ABSTRACT

WEALTH ACCUMULATION AND RESIDENTIAL SEGREGATION: SECOND-GENERATION IMMIGRANTS DURING THE FIRST MASS MIGRATION

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What is the long-run impact of growing up in a segregated enclave? This paper examines the relationship between residential segregation in childhood and wealth outcomes later in life. I use a new sample of Irish, German, and English children linked from their childhood in 1850 to their adult outcomes in 1870. Conditional on childhood characteristics, such as the wealth of the father, I find a small negative association between childhood residential segregation from the US-born in 1850 and an individual's percentile rank of wealth in 1870, suggesting there is little detriment to growing up in an enclave. This association is also weak by sending country and urban status. These results are robust to measuring wealth outcomes as the change in wealth relative to an individual's father in 1850. Overall, the results suggest that fears of nativists during the mid-19th century about immigrant enclaves were unfounded.

APPROVED BY DIRECTOR OF HONORS THESIS

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WEALTH ACCUMULATION AND RESIDENTIAL SEGREGATION: SECOND-GENERATION IMMIGRANTS DURING THE FIRST MASS MIGRATION

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By

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CHAPTER ONE

Introduction

Upon arrival to the United States, immigrants often cluster together into enclaves. Critics argue that segregating from the US-born leads to slower economic assimilation and human capital investment for immigrants and their children, causing lower economic mobility relative to the native-born population (Abramitzky et al. 2020, Eriksson 2020). However, it is possible that settling in enclaves improves the outcomes of immigrants and their children by easing the transition into the United States or allowing for network effects between immigrants, helping them to economically assimilate with the native-born more quickly over time (Wegge et al. 2017).

In this paper, I estimate the relationship between growing up in a segregated enclave and economic mobility of the children of immigrants in the late 19th century. In this time period, there was a large influx of immigrants to the United States as refugees fled famine and political revolutions in Europe, creating the first wave of mass migration. During this wave, the migrant inflow as a percentage of the US population was at its highest point in recorded history (Abramitzky and Boustan 2017). The large percentage of immigrants in the United States at the time created fears among nativists that immigrants would fail to assimilate. However, it is commonly thought that these immigrants were able to achieve the "American Dream," bettering their circumstances and their children's circumstances after traveling to America. Studying this group of immigrants in detail can

provide a better picture as to what opportunities and barriers existed for immigrants and their children in this time.

Using a linked dataset that tracks tens of thousands of children between the 1850 and 1870 US Censuses, I estimate how adulthood wealth in 1870 differs for children who grew up in a highly or lowly segregated county in 1850. Besides being a unique time period that includes the first wave of mass migration, a key advantage of this period is that I can observe the real estate wealth of fathers in 1850 and the real estate and property wealth of sons in 1870.[1] Prior historical studies on segregation and economic outcomes often estimate economic mobility based on occupational income score (Collins and Zimran 2019; Abramitzky et al. 2021). Since occupational incomes do not capture within-occupation variation in income, they may not fully capture immigrant outcomes in 1850-1870, especially in a context where many were farmers (Inwood et al. 2019). I instead use real estate and personal property wealth to measure economic mobility.

Another advantage of historical data relative to modern-day data is that I can precisely determine the childhood location of individuals in 1850. Since historical censuses were recorded in a line, with next-door neighbors often being recorded next to each other on the census manuscript, I can use a more precise measure of childhood residential segregation than available in modern-day U.S. data based on the nativity of one's next-door neighbors. I use the measure of residential segregation developed by Eriksson and Ward (2019) and the wealth data available in the 1850 and 1870 full-count Census to examine the relationship between the level of segregation in an individual's childhood and their wealth outcomes in 1870.

[1] Females cannot be linked across censuses because of potential surname changes between childhood and adulthood.

