Immigrant Integration in the United States During the Age of Mass Migration

by

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This paper focuses on particular immigrant groups, examining the integration extent between the US-born whites and first- and second-generation immigrants during the Age of Mass Migration. From empirical evidence in this paper, I find that immigrants suffered an income penalty in the labor market, and second generation were more integrated into the US labor market. Immigrants with greater cultural distance suffered more penalties. This paper explores the difference in immigration behaviors and their outcomes in the US from a historical perspective, encouraging to look back when thinking about immigration trends today.

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1. Introduction

U.S. Customs and Border Protection (CBP) is facing surging illegal border crossings in recent years especially after the lift of pandemic restrictions. Arrests for illegal crossings from Mexico reached an all-time high in December 2023 to 249785, up 13 percent in December 2022, the previous all-time high (AP, 2024). Many of them are from Mexico, Venezuela, Guatemala, Honduras, and a rising number from China recently. They are willing to take the risk to cross Panamanian jungle to the United States for strict immigrant policy and no access legally. Compared to one century ago, people nowadays can't cross borders freely and face substantial restrictions moving to the US while the borders were nearly open before 1920. Though the characteristics of immigrants are changing from time to time, what the same is that the US is always the prior dream land for people to escape from poverty and seek their own opportunities for centuries no matter by means of legal or illegal.

The US was a regime of nearly open borders to immigrants before 1920, and it brought over 30 million Europeans in the century following 1820. These immigrants contributed in industrialization, agricultural and business innovations, knowledge, abundant labor force, etc. (Sequeira et al., 2017). However, did the US labor market react fairly to the immigrants' contribution? Did immigrants get considerable returns in the US compared to the native counterparts? Did American labor market favor some immigrant groups than others? The purpose of this paper is to investigate the integration extent between US-born whites and immigrants from certain source countries by examining the labor market performance of first and second generations during the Age of Mass Migration (1850-1920). The reason to choose mass migration period is that it's the time that motivation of migration more depends on individual free will without filtering the educational and skill attainment and the census data of this period is available from the Integrated Public Use Microdata Series (IPUMS). Two measurements are examined in terms of labor market performance in this paper, one labor force participation, another occupational performance. I select seven source countries, Canada, Mexico, England, Ireland, Italy, Germany and Sweden, to see their patterns over these seventy years, including Canada and Mexico for they sharing borders with the USA and their patterns may differ from other typical Europe source countries to my interests. And the study groups involve two generations because the integration extent can be evaluated from the outcomes of the second-generation immigrants. I restrict to male immigrants and US-born male whites since men took the majority of labor force that time and it can exclude the impact of sex discrimination. Only focusing on native whites to make sure the reference comparision is the most advantageous one in groups. Single cross-sectional data are used for analysing since I don't exclude the return migration in this paper which could upward bias estimates and have no idea how to construct longitudinal data for immigrants now. From the results of the regression model, I find that all immigrant groups had an initial earning penalty compared to the native whites, while the English immigrant group was the least disadvantaged one, who shared a very similar culture with the US. And the second generation from England exceeded the occupation score of US-born whites. In contrast, Italian and Mexican immigrant groups got

more income penalty, with greater cultural distance from the US. In general, the second generation of immigrants achieved better scores than their parents, indicating deeper integration into the American society. My findings are contradictory with results from Abramitzky et al. (2014) who construct newly assembled panel data by matching observations between three censuses. The limitation of this paper is obvious, based on biased dataset not considering returned migrants and decline quality of immigrant arrival cohorts. In addition, it is statistically significant that single men suffered more penalty than the married both in natives and immigrants. The impact of residing region is not clear. More variables or factors should be considered in my view.

There are many brilliant papers on economic or social assimilation of immigrants no matter during the Age of Mass Migration or in the contemporary US, so the contribution of this paper is limited. But to some particular immigrant groups, I may explore the difference in immigration behaviors and their outcomes in the free world that once existed. Moreover, it's important to look backwards and learn from the past experience with immigration when moving forward and thinking about immigration trends today.

This paper is structured as follows. It begins with an introduction of the historical setting and the immigrants in the United States. An overview of the theory and previous studies is in Section 3. In section 4, I raise three hypotheses based on previous research. In section 5, I introduce dataset and variables first, and then the method. Section 6 discusses the results from labor force performance, and an extra discussion on the marriage premium and region effect. The conclusion is in Section 7.

2. Background

2.1 Emigration to the United States

The Age of Mass Migration is commonly referred to the period from 1850 to World War 1, over 30 million Europeans went to the United States. Emigrants from non-European countries only accounted for a minor part of the inflows to the US, such as Mexico (Ager and Brückner, 2013). The only large scaled intercontinental migration had been the black slave trade before this wave of migration. Fleeing crop failure, land shortages, burdened taxes, famine or political/religious persecution, around 55 million Europeans sought their economic opportunities, own believes or personal freedom in the New World destinations with abundant resource in nearly the century after 1820. The cost of the intercontinental move was too high for many migrants to afford in the early of the nineteenth century. There were three possible ways to solve the transportation problem that time, indentured servitude, transportation abroad in convict chains, and coercion through slavery. Along with the development of technology, the cost of passage declined, making migration affordable and convenient relatively. And families were intended to reduce risks and willing to invest family members to seek fortunes overseas. These new changes encouraged Europeans to move as the century progressed.

According to historical material (Ferenczi and Willcox, 1929), from 1846 to the middle of 1870s, about 300 thousand people on average emigrated from Europe to other continents per year. The figures were over doubled in the next two decades. And it was up to over one million per year at the beginning of the twentieth century. Apart from the absolute numbers, the source countries changed dramatically. The main emigration stream started from British Isles and Germany in the first half of the century. More and more Scandinavian and other northwest Europeans joined in emigration in the 1850s, and followed by Southern and Eastern Europeans in the 1880s. Emigrants from the south and east accounted for the most of rising totals in the late nineteenth century, and the emigrant countries included Italy, Austria-Hungary, Poland, Russia, Spain and Portugal. The destination of majority of the European emigrants, around three fifths of them, was the United States. Therefore, the inflow pattern of the US closely replicates the European emigration, no matter the figures or the changes of source countries. The inflow number to the US was near one million every year after the turn of the century. Since the changes of source countries in the century, some scholars see Irish, English, Germans, Scandinavians as the old immigrants in the US while such as Italians, Russian, Polish the new immigrants who didn't arrive in large numbers until the 1880s. Besides the Europe, the source country was from the New World too, especially Canada. The number of Canadian immigrants to the US was nearly the same those from Europe to Canada in 1900. Though the US was the dominant receiving country, there were other important flows in the world, such as inflows to South America after the middle of 1880s and to Canada, a constant stream from the United Kingdom to Australia, New Zealand and South Africa.

Specifically, there are historical data showing the emigration trends in European countries at different time period. The emigration rate of British Isles per thousand of population between 1851 and 1860 was 58, and the rate was steady, a bit of over 50 percent, until 1910. The emigration rates for Irish were up to 140 per thousand of population from 1881 to 1890, then declined to 69.8 in 1910. Emigration rates for Italy were increasing from 10.5 in the 1870s to 107.7 in the 1900s. In contrast, the immigration rates in the US, as a receiving country in the New World, were over 50 per thousand of population, up to 102 in the 1900s. The high migration rates could affect economic outcomes or demographical structures significantly both in sending and receiving countries.

2.2 Characteristics and Potential Contributions of Immigrants

As mentioned above, the destination of majority European immigrants was the US, and non-European immigrants only accounted a very small number in the US. Therefore, by answering the question "who were the emigrants from Europe", the characteristics of immigrants in the US were clear as well. Hatton and Williamson (1992) conclude the characteristics of European emigrants in five aspects by examining its composition.

They were young adults, mostly aged between 15 and 40. So immigrants were active to participate in the labor force which can be seen from the latter section for the first-generation immigrants. A finding from Swedish female immigrants shows that the labor force participation rate of Swedish female immigrants was 4 percentage points higher than native white females until 1920 (Rooth and Scott, 2012).

Migrants were dominated by males, and men accounted for 64 percent of all immigrants in the US between 1851 and 1910. The proportion of females varied among sending countries. Compared to low composition from Italy and Spain, female immigrants from Ireland accounted for 48 percent.

The emigrants were more likely to be single with little burden, and came to receiving countries individually. There were family groups though, most young couples with their children.

The majority of latter immigrants were financial or life aided by previous immigrants in destination countries. There is abundant evidence about it. For example, 30 percent of Finnish emigrants traveled to destination countries on prepaid tickets. It is clear that previous emigrants encouraged the latter ones, which is called persistence or path dependence. Some scholars use the term "chain migration" or the "friends and relative effect" to depict this phenomenon. Diffusion and path dependence played an important role in the early stages of mass migration, both in encouraging more emigration and determining the destinations. In contrast, economic forces, such as per capita income, is the determinant of destination at the turn of century. Many research showed that descendants from a given origin place often followed the path of earlier emigrants to specific overseas locations. Then the concentration of immigrants would lead to residential segregation from the natives. For Europeans, Segregation peaked in 1900 and 1910.

