational attainment variables for 1980 as listed in Table 5.

Table 5 below presents the variables taken into account in both descriptive and regression analyses. A brief description of each independent variable is included, along with an expected sign of the relationship between it and the dependent variable.

Table 5: Variables and Descriptions

Variable Name	Description	Expected Sign
Dependent		
Natural log of Real Wages	Natural log of annual wages that are adjusted for inflation, using 2015 as the reference year (2015 CPI = 100) (used in Regression Models 1 and 2)	
Independent		
Primary		
Vietnamese Refugee	1 = born in Vietnam and year of immigration is 1975 or between 1978 and 1988, 0 = not born in Vietnam and/or year of immigration not 1975 or between 1978 and 1988	Negative
Cambodian Refugee	1 = born in Cambodia and year of immigration is between 1978 and 1985, 0 = not born in Cambodia and/or year of immigration not between 1978 and 1985	Negative
Afghan Refugee	1 = born in Afghanistan and year of immigration is between 1982 and 1988, 0 = not born in Afghanistan and/or year of immigration not between 1982 and 1988	Negative

Romanian Refugee	1 = born in Romania and year of immigration is between 1982 and 1990, 0 = not born in Romania and/or year of immigration not between 1982 and 1990	Negative
Soviet Russian Refugee	1 = born in Soviet Union/ Russia and year of immigration is between 1987 and 1995, 0 = not born in Soviet Union/ Russia and/or year of immigration not between 1987 and 1995	Negative
Laotian Refugee	1 = born in Laos and year of immigrant is between 1986 and 1996, 0 = not born in Laos and/or year of immigrant not between 1986 and 1996	Negative
Iraqi Refugee	1 = born in Iraq and year of immigration is either between 1992 and 2000 or 2008 and 2015 , 0 = not born in Iraq and/or year of immigration is neither between 1992 and 2000 or 2008 and 2015	Negative
Somali Refugee	1 = born in Somalia and year of immigration is either between 1989 and 2007 or 2010 and 2015 , 0 = not born in Iraq and/or year of immigration is neither between 1989 and 2007 or 2010 and 2015	Negative
Demographics		
Female	0 = male, 1 = female	Negative
Age	Age of respondent	Positive
Age Squared	(Age * Age) of respondent	Negative
NChild	Number of own children in the household	Negative
Married	1 = married, 0 = not married	Positive
Human Capital		
English	1 =speaks some, well, very well, or only English, 0 = doesn't speak English at all	Positive
High School1980	1 = graduated from high school in 1980; 0 = didn't graduate from high school in 1980	Positive
College1_3	1 = attended some college for 1 to 3 years in 1980; 0 = didn't attend college at all in 1980	Positive
College4	1 = attended college for 4 years in 1980; 0 = didn't attend college for 4 years in 1980	Positive
College_Plus	1 = attended 5+ years of college in 1980; 0 = didn't attend college for more than 4 years in 1980	Positive
High School	1 = graduated from high school; 0 = didn't graduate from high school	Positive
Some College	1 = attended some college but didn't receive a degree; 0 = didn't attend college at all	Positive
Bachelor's Degree	1 = received a Bachelor's degree; 0 = didn't receive a Bachelor's degree	Positive
Master's Degree	1 = received a Master's degree; 0 = didn't receive a Master's degree	Positive
Professional Degree	1 = received a professional degree; 0 = didn't receive a professional degree	Positive
Doctorate Degree	1 = received a Doctorate degree; 0 = didn't receive a Doctorate degree	Positive

When running the regressions, I selected only individuals who were employed full-time year-round, which means that they would have worked at least 30 hours per week for at least 48 weeks, in the past year. Since my dataset contains data across 35 years, it is important that I take inflation into account when looking at labor wages as the dependent variable. Therefore the annual labor wages are adjusted to real wages using the CPI data from the Bureau of Labor Statistics, with 2015 being the base year. Thus, real wages are expressed in terms of 2015 prices. The real wages are then converted to their natural logs to better estimate the wage differentials between refugees, other immigrants, and natives.

Tables 6 and 7 present the wage differentials of the eight refugee groups when regressed against other immigrants and natives respectively for the six time periods. Table 6 focuses on Regression Model 1, which only takes into account the effects of being a refugee from the eight countries I selected, while Table 7 addresses Regression Model 2, which looks into the effects of the controlled variables in addition to the refugee status. The wage differentials which are expressed in percentage terms are obtained by converting the regression coefficients corresponding to the refugee status (β_1) using the formula: percentage change $=100\ \% \times (e^{\ln(\beta_1)} - 1)$. The significance levels are indicated by the number of asterisks placed next to the wage differentials.

By looking at the wage differentials, we can see that over time refugees show signs of improvement in their labor market outcomes, similar to the conclusions we arrived at the descriptive statistics section. In Table 6, the Vietnamese, Romanian, and Russian refugees seemed to also be performing the best out of all the refugee groups in terms of wage differentials versus all other immigrants and native workers. It is shown that when regressed against other immigrants, these refugees improved their earnings significantly after spending a decade or two in the US. Without controlling for any demographic or human capital variables, these three refugee groups started out earning less than other immigrants did upon their arrival in the US, but starting in 2000 they made significantly higher

wages, in both statistical and numerical sense, than other immigrants did. Furthermore, the magnitude of these positive wage differentials increased over the years, with Russian refugees having the highest wage differential versus other immigrants (making 43% more) in 2011-2015.