It is difficult to establish a causal effect of childhood segregation on adulthood wealth as segregation may be associated with other unobservable characteristics that influence adulthood outcomes. In particular, selection into enclaves is not random. To account for selection into highly segregated areas, I control for parental characteristics such as the father's wealth, father's literacy, urban status, and the number of children in the household. I also control for county fixed effects and country of birth fixed effects. Therefore, I estimate the association between childhood segregation and adulthood wealth based on variation in segregation across different countries of birth within a county, and conditional on parental socioeconomic status and other locational factors.

I find that a one standard deviation increase in a child's segregation level in 1850 is associated with a decrease of 0.5 percentiles in the 1870 wealth distribution (out of 100). This is a weak association, suggesting that growing up in a segregated area does not have an outsized influence on adulthood wealth. The association is also estimated to weak by country, for Ireland, Germany and England, and when separating results for urban and rural areas. When instead measuring wealth accumulation by the change in wealth from the father in 1850 to the son in 1870, I find that a one standard deviation increase in residential segregation is associated with a decrease of 1,491 dollars (in 2020 dollars), though this result is noisy. These results are suggestive evidence that, while growing up in a segregated county may have had a detrimental relationship with an individual's wealth accumulation, the negative effects were not strong enough to move an individual far down in the wealth distribution. This modest association between economic outcomes and segregation is consistent with Collins and Zimran (2019), Eriksson (2018), and Abramitzky et al. (2020) who find similar results using occupational income scores.

CHAPTER TWO

Background

During the first wave of mass migration, immigrants traveled at increasing rates to the United States due to political turmoil, such as the revolutions of Europe in 1848. Others came out of economic hardship, such as the Irish Potato Famine. Though this fleeing of hardship may have caused less skilled people to migrate, it is often thought that these immigrants successfully accumulated wealth after arrival to the United States. Several studies have been conducted to track the outcomes of immigrants and their children. Ferrie (1994) documents the changes in wealth accumulation for immigrants to the United States using data linking ship passengers in 1840 to the 1850 and 1860 censuses. While immigrants started out poorer than native-born counterparts and had lower rates of literacy, Ferrie finds that migrants accumulated real property at relatively high rates. This return may have resulted from immigrants settling in places with greater economic opportunities. As immigrants' time in the United States increased, they were more able to find jobs and locations with greater economic opportunity, allowing them to accumulate more wealth (Ferrie 1994).

Likewise, when examining upward income mobility for the second-generation, Abramitzky et al. (2021) find that intergenerational mobility was higher for children of immigrants compared to children of US-born parents. Using linked data from the US Censuses in 1880 to 1910 and 1910 to 1940, the authors estimate the relationship between the occupational income score of children and that of their parents. Conditional on the rank

of the father's income, the authors find that children of immigrants from nearly all sending countries had higher ranks of income. They suggest that, since immigrants were more likely to settle in areas of high economic opportunity compared to US-born individuals, their children enjoyed greater upward mobility. However, the authors identify that highly segregated enclaves possibly reduced mobility for the children of immigrants. When comparing children of immigrants who grew up in enclaves—defined as a county where at least 10 percent of adult individuals immigrated from the same country of origin as the individual's father—they find that children of immigrants who settled in enclaves had lower upward mobility than those who did not. This finding suggests a possible negative effect of enclaves on mobility, though the relationship could also be driven by other factors correlated both with mobility and the decision to settle in an enclave.

Other evidence also suggests that the effect of enclaves may be detrimental or insignificant. Collins and Zimran (2019) use occupational wealth as a measure of mobility, but find no statistically significant relationship between settlement in enclaves and the mobility of children born to Irish immigrants from 1850-1880. Abramitzky et al. (2020) find that Jewish immigrants who moved out of enclaves through the Industrial Removal Office program earned more than those who remained in the enclaves, and that their children also earned 4 percent more after ten years of leaving the enclave than the children of those who remained in enclaves. They argue that this evidence suggests that the enclave held children back. To estimate the relationship between enclave size and income for Norwegian immigrants, Eriksson (2018) uses a linked sample of immigrants in 1920 and their children in 1940. Eriksson finds that a one-percentage point increase in the size of the enclave in which an individual grew up is associated with a 0.5 percent decrease in their

wages, most likely due to having poorer labor market opportunities. While enclaves might have provided some social support for Norwegian immigrants, the data suggest that the poor labor market opportunities in these rural communities limited mobility for the next generation. However, the estimate found here is modest. Additionally, wages are not reported for self-employed workers, including farmers. It is possible that these children were able to accumulate a greater amount of real estate compared to the relatively low occupational income score of laborers, and thus their mobility in terms of wealth is higher than what is estimated by Eriksson.