Segregation for "new immigrants" from southern and eastern Europe was stronger than segregation for the "old immigrants" of the west and north during the early 20th century (Eriksson and Ward, 2022). Ethnic enclaves could provide benefits to the new arrivals, like job information, accommodation and social connections. However, living in enclaves can hinder economic outcomes in the long run for reducing investment into specific human capital or social network of the US. Abramitzky et al. (2024) track Jewish households who left enclave neighbors from 1900 to 1922 with the support from the Industrial Removal Office, finding participants earned more after relocation, suggesting leaving enclave can contribute to an upward mobility and integrate into the economy.

Most of immigrants were unskilled and poor. On one hand they were young, on the other hand the skilled were more likely to stay. A convincing example is from Norwegian historical practice during 1850 and 1913. Parental wealth discouraged migration, the oldest son from a wealthy family less likely to migrate. The poor could gain from the high returns to migration because of low migration costs and access to migrant networks that time (Abramitzky et al., 2013). This is very different from contemporary migration. Generally, one needs to rely on the family support or wealth to afford his/her migration especially to the Global North.

The flourish of industrial and agricultural development of the US wouldn't be achieved without the contribution from the large number of these young, unskilled and single immigrants before 1920. First, a large supply of immigrant labors fueled the industrialization of the US. The flooded of labor force can reduce the labor costs. A study from Goldin (1994), that immigrant population increased one percent would lead to a 1-1.5 percent decrease in wages from 1890 to 1903. Second, though most of immigrants worked in unskilled jobs, there were still many working in semi-skilled or skilled occupations. Evidence from Abramitzky et al. (2014), immigrants more likely to hold semi-skilled or skilled blue-collar occupations in 1900, less likely to work in farming. Moreover, different groups would bring their own skills to work for particular occupations, and the practice is still applied in contemporary context. Third, immigrants contributed to agriculture productivity in the US, based on their knowledge about agricultural techniques and experience back in home country. A notable immigrant group was the German in the farming sector. An investigation from Gripshover and Bell (2012) shows that 19 percent of 81 inventors on agricultural innovation were the foreign-born and 49 percent were either first- or second-generation immigrants. Forth, immigrants contributed to technology development through remarkable innovations. Many famous scientists or inventors were foreign born and moved to the US. Fifth, educational system of the US benefited a lot from German model. The concept of kindergarten was brought by a German immigrant, and the Americans studied from the Prussian practice to form the State University system (Sequeira et al., 2017).

2.3 Migrate Regulation in the United States Before 1920

There was no regulation or policy to restrict European immigrants during the Age of Mass Migration. The US was nearly one country with open borders to all immigrants before 1920 except the Chinese Exclusion Act (1882). The Chinese Exclusion Act was the first important

law restricting immigration into the US, approved in May, 1882. It provided a 10-year ban on Chinese laborers, and it was extended later, virtually ending Chinese immigration for nearly a century. The Chinese immigrant group is excluded from the research groups in this paper because of the act, though many Chinese immigrated to the US for the California gold rush in the middle of nineteenth century.

The significant change in the US immigration policy was in the early of 1920s, the passage of Emergency Quota Act of 1921. It marked that the era of open immigration to the US came to an abrupt end (Goldin, 1994). Choosing the research period from 1850 to 1920 can ignore the policy effect and immigrant bias.

Immigrants entered the US through several ports that time. European immigrants generally came through East Coast facilities. Over 70 percent of all immigrants entered through New York City. Most immigrants landed at the Castle Garden depot neat the tip of Manhattan throughout the late 1800s. The US government opened a new immigration processing center on Ellis Island in New York harbor in 1892.

2.4 Effects from the Age of Mass Migration in the US

Many immigrants flooded into the USA, triggering widespread anti-immigration sentiments and hostile political reactions, resulting in the passage of immigration restrictions (Immigration Acts), which slowed down economic activity and industrialization of the US in that time (Tabellini, 2020).

Apart from legislation, as an important period in the US history, Sequeira et al. (2017) study the effects of European immigrants to US development both in the short run and long run. They connect counties with the railway network and total inflow of immigrants. In the short run, immigrants had an immediate positive effect on industrialization, as well as in agriculture but the benefits primarily arising after the end of the age of mass migration. In terms of economic impacts, locations with more historical immigration have higher incomes, less unemployment, greater educational attainment and higher urbanization in the long run. But they didn't affect social structures, such as social capital and political participation, and no increase or decrease in crime rates.

3. Theory

3.1 Concept of Assimilation

The concept of assimilation can be traced to colonial times at least in the American context, while assimilation for understanding of immigration is in the early twentieth century. Park and Burgess provided a definition of assimilation in 1921, social processes that bring ethnic minorities into mainstream of American life. Park later made clearer statement of it, viewing assimilation as progressive, irreversible and inevitable outcome in multiethnic societies, which was not agreed by some scholars later. Assimilation theory was viewed as a social process rather than a causal factor to affect outcomes in classical formulations. The most complete and refined assimilation theory is from Milton Gordon (1964). Gordon provided seven dimensions to state the systematic concept, and the distinction in his concept is between acculturation and structural assimilation meaning the entry of members from an ethnic minority into primary-group relationships with the majority group. One of the limitations of Gordon's theory is tended to a micro-sociological state of assimilation not integrated to larger social processes. The pattern of acculturation extends beyond the acquisition of English, to dress and outward expression, and to personal values in Gordon's discussion. A cultural standard is the "middle-class cultural pattern of white Protestant, Anglo-Saxon origins" in Gordon's view.

The concept of assimilation theory is under revision and critiques in the contemporary context. The composition of immigrant groups and the context of reception in the US are different between the post-1965 wave of immigrants and early immigrants of twentieth century. The immigrants are primarily from Asia and Latin America in the contemporary, while during the age of migration the majority of them were Europeans. The economic or social context is changed as well. The assimilation and mobility of 1890 to 1920 were facilitated by the manufacturing-based economic expansion of that period, but the current service-based economy is less favorable for immigrant workers (Greenman and Xie, 2008). Some scholars propose the "segmented assimilation theory", stating that different segments are available for immigrants to assimilate into because of the unequal and stratified society. There are three possible paths of assimilation. The first is an integration into the American middle class. The second is to integrate into the urban underclass, a downward mobility. The third is the deliberate preservation of own culture and traditions, along with the economic integration (Portes and Zhou, 1993).

3.2 Previous Research of Assimilation in the US

The political debate over the migrations in the US can be traced after the1890s, with the facts that the US received majority of immigrants. The concern of immigrants stimulated investigations of the Immigration Commission started in 1907 and completed in 1911. The Commission set a racial distinction between the old immigrants (those from western and northern Europe) and the new immigrants (those from southern and eastern Europe) and concluded that new immigrants were inferior to the old. In addition, from the report, new immigrants tended to live in together in sections in cities, apart from native Americans and the older immigrants which slow the assimilation compared to earlier non-English-speaking races (Hatton and Williamson, 1998). The publication of the Commission report received criticism and encouraged scholars to assess the labor market performance of immigrants. For example, McGouldrick and Tannen (1977) use the published data from the Immigration Commission and data from the 1890 Commissioner of Labor survey, finding there was no earning differentials between natives and immigrants from northwest Europe while those from southeast received 5-10 percent less. Francine Blau (1980) concludes that immigrants were initially at a disadvantage but wage growth was faster than natives, and southeast European got more penalty than northwest European as well. Hatton and Williamson (1998) argue that labor market performance of old immigrants arriving before 1890 is not bad, and there is not much wage profiles difference between second-generation immigrants and natives of native parents by reexamining the data from Michigan Bureau of Labor and Industrial Statistics in 1890. The wage growth rate of immigrants was faster than natives, and they would catch up natives eventually. In addition, the assimilation of the old immigrants was easier than the new which was agreed widely. Recent work about the economic assimilation in the Age of Mass Migration is from Abramitzky et al. (2014). They argue that cross-sectional data are biased by a secular decline in the quality of immigrant cohorts and leaving of unsuccessful return migrants. They raise new views about immigrant assimilation in this period by using a new matching panel data of 21000 natives and immigrants from 16 origin European countries. First, the initial income penalty to immigrants is overstated. Specifically, long-term immigrants from relative developed European countries were employed to occupations with higher wage than US natives at their first arrival. And those from less developed countries started with equal or lower wage. And immigrants shared the similar occupational ladder with the natives, so the initial gaps were preserving over time. Second, the gap would persist to the second generation. Third, immigrants with low skill levels at first arrival did not make up the skill gap with natives. The results challenge conventional views above.