This observation also holds true when we compare Vietnamese, Romanian, and Russian refugees with native workers. We can see the initial wage gap between these refugees and natives upon their arrival years were larger than the gap between them and other immigrants. However, starting in 2000 again, these three refugees began to earn more than native workers did. By 2011-2015, Vietnamese, Romanian, and Russian refugees were making significantly higher wages than natives. This indicates that these refugees had not only assimilated in the US labor market, but even enjoyed an earning advantage over other immigrant groups and natives.

Cambodian, Afghan, and Laotian refugees showed some degree of assimilation towards other immigrants and natives too in terms of labor wages. Upon their arrival in the US, they earned significantly less than other immigrants and natives did as seen in Table 6. However, over the years, the wage gap between these refugees and the comparison groups diminished in both size and/or statistical significance. In the case of Afghan refugees, after a decade in the US, their wages converged with those of other immigrants, and after 16-20 years, with those of native workers. The wage differentials become negligible since they are statistically insignificant. Laotian refugees appear to earn the least out of these three groups after 20-25 years in the country (20.5% less than other immigrants and 28.5% less than natives in 2011-2015), but even so they had improved their earnings by considerable amounts when compared to their initial earnings upon arrival.

The assimilation experience for Iraqi and Somali refugees was not as smooth as the other refugee groups. Iraqi refugees initially showed some signs of assimilation when their wage differentials versus the comparison groups started to decrease in size between 2000 and 2010, but in 2011-2015 the wage

gap actually increased, returning the initial gap size in 2000. This suggests that instead of assimilating, the performance of Iraqi refugees actually deteriorated. Somali refugees are even worse off in comparison; the wage gap between them and the comparison groups in 2011-2015 actually exceeded the size of that in 2000. The wage differentials show that as we saw in the descriptive statistics, the Iraqis and Somalis are the least assimilated refugee groups. Again, we need to take into consideration the fact that there were still Iraqi and Somali refugees arriving in the US after 2000, and that these new arrivals might not have had enough time to assimilate to the local labor market. Nonetheless, the obvious differences in these eight refugee groups' success in assimilating to the US labor market intrigue me to explore more of the factors that might contribute to this phenomenon, such as potentially a higher extent of discrimination towards the Iraqi and Somali refugees.

Table 6: Wage Differentials of Refugees versus Other Immigrants and Natives Expressed in Percentage Terms (Based on Regression 1)

Versus Other Immigrants						
	1980	1990	2000	2001-2005	2006-2010	2011-2015
Vietnamese Refugee	-15.2%***	-2.08%**	14.7%***	19.4%***	27.1%***	30.2%***
Cambodian Refugee	-29.9%***	-20.9%***	-11.8%***	-10.1%***	-6.72%***	-0.100%
Afghan Refugee	N/A	-11.1%*	-0.399%	0.200%	21.4%***	9.97%*
Romanian Refugee	N/A	-2.86%	25.2%***	21.7%***	27.9%***	40.4%***
Russian Refugee	N/A	-4.02%	16.8%***	26.4%***	34.8%***	43.2%***
Laotian Refugee	N/A	-33.8%***	-26.7%***	-25.9%***	-22.1%***	-20.5%***
Iraqi Refugee	N/A	N/A	-23.0%***	-19.9%***	-15.8%***	-23.4%***
Somali Refugee	N/A	N/A	-30.3%***	-33.2%***	-34.2%***	-33.4%***
Versus Natives						
	1980	1990	2000	2001-2005	2006-2010	2011-2015
Vietnamese Refugee	-19.3%***	-8.97%***	1.82%**	6.50%***	11.4%***	17.1%***
Cambodian Refugee	-33.3%***	-26.5%***	-21.7%***	-19.9%***	-18.3%***	-10.1%***

Afghan Refugee	N/A	-17.4%***	-11.6%***	-10.6%*	6.29%	-1.09%
Romanian Refugee	N/A	-9.70%***	11.2%***	8.55%**	12.1 %***	26.2%***
Russian Refugee	N/A	-10.7%**	3.67%***	12.6%***	18.1%***	28.8%***
Laotian Refugee	N/A	-38.4%***	-35.0%***	-33.9%***	-31.8%***	-28.5%***
Iraqi Refugee	N/A	N/A	-31.6%***	-28.5%***	-26.2%***	-31.1%***
Somali Refugee	N/A	N/A	-38.1%***	-40.4%***	-42.4%***	-40.2%***

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level

When we compare Table 6 and 7, we can see that when demographic and human capital variables are controlled for, the wage differentials of refugees versus the comparison groups decrease in size. This suggests that these controlled variables account for some, if not most, of the wage gap between the refugees and the comparison groups. For example, in Table 6, Vietnamese refugees are shown to earn 17% more than native workers in 2011-2015. However, when the controlled variables are added into the equation in Table 7, instead of generating a large positive wage differential as it did previously, the effect of being a Vietnamese refugee merely makes the wage gap versus native workers become statistically insignificant and hence negligible. This reduction in the positive wage differentials can be observed for the Romanian and Russian refugees as well. Hence this suggests that the earning advantage displayed by the top three most assimilated refugee groups might be largely due to the higher human capital endowment in these groups. Evidence from the descriptive statistics supports this; these three refugee groups have the highest rate of obtaining a bachelor's degree or higher across all nativity groups in 2000 and 2011-2015.