While this evidence suggests enclaves were detrimental, there is also evidence that enclaves enabled success of immigrants after their arrival to the United States. Wegge et al. (2017) use data from the Emigrant Industrial Savings Bank in New York City to document the personal wealth accumulation of pre-Famine and post-Famine migrants to New York City. Their results suggest that Irish immigrants, even those who were unskilled workers or women, were able to accumulate more wealth than what was expected in part due to institutions of close social networks of immigrants like the Savings Bank. These findings would suggest that, all else equal, enclaves were helpful for the assimilation of some Irish immigrants during this time period, and one would expect that these gains in wealth would be passed on in part to their children. Yet it is unclear whether these results from the New York Irish are generalizable to other areas and countries of birth.

The mixed results of the literature demonstrate that it is difficult to measure mobility due to the limits of historical data. Ideally, measuring actual income would allow for a more accurate measure of how much better off children were than their parents. As data of individual earnings are not available in US Censuses prior to 1940, occupational

income scores are frequently used as a measure of economic outcomes instead. By compressing within-occupation differences, occupational income scores may understate the gap between earnings of foreign-born and native-born individuals (Inwood et al. 2019). Further, as they are taken from the earnings of another year (for example, 1950), occupational income scores may result in inaccurate measurements if the earnings of occupations varied over time (Inwood et al. 2019). Inwood et al. (2019) use Canadian Census data to show that these scores may provide very different estimates of assimilation for immigrant populations than individual earnings provide, especially for young immigrants. In some cases, the authors show that these scores may move in the opposite direction of individual earnings, resulting in an over- or under-statement of immigrant assimilation with the native-born population. Another weakness the authors identify is that within-occupation differences in income might be driven by discrimination against immigrants, thus the occupational score overstates actual attainment. Since the study of immigrant assimilation is concerned both with changes over time and changes within an occupation, occupational income scores result in imprecise measurements of the degree to which the outcomes of immigrants or their children are converging with the native-born population.

Another challenge in measuring the relationship between segregation in enclaves and mobility is finding an appropriate measure for segregation. One possible measure is the fraction of foreign-born individuals present in the county, but this does not capture the dispersion of immigrants within the county. Other common measures for segregation rely on how immigrants are spread across various city wards within the city, but since city wards are uneven sizes across cities and years, it is unclear how segregation truly compares

across areas from this measure. Additionally, as these measures leave out rural areas, they result in a loss of meaningful information about a large proportion of immigrants in the mid-19th century who mainly settled in smaller towns or rural areas. In order to better measure segregation, Eriksson and Ward (2019) develop a measure based on whether or not an individual's next-door neighbors were native-born. Since the 1850-1940 censuses were enumerated in an order such that neighbors were often recorded next to each other on Census manuscripts, the authors use the household on the next census line as a proxy for the status of next-door neighbors. This measure captures the evenness of distributions of households, approximating the influence that a native-born or foreign-born individual would have had on the household, which may make it more suitable to studying the influence of segregation on factors such as wealth mobility.

Due to inconsistencies in measurements when examining segregation and mobility in terms of income or wealth accumulation, it is unclear whether the effect of living in an enclave increased or decreased mobility, and if this enclave effect differed for immigrants from different sending countries. Given that wealth may be better suited to measuring mobility within occupations, such as for farmers, and provides more information about differences within occupations, using wealth data may provide a better estimate of the relationship between settlement in enclaves and intergenerational mobility. In order to determine this relationship, this paper continues this literature by examining wealth accumulation for children of Irish, German, and English immigrants by level of residential segregation as a child.