The research about immigrant assimilation after 1950 concerns the similar questions about like assimilation speed, quality of immigrants. Chiswick (1978) concluded that immigrants would exceed natives after 10-15 year in the US in earnings with given years of education. From another opinion (Borjas, 1985), the quality of later immigrant cohorts declined, and it biased upwards the assimilation effect. More recent work from Borjas (2015) suggests that more recent immigrant cohorts have relatively lower entry wages and low growth rate in earnings which shows a much smaller rate of economic assimilation by investigating the earnings of immigrants from 1970 to 2010. In addition, the origin countries should be paid attention to when studying the labor market performance of immigrants. Borjas (1994) estimates that the declined quality

of immigrants between 1960 and 1980 was related to the changing origin countries of immigrants. For example, dominated inflow of immigrants to the US changed to Latin America and Asia in the later of 20th century. Immigrants from Mexico made up 25 percent of inflow to the US in the 1990s, and their economic outcomes and assimilation were not as good as other nationality immigrants. Borjas and Katz (2005) study the evolution of Mexican immigrants in the US in two centuries, finding the wage convergence between Mexican immigrants and their native-born counterparts is much weaker than the convergence to non-Mexican immigrants on average. The second generation of Mexican ancestry lag behind other second generations of non-Mexican ancestry in economic performance. There are other forms of assimilation study, such as homeownership. Immigrants have lower homeownership rates than natives during 1980 and 2000, and this gap widened significantly over time (Borjas, 2002). The different location decisions and changing of origin countries of immigrants can explain the homeownership gap.

Apart from economic assimilation, there are studies of the possible relation between social/cultural assimilation and economic outcomes in the US. Ward (2016) argues that earlier immigrants in the 20th century could acquire English rapidly, and strong English skill was correlated to a small earning rise. The language barrier has become larger for assimilation over one century since the language premium at least doubled until 2010. Abramitzky et al. (2016) take name as a measure of cultural assimilation. It reveals the cultural assimilation process through offsprings' name of immigrants. They study two periods, one the Age of Mass Migration (1850-1913), the other more contemporary period (1990-today), finding that children with more native names could get positive outcomes in the early 20th century. Name-based assimilation is faster for immigrants with greater cultural distance from natives. Brothers with more foreign names had fewer schooling years, faced higher unemployment, earn less and were more possible to marry foreign-born spouses.

4. Hypotheses

Three hypotheses are raised to test the views of integration extent of first- and second-generation immigrants with different nationalities.

Hypothesis One: there is a disparity in labor market performance between US-born whites and immigrants. All immigrant groups had initial earning disadvantages than natives.

According to Hatton and Williamson (1992), unskilled young adults were the common composition of migrant flows to the US. They didn't have local studying or working experience and citizenship, in a disadvantaged place compared to natives. Immigrants didn't have specific US skills at first arrival, plus with the English language barrier. The recognition and outcomes from labor market of immigrants were not as much as natives. As aliens in the host country, immigrants might bear the discrimination of origin, religion or race.

Hypothesis Two: the negative effects in labor market performance should be greater for immigrants with greater cultural distance.

Previous study from Hatton and Williamson (1998), using data of Michigan Ironworkers (1890) and Immigration Commission (1911), shows that English immigrants did better than other nationality groups. English and Irish were both considered to be "older" than other immigrant groups in the US. Irish had been there even longer than average but not as well as English in terms of weekly wage. I assume cultural difference affects labor market outcomes. Mexican immigrants should be the most different cultural group with the US, followed by Italians and Irish. English and Canadian share the most common culture with the US. Therefore, Mexican immigrants were at the most inferior place which might be implied from the worst average occupational score above. English and Canadian immigrants shall be the least disadvantaged groups.

Hypothesis Three: the labor market performance of second-generation immigrants is more integrated with US-born whites than their parents.

Second-generation immigrants were born and raised in the destination country, having the citizenship naturally and more recognized by local employers than first generation. They were more "American", and the advantages they had should help to integrate into native society easily and deeply. Evidence from Michigan (Hatton and Williamson, 1998) shows second-generation immigrants had wage profiles much like natives with native parents.

5. Data and Method

This section describes general information of selected immigrant groups, dataset and variables first, then descriptive statistics of research groups, and at last the method and hypotheses.

As mentioned, the purpose of this paper is to investigate the integration extent between US-born whites and immigrants from certain source countries by examining the labor market outcomes of first and second generations in the age of mass migration (1850-1920). The definition of immigrants in this paper is that the birthplace of a person is not in the US, otherwise the natives. The second generations of immigrants are defined as being born in the US while at least one parent is born in other countries. More specifically, for instance, a second-generation German immigrant means that his birthplace is in the US while at least one of his parents is born in Germany. I study seven immigrant groups in this paper, and their source countries are Canada, Mexico, England, Ireland, Italy, Germany and Sweden. The reason I select these origin countries is that they were the main sources back then, more than 30 million Europeans to the US in the nineteenth century though the sources changed during different time period. The dominant outflow was in the British Isles, followed by Germany in the first half of 19th century, then the rising immigrants were from Scandinavian and other northwest European countries in the middle century. People from southern and eastern Europe accounted for the most of inflows in the late century (Hatton and Williamson, 1998). Overall, the sample of English, Irish, German, Swedish and Italian immigrants were typical and abundant in the dataset. For Canada and Mexico, they share borders with the US, having geographic location advantages compared to faraway European countries since transport cost was very high that time. It was an intracontinental migration compared to intercontinental migration for Europeans. The pattern of theirs might differ from European countries, in plus the immigrants from these two were quite a lot as well. I exclude the Chinese immigrants for policy hinder though a relatively large influx of them came to California for gold rush in 1849 and 1882. The 1882 Chinese Exclusion Act ended Chinese immigrants for nearly a century.

The data source of this paper is the Integrated Public Use Microdata Series (IPUMS, 2024) which provides integrated, high-precision samples of the American population from censuses. The study period is the Age of Mass Migration, so I choose the decennial census data of the United States from 1850 to 1920, and all years extract 1% random sample of the US population. There is no data of 1890 because the completed census forms were lost in a fire. Single cross-sectional data are used for analyzing since I don't exclude the return migration in this paper which could upward bias estimates and have no idea how to construct longitudinal data for immigrants now. As mentioned above, the immigrants were dominated by males, accounting for 64 percent between 1851 and 1910 (Hatton and Williamson, 1992). The labor market participation of the females was lower than the males, and they were more likely to bear discrimination. So, I restrict the study to the males. And I restrict the natives to only white.

The variables from IPUMS I discuss are occupational income score, age, labor force status, region, urban and marital status. Occupational income score is a constructed variable that assigns each occupation a value representing the median total income of all persons working at that specific occupation in 1950. It can provide a continuous measure of occupations generally, and the maximum value for census 1850 to 1920 is 80. It can be viewed as the proxy of labor market income in this paper and as one of the measurements of integration with natives. Age is a person's age in years as of the last birthday. I restrict the age between 18 and 59 when discussing performance in the labor market. Labor force status is a variable indicating if a person participates in the labor force, and participation means taking any gainful occupation in the research period. It is used to calculate participation rate in the latter section. Region identifies the region and division where the person resides. The preference of location can be examined from this variable, along with the variable urban, which denotes a person living in an urban area. Definitions of urban areas vary from year to year, but the term denotes all cities and incorporated places of more than 2500 inhabitants according to the dataset, otherwise it is classified as rural areas. The states are coded into nine divisions and a list of states comprising the various divisions is shown in Appendix A. The variable marital status shows each person's current marital status, and it is available from census 1880. There are five kinds of marital status of the sample in this paper, married with spouse present or absent, divorced, widowed and single status. I divide them into two to keep it simple, single and married status, which includes married, divorced and widowed. Summary of variables is in Table 1. From studies of migrant assimilation in the contemporary US, there are other critical variables related to immigrants. Variables, such as educational attainment, citizenship, years in the US for immigrants, years of work experience and English fluency, are not considered into the regression model since they are not available during the whole research period.

Table 1 Variable list

Variable	Denotation	Available Census Year
occupational income score	a proxy of income	1850-1920
age	age in years as of the last birthday	1850-1920
labor force	participation in the labor force	1850-1920
region	resident location	1850-1920
urban	resident in rural or urban area	1850-1920
marital status	single or married	1880-1920

Source: IPUMS USA data, 2024.

5.1 Descriptive Statistics

This section describes the basic trends of immigrants from Canada, Mexico, England, Ireland, Italy, Germany and Sweden to the US and their descendants in terms of numbers, residential distribution and labor market income over 1850 to 1920, giving the big picture of these immigrant groups first.