On the other hand, when we control for demographic and human capital variables, the earning outcomes for Cambodian, Laotian, and Somali refugees turn out to have improved significantly. For instance, in 2011-2015, instead of receiving 24.5% less than other immigrants as shown in Table 6,

Laotian refugees now have a statistically insignificant and hence negligible gap with other immigrants in Table 7. The wage gap between them and native workers also shrinks from earning 28.5% less to 15.5% less. Somali refugees seem to have benefited the most from taking into account the demographic and human capital variables. When compared to other immigrants in 2011-2015, the wage gap is reduced from -33% to -16%. The gap between the earnings of the Somali refugees and native workers also narrows from -40% to -25%. The news is not as great for Iraqi refugees; when we control for human capital and demographics, the size of their wage gap with both comparison groups in 2011-2015 exceeds the gap in 2000. This suggests that other factors, such as discrimination, might have affected the labor market outcomes for these refugees.

Table 7: Wage Differentials of Refugees versus Other Immigrants and Natives Expressed in Percentage Terms (Based on Regression 2)

Versus Other Immigrants						
	1980	1990	2000	2001-2005	2006-2010	2011-2015
Vietnamese Refugee	-11.3%***	0.10%	7.25%***	11.2%***	12.4%***	13.4%***
Cambodian Refugee	-25.2%***	-7.50%***	0.702%	1.72%	2.28%	5.44%***
Afghan Refugee	N/A	-11.7%**	-8.88%**	-7.23%	4.80%	-1.39%
Romanian Refugee	N/A	-14.6%***	5.65%**	5.23%*	9.28%***	23.1%***
Russian Refugee	N/A	-22.9%***	-11.8%***	-3.44%***	0.903%	7.14%***
Laotian Refugee	N/A	-16.1%***	-4.69%**	-4.31%*	-2.16%	-2.47%
Iraqi Refugee	N/A	N/A	-17.9%***	-18.6%***	-15.1%***	-23.6%***
Somali Refugee	N/A	N/A	-16.0%***	-20.5%***	-19.6%***	-16.0%***
Versus Natives						
	1980	1990	2000	2001-2005	2006-2010	2011-2015
Vietnamese Refugee	-16.4%***	-4.59%***	-.0399%	1.41%*	0.300%	0.904%
Cambodian Refugee	-29.4%***	-12.2%***	-7.23%***	-8.42%***	-9.61%***	-7.41%***
Afghan Refugee	N/A	-15.2%***	-15.0%***	-14.9%***	-6.20%*	-12.2%***

Romanian Refugee	N/A	-18.0%***	-0.0200%	-1.78%	0.501%	12.2%***
Russian Refugee	N/A	-25.9%***	-21.9%***	-8.42%***	-6.01%***	1.21%
Laotian Refugee	N/A	-21.1%***	-12.6%***	-15.5%***	-13.5%***	-15.5%***
Iraqi Refugee	N/A	N/A	-24.5%***	-25.9%***	-23.7%***	-30.5%***
Somali Refugee	N/A	N/A	-21.9%***	-27.0%***	-26.2%***	-25.1%***

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level

The complete regression results for Models 1 and 2 are presented in the appendix. The t-statistics values are written in bracket under the coefficients. The signs of the controlled variables are as expected as in Table 5. Human capital variables have significantly positive effects on labor wages for all nativity groups. With each additional year of age, which serves as a proxy for labor market experience, real wages increase by roughly 6% for all refugees and other immigrants, and by 7% for all refugees and natives. Those who speak English are seen to receive higher wages than those who do not. Educational attainment has an even greater effect on wages, with professional degrees, such as one in medicine or law, being the most beneficial regardless of the nativity group. It can be seen individuals who had a professional degree enjoyed more than 100% higher income than those who did not. Similar to our findings in the descriptive statistics, these regression results support the human capital theory that the greater an individual's human capital is, the better his or her labor market performance. Moreover, belonging to certain demographic groups is more favorable in terms of income. We can see that being married has a significantly positive effect on wages, whereas females earn significantly lower wages than males do. The number of an individual's own children in the household has a negative effect on income for all refugees and other immigrants, but a mostly positive effect for all refugees and natives.

VIII. Conclusion

As one of the world's top destinations for immigration and humanitarian resettlement, the United States continues to welcome immigrants from a great variety of background. With the growing size of the refugee population in the country, it is important to measure the success of integrating refugees in the US labor market in comparison to economic immigrants and natives and hence evaluate the effectiveness of the US resettlement program for refugees. In this paper, I chose to focus on refugees from eight countries: Vietnam, Cambodia, Afghanistan, Romania, Russia and other USSR states, Laos, Iraq, and Somalia. These eight refugee groups arrived in the US at different years, so I used data over six time periods: 1980, 1990, 2000, 2001-2005, 2006-2010, and 2011-2015 to create snapshots of each refugee group's assimilation experience.