CHAPTER THREE

Data and Empirical Framework

Data

The data sample originates from the Census Linking Project, which contains publicly available links of the full-count US Censuses from 1850-1870, provided by Abramitzky, Boustan, and Rashid (2020). The full-count microdata is available from IPUMS (Ruggles et al. 2020). To link individuals, Abramitzky, Boustan, and Rashid use the fully automated approach developed by Abramitzky et al. (2012). In the ABE method, individuals are linked by their first name and last name, their place of birth, and their year of birth. I restrict the sample to males with foreign-born fathers between the ages of 0 and 14 years old in 1850 and 20 and 34 years old in 1870. Foreign-born fathers are inferred using IPUMS data on relationship within the household. Only individuals with unique first and last names, birth dates, and birthplaces are linked; otherwise, it would not be possible to tell one "John Smith" apart from another. If an individual is matched to exactly one individual with identical name, place of birth, and the exact birth year, then these individuals are considered linked. If there are multiple possible exact links in the same birth year, the individual is discarded. This process is repeated within 1 year of reported birth year if there are no matches in the exact birth year. In the case that there is no match in the exact year, the algorithm repeats a search within 2 years of the exact birth year, again discarding the observation if there are multiple links within the 2-year band.

Linking algorithms introduce problems of false positives, in which an individual is falsely linked from one dataset to the next, and false negatives, in which an individual who should be linked is missed (Bailey et al. 2020). Part of this error might originate from poor data quality, either because census enumerators inconsistently write names from one census to the next, because individuals report different birthplaces, or because individuals round their age to the nearest 0 or 5 due to a lack of numeracy. Problems may also originate from data that are digitized from difficult-to-transcribe documents, as is the case with older Census data in the 19th century. False links may introduce systematic measurement error into the dataset because an adult is assigned to the wrong child (and thus the child is not assigned the appropriate segregation level in 1850). Missed links cause the sample to be unrepresentative of the population since being successfully linked is nonrandom. For example, a characteristic such as literacy might influence the degree of similarity with which one reports their name across datasets, implying that individuals with higher literacy are more likely to be linked. The resulting linked dataset could then be unrepresentative with regard to literacy. This poses problems in measuring mobility given that literacy is also correlated with an individual's wealth accumulation.

Due to the selection bias introduced by the matching algorithm, the matched sample is not representative of the entire population. The matched data is reweighted using the inverse propensity-score method described in Bailey et al. (2020) to make the sample more representative of the total population. To reweight the data, the linked sample of individuals from 1850 to 1870 is pooled with the population of all children under the age of 14 with English, Irish, or German born fathers. I run a probit model to predict the probability $\hat{p}$ that an individual is linked from 1850 to 1870 as a function of an individual's state and age in

1850 and their father's occupational category and literacy in 1850 (results of the probit can be found in the Appendix). Individuals are then assigned a weight of $(1- \hat{p})/ \hat{p}$. Table 2 shows the characteristics of the data before and after reweighting.

After reweighting based on these characteristics, nearly all of the coefficients become statistically insignificant, except for segregation (measured by the next-door neighbor method developed by Eriksson and Ward (2019), which I will describe in detail later). The magnitude of the coefficient on segregation is reduced, but after reweighting, the final sample is still more likely to have lived in a slightly less segregated area than the full population.

Out of the males in the 1850 full-count census, there are 448,644 children between the age of 0 and 14 with fathers from Ireland, Germany, and England. In the final linked sample from 1850 to 1870, there are 37,784 sons linked to Irish, German, or English born fathers from 1850. The linking rate using the conservative[1] ABE method is 8.4%. In the dataset, there are 9,499 observations from English fathers, 13,972 observations from Irish fathers, and 14,313 observations of sons whose fathers originate from Germany.

Tables 3 and 4 show summary statistics for the sons in 1870 and the fathers in 1860. The mean age of sons in 1870 is 26, and of fathers in 1850 is 40. The average reported wealth of fathers in 1850 is 16,594 dollars, and the average for the sons in 1870 is 19,554 dollars. Although the sons have not had as much time to accumulate wealth on average relative to their fathers in 1850, the average wealth for sons in 1870 is higher due to the inclusion of personal property wealth.