5.1.1 Immigrants Numbers and Shares of Labor Force

Table 2 presents the numbers of first and second generations of immigrants in the US from selected source countries. the stock "old immigrants" from England, Germany and Sweden kept increasing before 1900, and decreased in the three decades at the early of twentieth century. Among the "old" immigrant groups, the pattern of Irish immigrants seems unique, experiencing earlier "transition" than other groups, a decade earlier decline in stock number than English and German immigrants. It might be related to its declined emigration rates after the Great Famine (1845-1852). Irish Return migration from the US was relatively rare, about 6 percent of the outflow. Hatton and Williamson (1998) use the gross outflows data from the emigration reports of the Registrar General for Ireland, plotting Irish emigration rate from 1852 to 1913. A sharp fall in emigration rates happened immediately after the Great Famine, from 30 per thousand to 15 between 1852 and 1855. And the decline persisted, to around 8 per thousand per year before World War 1. Changing labor market conditions at home and abroad is an important explanation for the rate changes. They argue that the impressive rise in Irish wage rates and living standards accounting for the secular decline of emigration rates. The American and British wage ratios relative to Ireland fell over 1850 to 1913. It repeated in other destination countries, the wage ratio of the Australian to Irish declining as well. The mass migration, as a shifting of labor endowments, helped to ease global disequilibrium in the late nineteenth century and promote convergence (Taylor and Williamson, 1997). And the forces of convergence and real wage growth at home country encouraged a large share of people to stay at home.

In contrast, as "new immigrants", Italian immigrants didn't arrive in large numbers until the early 1900s, and the stock number exceeded previous dominant countries England, Ireland and Germany in 1920. Obviously, Mexico was not a main source country during the Age of Mass Migration, much fewer than other six groups in 1920. The relative number of Mexican immigrants in the US workforce was 0.6 percent in 1920, but their share declined steadily beginning in the 1920s, lasting for several decades. The reasons for the decline are not clear. They became historically unprecedented as immigrant group in the US, being numerically and proportionately, in the late twentieth century, making up around 25 percent of immigrant flow in the 1990s (Borjas and Katz, 2005).

The percentage aged between 18 and 59 was high among these immigrant groups, all more than 65 percent, providing the US with an abundant potential young labor force. The inflow patterns of these seven immigrant groups were different during the mass migration period, the main source countries shifted from time to time. But in general, young people accounted for the most inflow of immigrants in each group (Table 3).

Table 2 Numbers of first- and second-generation immigrants in the US (male, all ages), selected nationalities

	1850	1860	1870	1880	1900	1910	1920
CanFirst	708	1260	2631	3929	6318	6255	5997
CanSecond				3033	6867	8404	8992
MexFirst	104	181	223	402	572	1465	2786
MexSecond				214	569	801	1245
EngFirst	1608	2504	3141	3705	4762	4741	4322
EngSecond				4791	7665	8431	8270
IreFirst	4962	8049	8798	9082	7564	6099	4397

IreSecond				15263	18138	17570	15942
ItaFirst	21	92	126	297	3151	8465	9421
ItaSecond				129	1239	3960	8738
GerFirst	3331	7106	9226	10599	14268	13358	8575
GerSecond				15961	27282	31386	27032
SweFirst	24	126	578	1225	3284	3832	3315
SweSecond				623	3052	4177	4875

Note: CanFirst is short for "first-generation Canadian", MexFirst "first-generation Mexican", EngFirst "first-generation English", IreFirst "first-generation Irish", ItaFirst "first-generation Italian", GerFirst "first-generation German", SweFirst "first-generation Swedish".
CanSecond is short for "second-generation Canadian", and so on.
Source: IPUMS USA data, 2024.

Table 3 Shares of aged 18-59 in first-generation immigrants (male, percent), selected nationalities

	1850	1860	1870	1880	1900	1910	1920
Canada	65	70	69	75	80	78	70
Mexico	83	80	74	73	72	77	72
England	74	79	78	78	76	74	72
Ireland	78	84	85	83	74	70	73
Italy	67	84	91	87	83	85	87
Germany	76	81	84	81	76	73	65
Sweden	92	79	80	82	87	87	78

Source: Calculations based on IPUMS USA data, 2024.

5.1.2 Marital Status and Average Age

The shares and average age of married persons among US-born whites and immigrants are illustrated in Table 4. It helps to get an idea of immigrants' portrait or living situation. The variable marital status shows each person's current marital status, and it is available from census 1880 onwards. I simply divide five kinds of marital status of the sample into two, being single and married, which includes married, divorced and widowed. In the first generation, shares of married immigrants from England, Ireland and Germany in the labor force were relatively a bit high to other groups in each census, and the average ages of these three groups were over 40, a bit older as well in each census. The average ages of Mexican and Italian immigrants were younger than other groups generally, from 36 to 38 years old, under 40. Corresponding to younger age, the married shares of them were a bit lower in generally compared to English, Irish and Germans. It is might related to time of different migration waves. As mentioned above, the immigrants from England, Ireland and Germany composed the first migration wave to the US. Their years in the US were relatively longer. Mexicans and Italian, as "new immigrants", moved to the US at young age, as well as fewer years in the US.

The married second generation was younger than the first in each nationality immigrant group and each census. The shares were lower than the first as well except second-generation Mexicans in 1910.

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Table 4 Shares and average age of married persons (male, aged 18-59 in the labor force, percent for share)

	1880	1900	1910	1920	1880	1900	1910	1920
	share				average age			
US whites	66.92	65.52	66.4	70.46	38.2	39.03	38.61	38.49
First Generation								
Canada	59.96	66.23	72.8	76.53	38.22	40.48	41.72	43.16
Mexico	57.14	63.3	53.85	61.51	36.16	38.45	37.25	36.66
England	73.39	71.94	73.57	79.7	41.29	41.95	42.22	43.87
Ireland	71.57	68	66.83	71.73	42.21	43.41	42.87	45
Italy	55.1	62.59	60.1	70.92	37.34	37.15	36.47	38.45
Germany	78.9	75.82	77.4	82.68	41.94	42.62	43.51	45.81
Sweden	57.84	61.5	60.94	70.31	39.69	40.47	42.15	44.51
Second Generation								
Canada	48.69	50.86	53.94	61.04	35.7	36.71	37.12	37.64
Mexico	50.98	49.25	59.09	56.55	31.73	36.49	34.63	35.31
England	53.81	62.52	66.02	69.37	35.66	38.21	40.07	40.17
Ireland	36.34	46.68	53.96	56.82	34.86	38.23	41	42.34
Italy	33.33	33.06	34.88	33.95	37.33	32.56	32.61	30.94
Germany	37.63	55.86	60.21	66.4	31.85	36.51	39	40.22
Sweden	27.54	27.01	32.48	45.45	31.47	31.74	32.72	34.47

Source: Calculations based on IPUMS USA data, 2024.

5.1.3 The Residential Distribution of Immigrants

Table 5 and 6 present the residential distribution of first- and second-generation immigrants from urban and regional aspects.

Definitions of urban areas vary from year to year, but the term denotes all cities and incorporated places of more than 2500 inhabitants according to the dataset, otherwise it is classified as rural areas. Table 4 reports the share of urban residence among the stock of natives and first- and second-generation immigrants at a particular point in time. Within US-born whites, the urbanization increased during this time period, along with the industrialization process, to 40.42 percent in 1920, which was also applied to the seven immigrant groups overall that share in urban areas grew from 1870. However, the extent of immigrants and their descendants except Mexicans was greater than native whites for the urban share of first- and second-generation immigrants both higher each year. Immigrants from Italy and Ireland were the most urban in the early twentieth century, as well as their second generations, about 80 percent in 1920. For Mexican immigrants, the growth rate was the fastest due to the low initial level, with an increase of over eight times in 1920 compared to 1850. This pattern of first generation except Mexicans is in line with results from Eriksson and Ward (2022). They analyze the full-count census data from 1850 to 1940, finding that immigrants were more likely to live in an urban area than US natives, around four times more in 1850. Though the gap narrowed down later, immigrants still favored urban places. This is kind of residence behavior could be explained by financial benefits. More job opportunities and high wages in the city kept drawing immigrants, and the urban premium was from 15 to 40 percent over the period 1850-1940 (Abramitzky et al., 2012; Boustan et al., 2018).

Within immigrant generations, the residence choice of second generations was a bit different from their parents. The share in urban areas of second generations was lower compared to first generations except Italians. There are surveys and studies about poor living conditions of immigrants in urban areas contributing to high infant mortality (US commission 1911; Eriksson et al., 2020). The overcrowding and poor conditions might be one of reasons for second generations to escape from urban areas.

Table 6 describes the share of the stock of immigrants who resided in regions at a particular point in time. Each immigrant group had their own preference in regions and had agglomeration effect in population level. Immigrants from Canada, England, Ireland, Italy, Germany and Sweden were mainly distributed in the east and north, New England, Middle Atlantic, East North Central and West North Central divisions. The share of each division varied from source countries but most of them resided in these four divisions. However, Italian immigrants showed a notable concentration, having a stronger preference to Middle Atlantic division than other European groups, around half of them living there. More specifically, New York attracted 32.42 percent of Italians between 1850 and 1920, Pennsylvania 15.2 and New Jersey 8.65 respectively. The similar pattern was applied to the second-generation Italians, New York 33.04, Pennsylvania 13.89 and New Jersey 10.96 respectively from 1880 to 1920. Mexican immigrants had an opposite location choice over European people, the west and south. Over half of them lived in the West South Central division (Texas, over 50 percent from 1850 to 1920), followed by Mountain division (Arizona and New Mexico). Pacific division especially California began to draw more immigrants again after California Gold Rush in nineteenth century for the residence share increasing in the early of twentieth century.