By analyzing US Census and ACS data with descriptive statistics and multiple regression models, it is shown that upon arrival in the US, refugees had lower employment rates, worked fewer hours per week, and earned lower wages compared to non-refugee immigrants and natives. This phenomenon can be largely attributed to the lower levels of human capital, especially US-specific human capital, possessed by these refugees, as indicated by their limited English skills and lower educational attainment levels. This finding is in accordance with the human capital theory, which states that higher levels of human capital would lead to better outcomes in the labor market. Since refugees initially had lower US-specific human capital and their human capital from their home country is only partially transferable in the US labor market, they performed more poorly in comparison to other immigrant groups and natives when they first arrived. Discrimination from employers against refugees might also have impacted the labor market performance of refugees in the short-run.

However, over time, most refugee groups exhibit signs of assimilation to the labor market. They became more likely to be employed, worked for longer hours per week, and received higher earnings

than they previously did. Furthermore, even within the refugee groups, there are varying degrees of success in labor market assimilation. Vietnamese, Romanian, and Russian refugees are found to do exceptionally well, with their labor market performance, as well as educational attainment, eventually exceeding that of other immigrants and native workers. After controlling for demographic and human capital variables, these three refugee groups still make higher wages than non-refugee immigrants and natives do. Other groups such as the Cambodian, Afghan, and Laotian refugees, also improved their labor market outcomes and closed the gap between them and the two comparison groups. Their success in assimilation can be seen to stem from improvements in human capital, especially US-specific ones, which require time to acquire. They became more likely to obtain higher educational attainment levels and spoke better English. Discrimination against these refugees might have diminished in the long run as employers learned more about them. Hence the empirical results support my hypothesis that in the short-run, refugees perform worse than economic immigrants and natives do in the US labor market, but they do assimilate in the long-run.

On the other hand, Iraqi and Somali refugees did not experience as smooth an assimilation experience as the other refugee groups did. Despite an improvement in educational attainment and English proficiency, these refugees did not see a significant increase in their employment rate, usual hours worked per week, and wages. In the case of Iraqi refugees, we even see a deterioration in their labor market performance. In 2011-2015, they experienced higher unemployment rates, worked fewer hours, and earned lower wages than they did in 2000 despite better English and higher educational attainment among the Iraqi refugees. This suggests that human capital theory cannot solely explain the assimilation processes of refugees in the US. Given the increased anti-Islam sentiment in the US in recent years, perhaps discrimination affects how certain ethnicities of refugees fare in the labor market more than other groups.

It is, however, important to note that between 2000 and 2015, Iraqi and Somali refugees were still arriving in the US. Since these new arrivals were not given sufficient time to acquire US-specific human capital, it is likely that their poorer labor market performance biased my results. This leads me to suggest that for future research, the refugees' years of residence in the US be controlled for when analyzing the assimilation process of refugees in order to avoid potentially biased results. Another suggestion for future research is to create interaction terms between the refugee status and human capital variable. In my current research, educational attainment is a controlled variable that has the same effect across all nativity groups. Creating interaction terms for educational attainment would help us determine whether obtaining a bachelors, masters, professional, or doctorate degree would lead to the same returns on earnings for refugees, other immigrants, and natives, and hence provide a better insight for how human capital contributes to the labor market assimilation for refugees. Closer examination on the situations in different refugee source countries might also help us understand the discrepancies in the assimilation process of the different refugee groups.

Overall, my research finds that refugees are initially worse off in the US labor market upon their arrival years than non-refugee immigrants and natives in terms of employment rate, usual hours worked per week, and labor wages, but over time they improve their labor market outcomes and assimilate. This is largely due to their gain in US-specific human capital skills, which increases with their years of US residence. However, the discrepancy in the results among the eight refugee groups after controlling for human capital variables also suggests that discrimination might affect the labor market assimilation of refugees, especially more so for Iraqi and Somali refugees. Hence when designing the humanitarian resettlement programs in the US, policymakers should focus more on job training resources to improve the refugees' human capital, such as language classes to improve English proficiency and easier access to higher education institutions, in order to better integrate refugees in the labor market. Another

important aspect of humanitarian resettlement would be to create a refugee-friendly environment and thus hopefully minimizing the effects of discrimination. In conclusion, this paper supports the assertions of existing literature on the labor market performance of refugees versus economic immigrants and natives while shedding light on relevant issues that should be further investigated to help better estimate the relationship between refugee status and employment.

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X. Appendix

Appendix Table 1: 1990 Descriptive Statistics

	Natives	Other immigrants	Vietnamese refugees	Cambodian refugees	Afghan refugees	Romanian refugees	Russian refugees	Laotian refugees
Sample Size	138844	696608	16316	3117	338	1083	2411	1346
Employed	72.3%	69.3%	66.9%	52.9%	59.5%	70.3%	34.3%	30.8%
Unemployed	4.4%	5.4%	5.2%	5.0%	4.1%	6.2%	18.0%	4.9%
NILF	23.3%	25.2%	27.9%	42.1%	36.4%	23.5%	47.7%	64.3%
Usual hours worked per week	32.3	30.6	28.6	22.3	24.0	30.8	15.3	13.2
No English	0.0%	8.1%	4.0%	9.4%	6.5%	4.9%	15.2%	23.5%
Some/ well English	1.4%	37%	64%	66.6%	49.5%	59.6%	70.9%	63.5%
Excellent/ only English	98.5%	55%	32%	24%	44.1%	35.5%	14%	13%
Less than High School	18.6%	37.2%	34.7%	55.4%	27.2%	25.8%	22.9%	67.9%
High School	33.0%	20.4%	18.8%	17.5%	25.7%	25.3%	22.7%	13.4%
SomeCollege	29.2%	21.8%	31.7%	22.3%	26.9%	21.0%	20.7%	14.1%
Bachelors	12.9%	12.2%	11.8%	3.8%	15.1%	9.4%	17.0%	3.3%
Masters	4.3%	4.9%	1.7%	0.5%	3.0%	12.7%	10.7%	0.9%
Professional	1.5%	2.1%	1.0%	0.3%	1.5%	4.2%	3.4%	0.3%
Doctorate	0.5%	1.4%	0.3%	0.2%	0.6%	1.6%	2.6%	0.1%
Average Age	38.7	37.9	34.1	34.6	34.2	37.9	37.7	33.4
Female	51.1%	50.6%	45.5%	54.0%	49.7%	48.3%	51.4%	50.8%
Married	61.4%	64.6%	55.3%	58.1%	56.2%	70.9%	75.4%	70.2%
Average NChild	0.90	1.14	1.30	1.79	1.37	1.02	1.24	2.43

Appendix Table 2: 2001-2005 Descriptive Statistics

	Natives	Other immigrants	Vietnamese refugees	Cambodian refugees	Afghan refugees	Romanian refugees	Russian refugees	Laotian refugees	Iraqi refugees	Somali refugees
Sample Size	2815125	2680345	48752	8509	1211	2978	19604	4681	1935	1221
Employed	70.0%	66.2%	67.1%	55.8%	61.5%	70.6%	63.3%	47.7%	51.3%	53.2%
Unemployed	5.1%	4.9%	4.4%	4.6%	4.2%	4.8%	6.0%	4.5%	6.9%	10.8%
NILF	24.9%	28.9%	28.5%	39.6%	34.3%	24.6%	30.7%	47.8%	41.8%	36.0%
Usual hours worked per week	31.1	30.2	30.2	25.4	26.9	32.3	28.2	22.2	23.1	23.3
No English	0.0%	8.9%	3.9%	7.7%	3.1%	2.3%	3.9%	15.4%	7.8%	6.8%
Some/ well English	1.1%	38.4%	61.6%	63.8%	41.2%	45.4%	56.5%	63.8%	59.6%	55.5%
Excellent/ only English	98.8%	52.7%	34.4%	28.5%	55.8%	52.3%	39.5%	20.8%	32.6%	37.8%
Less than High School	13.9%	42.8%	34.8%	51.8%	22.3%	19.7%	10.7%	59.9%	37.6%	41.9%
High School	27.7%	17.0%	15.2%	18.3%	21.5%	23.2%	18.1%	20.5%	22.3%	26.3%
SomeCollege	32.7%	20.9%	30.8%	22.6%	31.8%	25.1%	24.1%	15.0%	19.4%	22.0%
Bachelors	16.8%	11.4%	14.8%	5.7%	17.8%	13.8%	24.8%	3.5%	15.7%	7.4%
Masters	6.40%	4.80%	2.50%	1.10%	3.60%	11.7%	14.6%	0.70%	2.50%	1.70%
Professional	1.70%	1.80%	1.50%	0.30%	2.10%	4.70%	3.90%	0.30%	1.70%	0.50%
Doctorate	0.80%	1.30%	0.40%	0.20%	0.90%	1.80%	3.80%	0.10%	0.80%	0.20%
Average Age	41.6	38.7	37.3	37.6	36.8	40.0	39.9	35.8	36.4	32.9
32.9Female	51.1%	50.5%	46.1%	53.1%	48.6%	49.3%	52.9%	50.2%	45.6%	51.0%
Married	56.5%	65.1%	60.6%	61.3%	62.2%	68.2%	68.4%	68.5%	61.9%	50.0%
Average NChild	0.76	1.14	1.29	1.74	1.40	1.02	1.00	2.48	1.42	1.48