Comparing the two generations, the second-generation immigrants appear to have similar regional distribution with first generations in each immigrant group, following pace of their parents (Table 6).

Table 5 Residents in urban area (male, all ages, percent), selected nationalities

	1850	1860	1870	1880	1900	1910	1920
US whites	12.36	16.36	21.19	16.11	27.83	34.43	40.42
CanFirst	22.88	26.51	33.37	36.96	55.65	61.5	65.92
CanSecond				28.06	47.88	55.12	60.65
MexFirst	5.77	14.36	23.32	17.66	29.2	30.03	44.69
MexSecond				19.16	23.02	28.96	38.15
EngFirst	39.93	39.66	43.27	45.29	62.96	65.91	70.27
EngSecond				36.8	54.9	58.34	63.71
IreFirst	46.59	53.87	58.21	58.46	71.29	76.95	81.78
IreSecond				55.18	69.16	73.4	76.55
ItaFirst	76.19	57.61	69.05	69.36	71.12	71.45	81.48
ItaSecond				72.09	79.5	77.68	82.67
GerFirst	47.31	47.06	51.03	51.63	60.41	64.63	64.83
GerSecond				49.32	55.89	58.48	60.08
SweFirst	79.17	30.16	25.26	31.67	46.92	55.17	60.42
SweSecond				31.62	44.4	47.47	53.72

Source: IPUMS USA data, 2024.

Table 6 Regional distribution of residence for two generations of immigrants (male, all ages, percent), selected nationalities

		First generation			Second generation		
		1880	1900	1920	1880	1900	1920
Canada	New England	31.33	38.05	38.22	27.17	30.77	37.93
	Middle Atlantic	12.85	11.48	11.19	17.28	12.54	11.5
	East North Central	33.49	26.81	23.24	34.55	29.43	25.14
	West North Central	13.67	11.86	8.29	14.54	15.54	10.67
	South Atlantic	0.51	0.66	1.2	0.53	0.84	0.9
	East South Central	0.18	0.44	0.32	0.3	0.44	0.43
	West South Central	1.09	0.65	1.47	0.89	1.31	1.35
	Mountain	3.13	3.69	4.55	1.71	3.38	3.41
	Pacific	3.74	6.14	11.52	3.03	5.49	8.66
Mexico	New England	0.25	0.17	0.18	0	0.35	0.08
	Middle Atlantic	0.75	1.05	0.75	0	0.7	0.24
	East North Central	0.25	0.35	1.87	0	0.88	0.72
	West North Central	1	0	4.41	3.27	0.18	2.97
	South Atlantic	0.25	0	0.22	0	0.18	0.32
	East South Central	0.5	0	0.07	0.47	62.92	0.08
	West South Central	58.71	71.15	53.48	62.15	23.55	59.76
	Mountain	25.87	19.93	21.18	16.36	10.9	18.8
	Pacific	12.44	7.17	17.84	17.76	0.35	17.03
England	New England	10.96	16.19	16.15	7.83	10.45	11.48
	Middle Atlantic	31.85	34.59	32.81	27.68	29.38	29.47
	East North Central	27.21	21.63	20.62	31.98	25.86	23.3
	West North Central	12.15	9.28	6.69	15.53	13.96	11.21
	South Atlantic	2	2.56	3.03	2.98	2.67	2.78
	East South Central	1.38	0.86	0.9	2.05	1.51	1.17
	West South Central	1.57	1.74	1.83	2.4	2.47	2.89
	Mountain	6.32	5.82	6.32	5.7	7.49	8.46
	Pacific	6.59	7.14	11.66	3.86	5.94	9.24
Ireland	New England	18.12	22.13	23.83	15.15	19	20.04
	Middle Atlantic	41.26	41.87	43.05	41.18	38.71	39.81
	East North Central	17.76	16.41	14.37	20.79	18.32	17.29
	West North Central	10.31	8.33	5.64	10.63	11.24	8.63
	South Atlantic	3.15	2.01	1.82	3.77	2.62	2.77
	East South Central	1.61	1.22	0.75	2.1	1.68	1.21
	West South Central	1.6	0.98	1.11	1.53	1.68	1.87
	Mountain	1.76	2.04	2.12	1.54	2.15	2.33
	Pacific	4.44	4.51	7.3	3.3	4.1	6.05
Italy	New England	6.06	12.57	13.18	6.98	10.57	13.63
	Middle Atlantic	49.83	59.28	56.29	39.53	56.34	58.62
	East North Central	6.06	10.5	13.13	4.65	10.25	11.58
	West North Central	4.38	1.9	2.36	1.55	2.66	2.27
	South Atlantic	4.04	2	3.03	2.33	2.42	2.66
	East South Central	4.38	0.79	0.58	3.88	2.18	0.73
	West South Central	4.38	3.21	1.74	10.85	4.44	2.85
	Mountain	5.72	2.38	2.09	7.75	1.61	1.89

	Pacific	15.15	7.36	7.6	22.48	9.36	5.78
Germany	New England	2.21	2.62	2.94	1.54	1.87	2.04
	Middle Atlantic	28.61	29.92	29.45	28.17	25.93	25
	East North Central	39.02	35.84	34.22	41.39	37.86	36.7
	West North Central	17.18	19.01	17.92	16.69	20.79	20.5
	South Atlantic	3.92	2.51	2.48	4.12	3.02	3.14
	East South Central	2.14	1.36	1.04	2.58	1.84	1.58
	West South Central	2.92	2.85	2.94	2.91	3.7	3.84
	Mountain	1.01	1.48	2.29	0.72	1.44	2.14
	Pacific	2.98	4.05	6.73	1.88	3.28	5.06
Sweden	New England	3.67	9.53	9.8	4.17	5.7	8.39
	Middle Atlantic	11.84	11.02	11.89	9.63	10.52	10.83
	East North Central	31.76	27.92	24.8	36.28	29.95	25.93
	West North Central	45.55	37.52	31.64	39.49	40.47	35.75
	South Atlantic	0.41	0.27	0.63	0.96	0.16	0.66
	East South Central	0.73	0.33	0.51	1.12	0.33	0.43
	West South Central	0.98	1.31	1.33	1.61	2.2	1.74
	Mountain	2.69	4.75	5.19	2.89	5.54	5.78
	Pacific	2.37	6.82	14.21	3.85	4.85	10.48

Source: IPUMS USA data, 2024.

5.1.4 Labor Market Income

Table 7 presents the average occupational income score of US-born whites and first- and second-generation immigrant men at the age of 18 and 59, showing a general occupational attainment of each group. It would examine the integration extent with the US-born whites by regression models in the latter section.

The average occupational score of US-born whites and immigrants from Canada, England, Ireland, Germany and Sweden was increasing from census 1870 to 1920, while it varied in Mexican and Italian immigrants. The average occupational score of second-generation immigrants from Canada, Mexico, England and Sweden was less than their first generations from census 1900 to 1920, while second-generation Irish did better than their parents generally. The average occupational score of first- and second-generation Mexicans was the worst from 1880 to 1920.

Table 7 Average occupational income score of immigrants and US whites (male, aged 18-59), selected nationalities

	1850	1860	1870	1880	1900	1910	1920
US Whites	18.43	18.1	18.32	18.57	19.93	21.18	22.01
CanFirst	18.3	18.79	20.03	21.1	23.01	24.62	25.3
CanSecond				18.83	21	22.18	23.93
MexFirst	21.63	17.53	17.8	17.23	16.99	18.02	17.69
MexSecond				16.19	15.48	16.5	15.85
EngFirst	22.36	21.21	22.19	22.48	24.39	25.26	26.38
EngSecond				20.53	22.9	24.5	25.6
IreFirst	19.46	20.01	20.95	22.01	22.78	24.22	24.77
IreSecond				21.44	23.81	25.27	25.92
ItaFirst	24.86	23.78	21.47	23.03	21.59	22.32	23.14
ItaSecond				23.27	21.09	23.78	23.51
GerFirst	20.87	20.91	21.77	22.16	22.5	23.35	23.51
GerSecond				19.93	22.23	22.93	23.65
SweFirst	22.41	19.13	17.24	18.26	20.58	22.28	22.97
SweSecond				19.63	18.24	19.99	22.07

Source: Calculations based on IPUMS USA data, 2024.

5.2 Method

This part discusses the method to measure the integration between immigrants and natives in terms of occupational score. A regression model is used to examine the integration extent.