Appendix Table 3: 2006-2010 Descriptive Statistics

	Natives	Other immigrants	Vietnamese refugees	Cambodian refugees	Afghan refugees	Romanian refugees	Russian refugees	Laotian refugees	Iraqi refugees	Somali refugees
Sample Size	794752	1341090	19757	3485	606	1486	12959	2122	1812	1550
Employed	70.3%	70.0%	75.4%	68.3%	70.3%	75.1%	75.6%	65.8%	51.0%	54.1%
Unemployed	5.4%	5.5%	4.6%	4.4%	6.4%	5.3%	5.0%	6.3%	11.5%	13.8%
NILF	24.3%	24.5%	20.0%	27.3%	23.3%	19.6%	19.4%	27.9%	37.5%	32.1%
Usual hours worked per week	31.1	30.8	33.4	30.4	30.6	33.6	32.3	28.6	22.5	23.1
No English	0.0%	8.8%	2.0%	4.6%	1.8%	0.1%	1.4%	8.9%	5.1%	7.9%
Some/ well English	1.00%	39.3%	55.8%	59.0%	39.2%	31.8%	43.4%	63.8%	52.9%	49.3%
Excellent/ only English	98.9%	51.9%	42.2%	35.4%	59.1%	68.1%	55.1%	27.3%	41.9%	42.9%
Less than High School	9.5%	27.3%	23.2%	39.1%	16.3%	11.7%	4.6%	44.7%	25.8%	38.8%
High School	29.1%	22.0%	15.8%	23.7%	18.5%	24.6%	15.2%	26.4%	25.9%	26.2%
SomeCollege	33.4%	21.6%	27.2%	22.8%	29.9%	25.6%	25.1%	20.4%	23.2%	25.5%
Bachelors	18.2%	17.2%	24.3%	11.1%	26.9%	19.5%	29.1%	6.9%	18.3%	6.8%
Masters	7.0%	7.7%	5.2%	2.2%	4.3%	11.9%	17.0%	1.2%	3.2%	1.6%
Professional	1.8%	2.3%	3.1%	0.7%	3.5%	4.8%	4.4%	0.3%	1.8%	0.8%
Doctorate	0.9%	2.0%	1.2%	0.3%	0.7%	1.8%	4.7%	0.2%	1.7%	0.3%
Average Age	42.3	41.0	45.6	45.3	43.0	44.6	41.3	40.3	38.2	33.8
Female	51.1%	51.0%	46.1%	52.5%	47.9%	50.8%	53.2%	52.2%	47.2%	54.1%
Married	56.1%	65.0%	72.3%	68.5%	76.1%	69.2%	66.0%	68.3%	63.5%	49.2%
Average NChild	0.74	1.11	1.23	1.54	1.58	0.89	0.88	2.38	1.49	1.83

Appendix Table 4: Average Real Income of Full-Time Year Round Employed Individuals (Sample size in Brackets)

	Natives	Other immigrants	Vietnamese refugees	Cambodian refugees	Afghan refugees	Romanian refugees	Russian refugees	Laotian refugees	Iraqi refugees	Somali refugees
1980	$42,796 (67520)	$41,831 (187825)	$33,036 (1879)	$28,378 (83)	N/A	N/A	N/A	N/A	N/A	N/A
1990	$48,088 (70193)	$46,259 (317907)	$40,638 (7335)	$32,002 (1051)	$36,684 (121)	$42,694 (500)	$41,743 (230)	$27,566 (223)	N/A	N/A
2000	$51,527 (77254)	$48,315 (496464)	$49,526 (10527)	$36,054 (1631)	$44,779 (267)	$56,519 (704)	$52,778 (6111)	$30,837 (966)	$35,640 (417)	$29,603 (213)
2001-2005	$54,672 (406813)	$51,366 (292086)	$54,897 (5563)	$39,223 (844)	$45,965 (142)	$60,191 (438)	$61,329 (3480)	$33,309 (589)	$41,625 (218)	$29,263 (130)
2006-2010	$56,692 (422592)	$51,697 (717598)	$59,120 (12526)	$41,476 (1997)	$60,124 (321)	$59,099 (873)	$65,591 (7741)	$34,961 (1162)	$41,850 (607)	$31,461 (516)
2011-2015	$56,286 (422711)	$52,924 (768673)	$62,734 (12138)	$42,855 (1826)	$56,711 (273)	$67,936 (765)	$71,310 (7573)	$36,629 (1115)	$40,721 (1039)	$30,825 (649)

Appendix Table 5: Regression Results of Refugees versus Other Immigrants (Based on Regression 1)

Variable Name	1980	1990	2000	2001-2005	2006-2010	2011-2015
Constant	10.469 (5970.962)	10.546 (8294.131)	10.534 (9863.341)	10.601 (7398.995)	10.590 (11366.501)	10.586 (11257.650)
Vietnamese Refugee	-0.165*** (-9.535)	-0.021** (-2.501)	0.137*** (18.356)	0.177*** (16.704)	0.240*** (33.335)	0.264*** (34.643)
Cambodian Refugee	-0.355*** (-4.350)	-0.235*** (-10.625)	-0.126*** (-6.685)	-0.107*** (-3.980)	-0.070*** (-3.912)	-0.001 (-0.055)
Afghan Refugee	N/A	-0.118* (-1.807)	-0.004 (-0.088)	0.002 (0.037)	0.194*** (4.359)	0.095* (1.890)
Romanian Refugee	N/A	-0.029 (-0.913)	0.225*** (7.832)	0.196*** (5.247)	0.246*** (8.854)	0.339*** (11.124)
Russian Refugee	N/A	-0.041 (-0.869)	0.155*** (16.069)	0.234*** (17.693)	0.298*** (32.977)	0.359*** (37.648)
Laotian Refugee	N/A	-0.412*** (-8.780)	-0.311*** (-13.080)	-0.300*** (-9.599)	-0.250*** (-10.942)	-0.229** (-9.386)
Iraqi Refugee	N/A	N/A	-0.261*** (-7.195)	-0.222*** (-4.277)	-0.172*** (-5.354)	-0.267*** (-10.509)
Somali Refugee	N/A	N/A	-0.361*** (-7.143)	-0.404*** (-5.839)	-0.419*** (-12.056)	-0.407** (-12.434)
Adjusted R-Square	0.001	0.001	0.002	0.003	0.004	0.004
Sample Size	179019	307664	489243	285709	699913	749746

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level

Appendix Table 6: Regression Results of Refugees versus Natives (Based on Regression 1)

Variable Name	1980	1990	2000	2001-2005	2006-2010	2011-2015
Constant	10.519 (3805.485)	10.619 (4147.983)	10.654 (4240.804)	10.715 (9488.723)	10.722 (9402.371)	10.692 (9070.742)
Vietnamese Refugee	-0.215*** (-13.053)	-0.094*** (-11.284)	0.018** (2.465)	0.063*** (6.397)	0.108*** (15.724)	0.158*** (22.019)
Cambodian Refugee	-0.405*** (-5.255)	-0.308*** (-14.607)	-0.245*** (-13.934)	-0.222*** (-8.831)	-0.202*** (-12.057)	-0.107*** (-5.879)
Afghan Refugee	N/A	-0.191*** (-3.082)	-0.123*** (-2.836)	-0.112* (-1.801)	0.061 (1.461)	-0.011 (-0.243)
Romanian Refugee	N/A	-0.102*** (-3.371)	0.106*** (3.961)	0. 082** (2.355)	0.114*** (4.326)	0.233*** (8.169)
Russian Refugee	N/A	-0.113** (-2.558)	0.036*** (3.902)	0.119*** (9.737)	0.166*** (19.333)	0.253*** (28.227)
Laotian Refugee	N/A	-0.485*** (-10.893)	-0.430*** (-19.413)	-0.414*** (-14.254)	-0.383*** (-17.750)	-0.335*** (-14.691)

Iraqi Refugee	N/A	N/A	-0.380*** (-11.280)	-0.336*** (-6.964)	-0.304*** (-10.066)	-0.373*** (-15.708)
Somali Refugee	N/A	N/A	-0.480*** (-10.239)	-0.518*** (-8.050)	-0.552*** (-16.827)	-0.514*** (-16.760)
Adjusted R-Square	0.003	0.006	0.009	0.001	0.003	0.005
Sample Size	65496	75014	92511	393972	425304	427740

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level

Appendix Table 7: Regression Results of Refugees versus Other Immigrants (Based on Regression 2)

Variable Name	1980	1990	2000	2001-2005	2006-2010	2011-2015
Constant	8.652 (449.557)	8.622 (646.373)	8.779 (785.312)	8.676 (554.914)	8.570 (842.063)	8.345 (756.675)
Vietnamese Refugee	-0.120*** (-8.078)	0.001 (0.109)	0.070*** (11.445)	0.106*** (12.380)	0.117*** (20.292)	0.126*** (20.725)
Cambodian Refugee	-0.290*** (-4.136)	-0.078*** (-4.333)	0.007 (0.435)	0.017 (0.786)	0.023 (1.591)	0.053*** (3.420)
Afghan Refugee	N/A	-0.124** (-2.335)	-0.093** (-2.435)	-0.075 (-1.397)	0.047 (1.323)	-0.014 (-.354)
Romanian Refugee	N/A	-0.158*** (-6.151)	0.055** (2.356)	0.051* (1.688)	0.089*** (4.005)	0.208*** (8.551)
Russian Refugee	N/A	-0.260*** (-6.879)	-0.125*** (-15.892)	-0.035*** (-3.288)	0.009 (1.244)	0.069*** (9.058)
Laotian Refugee	N/A	-0.175*** (-4.600)	-0.048** (-2.496)	-0.044* (-1.767)	-0.022 (-1.198)	-0.025 (-1.309)
Iraqi Refugee	N/A	N/A	-0.197*** (-6.662)	-0.206*** (-4.924)	-0.163*** (-6.403)	-0.269*** (-13.314)
Somali Refugee	N/A	N/A	-0.174*** (-4.246)	-0.229*** (-4.100)	-0.219*** (-7.895)	-0.174*** (-6.663)
Female	-0.404*** (-125.920)	-0.305 *** (-143.816)	0-.263*** (-148.234)	-0.264*** (-112.133)	-0.262*** (-174.088)	-0.256*** (-168.759)
Age	0.059*** (60.234)	0.059 *** (86.129)	0.052*** (89.80)	0.058*** (72.958)	0.060*** (118.450)	0.065*** (124.215)
Age Squared	-0.001*** (-50.091)	-0.001 *** (-69.484)	-0.001*** (-74.008)	-0.001*** (-62.373)	-0.001*** (-102.182)	-0.001*** (-106.142)
Married	0.089*** (23.447)	0.101*** (40.817)	0.087*** (43.056)	0.074*** (27.155)	0.087*** (50.236)	0.106*** (61.171)
NChild	-0.006*** (-4.542)	-0.004*** (-4.182)	-0.002*** (-2.931)	-0.005*** (-4.330)	-0.001 (-0.789)	-0.002*** (-3.297)
English	0.336*** (46.736)	0.311*** (61.026)	0.246*** (64.002)	0.258*** (51.134)	0.263*** (81.204)	0.258*** (72.823)