There is a connection between labor market outcomes and educational attainment on the base of human capital theory but the key variable "educational attainment" is unavailable until 1940. So, education is not discussed in the model. As mentioned above, labor market outcomes were influenced by urban areas, around 15 to 40 percent in urban premium over 1850 to 1940. From Eriksson and Ward (2022), geographic location is an important factor into economic integration. It is of interest to determine whether these observed measures explain occupational score differential between natives and immigrants. Therefore, a generic regression model is estimated separately by different nationality immigrant groups of first and second generations in age (linear and squared), urban and region in each census. I restrict to males aged 18-59 who were active in the labor market. I make a comparison of first- and second-generation immigrant groups with US-born whites whose parents were US-born.

The regression model is as follows: $s = a + b*Group + c*X + d$

where s gives occupational score, Group contains each nationality immigrants in first and second generations separately, X contains the variables, age (linear and squared), urban and region, and d is the error. These variables are available from 1850 to 1920 (second generation is from 1880 to 1920).

Normally, the marital status affects labor market outcomes as well according to empirical evidence. Married men benefit from marriage spillovers, earning more or being more likely to get promoted compared to single men. An extra regression test which includes the variable marital status in X and interaction variables between marital status and immigrant groups for two generations from 1880 to 1920 is performed to see how marriage works on results.

Moreover, in order to study possible relationships between labor market income and regions, another regression test is also performed for census 1920, with interaction variables between regions and immigrant groups.

6. Results and Discussion

This section discusses the integration extent of selected nationality immigrants from the labor market performance during the age of mass migration. The discussion of performance includes labor force participation rate and occupational score.

6.1 Labor Force Participation

Table 8 presents the labor force participation of different groups. The numerator is the number of people aged 18 to 59 who got any gainful occupations while the denominator is the total number of each group aged 18 to 59. Immigrants exhibited higher or same participation rates from 1880 to 1920 than native whites except Mexican in 1900 (one percent lower). However, the participation rates of second generation were all almost lower than first generation, not as well as native whites sometimes. The rates of second-generation immigrants from Mexico and Italy were worse in 1880 and 1900. A further analysis can be done to estimate the probability of being in the labor force, while controlling for differences in individual characteristics across groups using a probit regression. But I don't know how to process it.

Table 8 Labor force participation (male, aged 18-59, percent)

	1850	1860	1870	1880	1900	1910	1920
US whites	91	89	92	93	93	94	93
CanFirst	90	91	96	96	95	96	95
CanSecond				93	93	93	94
MexFirst	93	90	96	96	92	96	95
MexSecond				88	92	92	90
EngFirst	93	94	96	96	95	97	96
EngSecond				91	93	94	95
IreFirst	91	93	96	96	94	95	95
IreSecond				92	94	94	94
ItaFirst	100	87	91	95	95	97	96
ItaSecond				82	87	93	91
GerFirst	92	93	96	97	95	96	94
GerSecond				91	94	95	95
SweFirst	82	94	93	94	96	97	96
SweSecond				92	92	92	93

Source: Calculations based on IPUMS USA data, 2024.

6.2 Occupational Performance

Each column of Table 9 reports estimates of b from the regression model above. Full results are shown in Appendix B. For the first-generation groups, the coefficients are mostly negative, especially significantly negative in the first three decades of the early twentieth century, indicating the income of immigrants was worse compared to US-born whites. Canadian and English immigrants achieved better outcomes than other immigrant groups, earning about 0.4-0.8 significantly less between 1880 and 1920, while other nationality immigrants earned 1.4-4.5 less. The results support Hypothesis One that immigrants did have less earnings than native whites.

Though immigrants were all in an inferior place, the extent of the gap was different. The least disadvantaged were the English and Canadian which were in line with previous studies (for English), while the worst outcomes were from Italian and Mexican, 4 less than the US-born whites in occupational score in 1920. Similar results could be found from Hatton and Williamson (1998), that Southern Italian was one of the most disadvantaged groups based on Immigration Commission Data (1911). There are some possible factors contributing to the most income penalty for Italians and Mexicans. They were relatively new, the years in the US fewer than other "old" groups, a factor to economic outcomes in receiving countries. Also, they had greater cultural distance from the US. The example of Italian and Mexican seems not solid. Taking Irish and German immigrants as examples, they were all "old" and dominated immigrants in the US, whereas the Irish had been in the US somewhat longer than average. The income of Germans was significantly better than the Irish during the whole mass migration period. Compared to Germany, Ireland was more different from the US, and it might be one of reasons bearing more income penalty than Germans. For English and Canadian immigrants, they shared the similar culture with Americans, getting more recognition from the US labor market and enjoying more outcomes than Germans. Hypothesis Two seems make sense.

The performance of second generation varies in origin countries. The second generation from England did greater from 1880 to 1920, even exceeding the US-born whites. Second generation from Ireland (from 1900 to 1920), Germany (from 1900 to 1920), Italy (1920) and Sweden (1900) achieved significantly better than their parents, narrowing down the gap between native whites. However, the second generation from Mexico did even worse, indicating a larger disparity with US-born whites. And the result of Mexican immigrants in first generation and second generation was nearly the worst in 1920. It takes more for Mexican immigrants to integrate into the US labor market. Apart from the greater cultural distance, the reason Mexicans lagged behind other immigrant groups can be explained from the research of Borjas and Katz (2005). They study the evolution of Mexican workers and their descendants in the US during the twentieth century, finding that much less educational attainment of Mexican immigrants accounted for their large wage disadvantage compared to natives or non-Mexican immigrants. The kind of lag happened to second or more generations of Mexicans as well. They suffered the wage gap to other non-Mexican ancestry native workers because of poor educational attainment. Borjas and Katz (2005) get the conclusion by investigating their economic performance after 1940, for the variable educational attainment only available 1940 onwards. From this research, it can be inferred that the educational attainment of Mexicans from 1850 to

1920 was also worse than other immigrant groups, aggravating the income gap based on human capital theory. Therefore, among the selected nationality immigrant groups, second-generation immigrants except Mexicans were more integrated in occupational score with the US-born whites.

Table 9 Regression results for occupational score (male, aged 18-59 in the labor force)

	1850	1860	1870	1880	1900	1910	1920
CanFirst	-0.957*	-0.463	-0.351	-0.399*	-0.622***	-0.583***	-0.786***
CanSecond				-0.469	-0.399	-0.575**	-0.078
MexFirst	-0.97	-2.166*	-2.310**	-1.941**	-2.692***	-2.566***	-4.207***
MexSecond				-1.891	-3.114***	-3.695***	-4.130***
EngFirst	0.962**	-0.179	0.134	-0.410*	-0.488**	-0.654***	-0.118
EngSecond				0.575*	0.428**	1.060***	0.970***
IreFirst	-2.187***	-2.732***	-2.670***	-2.747***	-3.352***	-3.153***	-3.281***
IreSecond				-0.0417	-0.542***	-0.232*	-0.281**
ItaFirst	-2.049	2.146	-2.224*	-1.790**	-3.761***	-3.419***	-4.393***
ItaSecond				3.663	-1.254	-0.115	-0.727**
GerFirst	-0.697**	-0.978***	-0.890***	-1.409***	-1.978***	-2.119***	-1.907***
GerSecond				-0.143	-0.556***	-0.707***	-0.627***
SweFirst	-0.437	-1.933	-2.037***	-2.418***	-2.486***	-2.453***	-2.298***
SweSecond				0.34	-1.133**	-0.505	-0.174

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Source: Calculations based on IPUMS USA data, 2024.

6.3 Marriage Premium

In the labor market, employers favor married men generally. It is estimated that married men earn around 10 percent more than unmarried ones in contemporary times. This part discusses how the marriage affected occupational income of natives and immigrant groups during the Age of Mass Migration. Table 10 illustrates the results with one more variable marital status in X and interaction variables between marital status and immigrant groups for two generations from 1880 to 1920. The coefficients of married US whites are all significantly positive compared to their single counterparts, indicating married men received more occupational income. It is also applied to the immigrant groups. Married immigrants of two generations achieved better scores than the single ones from 1900 onwards by controlling other variables except the first-generation immigrants from Mexico and Italy.

By observing the results of first-generation immigrants, being married seemed to make up the income gap of being immigrant compared to single US-born whites, and it was more applied and obvious to the immigrants having very similar culture with the US, such as Canada and England. From 1900 to 1920, single Canadian and English immigrants got bits of income penalty compared to single US whites while married ones could achieve more income than single US whites though not as well as married US whites. Married German and Swedish immigrants caught up single US-born whites in 1920. For Irish immigrants, marriage could narrow down the gap with single US whites clearly but not overtake it. The marriage benefit to

Italian immigrants was not as much as Irish, sometimes worse. However, for Mexican immigrants with greater cultural distance, being married made income worse from the results of 1900 and 1920.

The effects of being married were more positive to second generations. First, the penalty of income disappeared for second-generation English, no matter what the marital status was. The coefficients of married second-generation English were bigger than married native Whites. The coefficients of single English were all positive, those of 1910 and 1920 significantly positive. Except second-generation Mexicans, the other married second-generation groups overtook the single native whites while most of them were not as much as the married native whites, meaning they were still at disadvantage in the labor market. Married Irish and Swedish exceeded their US counterparts in 1910 and 1920, doing better than single ones. Being married was not another penalty to second-generation Mexicans compared to their first generation because the coefficients of the married were less negative than the singles from 1900 to 1920. The coefficient of married Italian in 1880 is weird. The second generations seemed to make up the gap easily than the first.