High School1980/ HighSchool	0.200*** (49.016)	0.219*** (73.147)	0.215*** (83.682)	0.173*** (49.315)	0.179*** (78.614)	0.184*** (78.432)
College1_3/ Some College	0.330*** (74.202)	0.399*** (137.825)	0.419*** (167.228)	0.413*** (115.916)	0.418*** (181.356)	0.419*** (178.424)
College4/ Bachelor's Degree	0.506*** (90.261)	0.647*** (195.408)	0.755*** (275.988)	0.753*** (203.875)	0.774*** (326.878)	0.828*** (344.403)
College_Plus	0.680*** (133.465)	N/A	N/A	N/A	N/A	N/A
Master's Degree	N/A	0.813*** (178.348)	0.963*** (266.440)	0.993*** (216.219)	1.051*** (360.376)	1.112*** (388.999)
Professional Degree	N/A	1.051*** (159.159)	1.094*** (203.685)	1.189*** (167.539)	1.298*** (281.163)	1.400*** (295.526)
Doctorate Degree	N/A	0.915*** (126.083)	1.030*** (177.556)	1.125*** (160.188)	1.173*** (254.701)	1.238*** (276.031)
Adjusted R-Square	0.261	0.346	0.341	0.353	0.369	0.370
Sample Size	179019	307664	489243	285709	699913	749746

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level

Appendix Table 8: Regression Results of Refugees versus Native Workers (Based on Regression 2)

Variable Name	1980	1990	2000	2001-2005	2006-2010	2011-2015
Constant	8.574 (129.165)	8.485 (145.822)	8.616 (183.800)	8.427 (195.649)	8.188 (220.008)	8.095 (204.403)
Vietnamese Refugee	-0.179*** (-12.544)	-0.047*** (-6.591)	-0.004 (-0.652)	0.014* (1.649)	0.003 (0.565)	0.009 (1.511)
Cambodian Refugee	-0.348*** (-5.278)	-0.130*** (-7.277)	-0.075*** (-5.001)	-0.088*** (-4.210)	-0.101*** (-7.332)	-0.077*** (-5.121)
Afghan Refugee	N/A	-0.165*** (-3.176)	-0.163*** (-4.452)	-0.161*** (-3.118)	-0.064* (-1.866)	-0.130*** (-3.401)
Romanian Refugee	N/A	-0.199*** (-7.856)	-0.002 (-0.092)	-0.018 (-.618)	0.005 (0.246)	0.115*** (4.934)
Russian Refugee	N/A	-0.300*** (-8.071)	-0.173*** (-21.632)	-0.088*** (-8.582)	-0.062*** (-8.731)	0.012 (1.598)
Laotian Refugee	N/A	-0.237*** (-6.294)	-0.135*** (-7.060)	-0.168*** (-6.916)	-0.145*** (-8.154)	-0.168*** (-9.011)
Iraqi Refugee	N/A	N/A	-0.281*** (-9.860)	-0.300*** (-7.479)	-0.270*** (-10.874)	-0.363*** (-18.742)
Somali Refugee	N/A	N/A	-0.247*** (-6.223)	-0.314*** (-5.863)	-0.304*** (-11.278)	-0.288*** (-11.494)

Female	-0.433*** (-86.789)	-0.361*** (-86.963)	-0.325*** (-84.981)	-0.328*** (-173.860)	-0.319*** (-173.185)	-0.307*** (-161.929)
Age	0.072*** (48.333)	0.074*** (54.491)	0.070*** (54.225)	0.077*** (122.510)	0.081*** (134.453)	0.082*** (133.756)
Age Squared	-0.001*** (-40.533)	-0.001*** (-46.318)	-0.001*** (-46.834)	-0.001*** (-105.373)	-0.001*** (-115.786)	-0.001*** (-112.349)
Married	0.103 *** (18.246)	0.104*** (21.651)	0.104*** (23.889)	0.100*** (46.464)	0.118*** (56.422)	0.140*** (65.258)
NChild	0.002 (1.057)	-0.010*** (-5.308)	-0.005*** (-2.710)	0.012*** (12.481)	0.015*** (15.654)	0.016*** (16.482)
English	0.217 *** (3.547)	0.298*** (5.658)	0.200*** (5.006)	0.224*** (5.418)	0.267*** (7.557)	0.214*** (5.674)
High School1980/ HighSchool	0.220 *** (32.139)	0.171*** (25.555)	0.172*** (24.235)	0.165*** (40.098)	0.194*** (44.562)	0.193*** (40.869)
College1_3/ Some College	0.322 *** (43.197)	0.331*** (49.215)	0.344*** (49.679)	0.353*** (86.739)	0.384*** (89.806)	0.377*** (81.491)
College4/ Bachelor's Degree	0.537 *** (59.435)	0.608*** (79.194)	0.695*** (92.975)	0.694*** (163.391)	0.762*** (172.463)	0.776*** (163.331)
College_Plus	0.590 *** (61.129)	N/A	N/A	N/A	N/A	N/A
Master's Degree	N/A	0.713*** (66.398)	0.824*** (86.113)	0.856*** (169.551)	0.927*** (183.469)	0.944*** (177.850)
Professional Degree	N/A	0.972*** (61.252)	1.038*** (73.649)	1.153*** (161.774)	1.301*** (185.226)	1.342*** (184.461)
Doctorate Degree	N/A	0.824*** (34.085)	0.955*** (52.720)	0.989*** (108.270)	1.094*** (123.222)	1.141*** (128.572)
Adjusted R-Square	0.271	0.304	0.296	0.309	0.330	0.338
Sample Size	65496	75014	92511	393972	425304	427740

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level