Overall, being married can benefit males in the labor market compared to their single counterparts.

Table 10 Regression results for different groups with marriage status (male, aged 18-59 in the labor force)

	1880		1900		1910		1920	
	Single	Married	Single	Married	Single	Married	Single	Married
First Generation								
US whites	(ref)	1.046***	(ref)	1.396***	(ref)	1.936***	(ref)	2.147***
Canada	0.204	0.331	-0.801**	0.911	-0.682*	1.403	-1.278***	1.555
Mexico	-1.717	-0.974	-1.432	-1.948	-0.421	-2.219	-2.201***	-3.178
England	0.114	0.443	-0.826*	1.069	-0.354	1.206	-0.127	2.0349
Ireland	-1.699***	-2.032	-3.239***	-1.84022	-2.848***	-1.081	-2.906***	-0.956
Italy	-1.847*	-0.447	-2.914***	-2.822	-1.748***	-2.549	-3.076***	-2.73
Germany	-1.215***	-0.437	-1.957***	-0.5806	-1.929***	-0.224	-2.083***	0.32
Sweden	-1.624**	-1.757	-2.046***	-1.15	-2.240***	-0.2837	-2.613***	0.307
Second Generation								
US whites	(ref)	0.925***	(ref)	1.308***	(ref)	1.873***	(ref)	2.121***
Canada	-0.675	0.707	-0.602*	1.161	-0.324	1.184	-0.244	2.278
Mexico	-0.497	-2.393	-2.516*	-2.262	-3.201***	-2.166	-2.980***	-2.649
England	0.824*	1.309	0.165	1.889	1.592***	2.679	1.055***	3.109
Ireland	-0.0193	1.0927	-0.559***	1.198	-0.0903	2.0607	-0.361*	2.522
Italy	1.265	9.813	-1.527	0.76	0.258	1.25	-0.238	1.001
Germany	-0.00871	0.66329	-0.549***	0.839	-0.774***	1.371	-0.677***	1.705
Sweden	0.877	0.138	-1.012*	0.456	-0.711*	2.546	-0.421	2.854

* p<0.05   ** p<0.01   *** p<0.001

Source: Calculations based on IPUMS USA data, 2024.

6.4 Region Effect

The residential distribution of immigrants is described above, and different immigrant groups have their own preference. This section discusses how the regions affect occupational income of immigrants. Table 11 presents the coefficients of the groups of interest in the US divisions in 1920. The workers in New England division earned more money than other divisions. Among US-born whites, workers from southern region didn't receive good income as well as those in the northern region which was related to the fact of unbalanced economic development in the south and north.

There is an outlier in second-generation Mexican group. The coefficient of second generation in Middle Atlantic division is 17.95 which is odd and doesn't make sense since others are all negative. The most share of whole Canadian immigrants (38.22 percent) lived in the New England division in 1920, but the income was lowest compared to their counterparts in other divisions. In contrast, only 0.32 percent of them resided in the East South Central division while occupational income was quite good, exceeding the US-born whites in the New England division much more to 4.326. The shares of English immigrants in South Atlantic, East South Central and West South Central were small, 3.03, 0.9, 1.83 percent respectively, but they all received good returns from the labor market though not significantly. Did immigrants make more money if they decided to reside in the division where fewer counterparts lived? It needs to examine other factors to see the reasons behind, and to narrow down the locations. It may be related to supply and demand of a division's labor market or the neighborhoods. Many studies show that the neighborhood surrounding could affect economic performance. For example, Abramitzky et al. (2024) find that relocating outside of an enclave could benefit ethnic immigrants. More specific location information should be researched if a proper database is available. Did they live in an ethnic enclave or a more native neighborhood? What were their neighbors' demographic characteristics?

Table 11 Regression results for different groups with region (male, aged 18-59 in the labor force, 1920)

	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
First Generation									
US whites	(ref)	-0.901***	-2.500***	-3.148***	-2.320***	-3.723***	-3.532***	-2.806***	-2.151***
Canada	-3.171***	-1.112	-2.232	-0.933	-2.332	4.326	-0.67	-0.648	-2.103
Mexico	-3.838	-0.379	-3.11	-7.181	-8.494	0.386	-7.934	-4.597	-8.381
England	-0.927*	-2.269	-1.845	-3.234	1.622	1.153	0.606	-2.055	-2.345
Ireland	-4.644***	-4.876	-4.398	-2.699	-2.934	-3.672	-2.843	-0.646	-3.703
Italy	-5.521***	-6.12	-5.981	-4.99	-2.653	-2.076	-3.187	-3.576	-6.922
Germany	-2.462**	-3.3038	-4.145	-4.889	-3.168	-4.117	-4.814	-4.639	-3.645
Sweden	-2.488***	-3.3048	-4.048	-5.256	-1.039	-3.12	-6.783	-5.2736	-4.5452
Second Generation									
US whites	(ref)	-0.931***	-2.504***	-3.100***	-2.255***	-3.634***	-3.462***	-2.747***	-2.168***
Canada	-1.592***	-1.351	-1.841	-2.426	-2.087	-3.07	0.319	-1.479	-1.563
Mexico	-4.269**	17.95	-3.279	-5.32	-6.524	-7.903	-7.8128	-5.652	-6.437
England	0.229	-0.103	-1.509	-2.076	-0.06	1.739	-0.092	-2.306	-1.503
Ireland	-1.331***	-1.588	-1.448	-2.642	-0.773	-2.363	-0.682	1.135	-1.693
Italy	-2.079*	-2.447	-1.684	0.04	-1.543	-1.679	-1.937	2.961	-3.483
Germany	-0.368	-1.712	-2.955	-4.252	-1.357	-1.222	-3.536	-1.699	-2.203
Sweden	0.53	0.087	-2.245	-3.706	5.773	-2.34	-3.847	-2.61	-1.6787

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Source: Calculations based on IPUMS USA data, 2024.

In this section, I discuss the integration extent of selected nationality immigrants from the labor market participation rate and occupational performance during the Age of Mass Migration. By answering the three hypotheses from section 4, I conclude that immigrants suffered income penalty in the labor market, and second generation were more integrated into the US labor market. Immigrants with greater cultural distance suffered more penalty.

In addition, impacts of marital status and residing region are discussed. Married men were benefited from marriage compare to the single, examining the marriage premium from the Age of Mass Migration. Restricted to my knowledge and available data, more variables or factors should be considered for region effect, and further study can be done.

7. Conclusion

This paper focuses on particular immigrant groups, exploring the difference in immigration behaviors and their outcomes in the US. It examines the integration extent between the US-born whites and first- and second-generation immigrants from selected source countries during the Age of Mass Migration. It presents the descriptive statistics of the sample, the figures, distribution of married men, working age share, residential distribution and the mean occupational score, to show the whole picture of immigrants first. It investigates the integration extent by immigrants' labor market performance with US-born whites. Guided by the three hypotheses, I conclude that immigrants suffered an income penalty in the labor market, and second generation were more integrated into the US labor market. Immigrants with greater cultural distance suffered more penalties. More specifically, from the empirical data of this paper, all immigrant groups had an initial earning penalty compared to the native whites, while the English immigrant group was the least disadvantaged one, who shared a very similar culture with the US. And the second generation from England exceeded the occupation score of US-born whites. In contrast, Italian and Mexican immigrant groups got more income penalty, with greater cultural distance from the US. In general, the second generation of immigrants achieved better scores than their parents, indicating deeper integration into the American society. In addition, it is statistically significant that single men suffered more penalty than the married both in natives and immigrants. The impact of residing region is not clear. More variables or factors should be considered in my view.

The limitation of this paper is obvious. My findings are contradictory with results from Abramitzky et al. (2014). I don't consider the decline quality of immigrant arrival cohorts and the leaving of negatively selected return migrants. The return migration is not discussed and critical variables, such as educational attainment, citizenship, years in the US for immigrants, years of work experience and English fluency, are not considered into the regression model since they are not available during the whole research period. All of these can bias the results somehow. Moreover, I did not discuss the relative earnings growth rate for immigrants compared to the natives when analyzing the labor market outcomes. The return migration flow became distinct in the late of the century. The figures in this paper are gross numbers of immigrants rather than net. Because the cost of transportation was so high, the return migration was rare in most of the nineteenth century, making tiny impact to the results before 1890. Condition changed in the late of the century. There was a steeper rise in return migration for the cheaper and convenient transportation. Return migration was 30 percent of the gross inflow between 1890 and 1914 based on the statistics from US authorities. Immigrants with poor economic outcomes were more likely to return to homeland, so it would bias results if the return rates were high. Moreover, it varied among different nationalities. Nearly half of Italian and Spanish immigrants chose to return to their home countries, while the return percent was only around 5 for Irish or Scandinavian immigrants. It would bias the differential between nationality groups too. Impacts from other variables could be found from associated research. For example, Ward (2016) finds that there was a small upgrade in earnings (2 to 6 percent) for immigrants

linked to learning English in the early 20th century. From work of Catron (2019), citizenship raised occupational attainment of the first generation, which benefited their children with greater educational attainment and labor market success in the first half of the 20th century. The earning of immigrants converged to those of natives as the immigrants gained work experience in the US labor market, though the convergence was varied among nationality immigrant groups (Borjas and Katz, 2005).

Rooted in the migration culture in the US back to the Age of Mass Migration, the expectation of getting considerable returns within one generation or several and more flexibilities to ladder upwards may encourage more immigrants to the US even if by the illegal and irregular means. It's also important to look backwards and learn from the past experience with immigration when moving forward and thinking about immigration trends today.

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Appendix A

Table A1 Sates included in divisions

Division	States
New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Middle Atlantic	New Jersey, New York, Pennsylvania
East North Central	Illinois, Indiana, Michigan, Ohio, Wisconsin
West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
South Atlantic	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
East South Central	Alabama, Kentucky, Mississippi, Tennessee
West South Central	Arkansas, Louisiana, Oklahoma/Indian Territory, Texas
Mountain	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming
Pacific	Alaska, California, Hawaii, Oregon, Washington

Source: IPUMS USA data, 2024.

Appendix B

Table B1 Regression results of occupational score (male, aged 18-59 in the labor force)

Year	1850	1860	1870	1880	1900	1910	1920
First Generation							
Age	0.614***	0.671***	0.751***	0.818***	0.762***	0.868***	0.769***
	(21.04)	(25.99)	(34.13)	(40.01)	(45.15)	(55.23)	(51.89)
Age squared	-0.00804***	-0.00860***	-0.00900***	-0.00944***	-0.00890***	-0.0102***	-0.00894***
	(-20.02)	(-24.48)	(-30.31)	(-34.55)	(-39.60)	(-48.70)	(-45.54)
Urban	7.987***	8.451***	9.196***	9.310***	9.660***	9.370***	9.652***
	(61.24)	(80.11)	(106.93)	(113.51)	(154.86)	(167.78)	(188.02)
Middle Atlantic	0.423**	0.562***	0.573***	-0.354**	-0.174	-0.0505	-0.472***
	(2.85)	(3.98)	(4.45)	(-2.77)	(-1.53)	(-0.45)	(-4.25)
East North Central	-0.821***	-0.969***	-1.037***	-1.674***	-1.259***	-1.219***	-1.716***
	(-5.14)	(-6.60)	(-7.96)	(-13.18)	(-11.09)	(-10.74)	(-15.52)
West North Central	-1.102***	-0.978***	-0.879***	-2.098***	-1.740***	-1.673***	-2.388***
	(-4.25)	(-5.12)	(-5.74)	(-14.97)	(-14.13)	(-13.60)	(-19.74)
South Atlantic	-0.412*	0.568***	-1.209***	-2.212***	-1.511***	-1.252***	-1.518***
	(-2.33)	(3.32)	(-7.72)	(-15.05)	(-11.66)	(-9.95)	(-12.60)
East South Central	-1.062***	-0.186	-1.659***	-2.805***	-2.440***	-2.521***	-2.883***
	(-5.60)	(-1.03)	(-9.82)	(-17.82)	(-17.66)	(-18.71)	(-22.17)
West South Central	0.172	0.594*	-0.379	-2.826***	-2.276***	-2.308***	-2.726***
	(0.58)	(2.53)	(-1.76)	(-15.82)	(-16.19)	(-17.65)	(-21.89)
Mountain	-3.485***	0.341	1.125***	1.803***	0.342	-0.409*	-1.837***
	(-4.62)	(0.78)	(3.42)	(7.09)	(1.75)	(-2.42)	(-11.58)
Pacific	5.707***	2.760***	0.774**	-1.071***	-0.455**	-0.765***	-1.658***
	(14.88)	(10.00)	(3.12)	(-4.81)	(-2.66)	(-5.42)	(-12.18)
Canadian immigrant	-0.957*	-0.463	-0.351	-0.399*	-0.622***	-0.583***	-0.786***
	(-2.00)	(-1.30)	(-1.48)	(-2.09)	(-4.16)	(-3.75)	(-4.83)
Mexican immigrant	-0.970	-2.166*	-2.310**	-1.941**	-2.692***	-2.566***	-4.207***
	(-0.87)	(-2.44)	(-2.97)	(-3.27)	(-5.27)	(-8.23)	(-18.10)
English immigrant	0.962**	-0.179	0.134	-0.410*	-0.488**	-0.654***	-0.118
	(3.24)	(-0.75)	(0.65)	(-2.13)	(-2.83)	(-3.69)	(-0.64)
Irish immigrant	-2.187***	-2.732***	-2.670***	-2.747***	-3.352***	-3.153***	-3.281***
	(-12.37)	(-19.42)	(-20.91)	(-21.42)	(-23.26)	(-19.16)	(-17.86)
Italian immigrant	-2.049	2.146	-2.224*	-1.790**	-3.761***	-3.419***	-4.393***
	(-0.79)	(1.76)	(-2.33)	(-2.85)	(-18.60)	(-26.78)	(-37.11)
German immigrant	-0.697**	-0.978***	-0.890***	-1.409***	-1.978***	-2.119***	-1.907***
	(-3.23)	(-6.51)	(-7.09)	(-11.74)	(-18.78)	(-19.02)	(-13.48)
Swedish immigrant	-0.437	-1.933	-2.037***	-2.418***	-2.486***	-2.453***	-2.298***
	(-0.19)	(-1.88)	(-4.34)	(-7.50)	(-12.95)	(-13.50)	(-11.42)
constant	8.788***	7.234***	4.545***	3.955***	5.049***	3.576***	6.013***
	(17.50)	(15.97)	(11.64)	(10.70)	(16.30)	(12.27)	(21.57)
N	43304	59779	74995	87974	125927	153437	167061

Second Generation

Age	0.865***	0.827***	0.925***	0.793***
	(39.36)	(48.29)	(59.62)	(55.50)
Age squared	-0.00995***	-0.00974***	-0.0109***	-0.00919***
	(-33.24)	(-41.86)	(-52.05)	(-48.18)
Urban	10.19***	10.10***	9.979***	9.997***
	(111.96)	(162.70)	(181.28)	(202.38)
Middle Atlantic	-0.389**	-0.631***	-0.360**	-0.542***
	(-2.73)	(-5.26)	(-3.07)	(-4.96)
East North Central	-1.700***	-1.731***	-1.588***	-1.842***
	(-12.05)	(-14.51)	(-13.61)	(-17.07)
West North Central	-2.092***	-2.127***	-2.028***	-2.608***
	(-13.49)	(-16.63)	(-16.34)	(-22.42)
South Atlantic	-2.274***	-1.829***	-1.368***	-1.548***
	(-14.43)	(-13.67)	(-10.58)	(-12.98)
East South Central	-2.789***	-2.714***	-2.565***	-2.832***
	(-16.60)	(-19.09)	(-18.62)	(-22.01)
West South Central	-2.894***	-2.534***	-2.422***	-2.699***
	(-15.07)	(-17.50)	(-18.09)	(-21.89)
Mountain	1.558***	-0.271	-1.106***	-1.964***
	(5.38)	(-1.35)	(-6.36)	(-12.56)
Pacific	-1.174***	-0.864***	-0.880***	-1.628***
	(-4.46)	(-4.82)	(-5.94)	(-12.03)
Canadian immigrant	-0.469	-0.399	-0.575**	-0.0780
	(-1.31)	(-1.93)	(-3.26)	(-0.51)
Mexican immigrant	-1.891	-3.114***	-3.695***	-4.130***
	(-1.35)	(-4.39)	(-6.07)	(-7.32)
English immigrant	0.575*	0.428**	1.060***	0.970***
	(2.39)	(2.61)	(6.91)	(6.72)
Irish immigrant	-0.0417	-0.542***	-0.232*	-0.281**
	(-0.28)	(-5.19)	(-2.22)	(-2.70)
Italian immigrant	3.663	-1.254	-0.115	-0.727**
	(1.55)	(-1.40)	(-0.25)	(-2.59)
German immigrant	-0.143	-0.556***	-0.707***	-0.627***
	(-0.90)	(-5.92)	(-8.47)	(-7.78)
Swedish immigrant	0.340	-1.133**	-0.505	-0.174
	(0.28)	(-2.88)	(-1.85)	(-0.85)
constant	2.907***	4.155***	2.515***	5.420***
	(7.43)	(13.40)	(8.79)	(20.34)
N	78213	128591	160863	181673

t statistics in parentheses
* p<0.05   ** p<0.01   *** p<0.001
Source: Calculations based on IPUMS USA data, 2024.