[1] In the conservative method of the ABE linking algorithm, names are required to be unique within a 5-year band. This reduces measurement error resulting from possible false links of people with identical names and similar ages.

Table 1: Characteristics of 1850 population before and after reweighting.

	(1) Age	(2) White collar	(3) Farmer	(4) Unskilled	(5) Skilled	(6) Northeast	(7) Midwest	(8) South	(9) West	(10) Literate	(11) Residential segregation
Panel A: Selection into the linked sample											
Linked	-0.220	0.012	0.057	-0.071	0.002	-0.081	0.063	0.018	0.001	0.023	-0.027
	(0.022)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.000)	(0.002)	(0.001)
Constant	6.121	0.089	0.282	0.432	0.188	0.556	0.342	0.101	0.001	0.900	0.345
	(0.007)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891
R-squared	0.000	0.000	0.001	0.002	0.000	0.002	0.002	0.000	0.000	0.001	0.001
Panel B: Sample after reweighting											
Linked	0.034	-0.000	-0.001	-0.000	-0.001	0.000	-0.000	-0.000	-0.000	0.001	-0.019
	(0.023)	(0.001)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.000)	(0.002)	(0.001)
Constant	6.121	0.089	0.282	0.432	0.188	0.556	0.342	0.101	0.001	0.900	0.345
	(0.007)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891	419,891
R-squared	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001

Notes: Panel A compares the linked sample of males from the US 1850-1870 Censuses to the full sample of males ages 0-14 with English, Irish, and German-born fathers from the 1850 US Census. Panel B shows the estimates after reweighting on an individual's state, age, father's literacy, and father's occupation in 1850 using the inverse-propensity score method, where individuals are assigned a weight of $(1-\hat{p})/\hat{p}$ where $\hat{p}$ is the probability of the individual being linked. Standard errors are reported in parentheses. Segregation is defined using the measure developed in Eriksson and Ward (2019). Occupational status is inferred from an individual's reported occupation; white collar workers are defined as those with occupations in professional and technical backgrounds, managers, officials, and proprietors, and clerical workers, unskilled workers are defined as those who are service workers, operatives, farm laborers, and other laborers, and skilled workers are defined as craftsmen.

Table 2: Summary statistics of individuals in 1870.

	(1) Full population	(2) English 2nd gen	(3) Irish 2nd gen	(4) German 2nd gen
Age	25.97	26.36	25.83	25.87
	(3.99)	(4.04)	(3.96)	(3.98)
Residential segregation	0.32	0.13	0.36	0.41
	(0.21)	(0.14)	(0.19)	(0.19)
Wealth (2020 dollars)	19,554.41	24,169.31	17,231.63	19,755.63
	(99,218.50)	(88,732.68)	(128,466.5)	(68,063.76)
Percentile rank of wealth	72.67	72.58	71.54	73.97
	(18.33)	(18.59)	(18.45)	(17.93)
Zero wealth	0.64	0.58	0.71	0.60
	(0.48)	(0.49)	(0.45)	(0.49)
Literate	0.94	0.96	0.93	0.94
	(0.23)	(0.20)	(0.26)	(0.23)
White collar	0.15	0.16	0.14	0.17
	(0.36)	(0.37)	(0.35)	(0.37)
Farmer	0.17	0.21	0.13	0.18
	(0.37)	(0.41)	(0.33)	(0.38)
Unskilled	0.41	0.37	0.46	0.38
	(0.49)	(0.48)	(0.50)	(0.49)
Skilled	0.19	0.18	0.19	0.19
	(0.39)	(0.39)	(0.39)	(0.39)
Northeast	0.45	0.46	0.56	0.32
	(0.50)	(0.50)	(0.50)	(0.47)
Midwest	0.42	0.44	0.32	0.53
	(0.49)	(0.50)	(0.46)	(0.50)
South	0.10	0.07	0.09	0.13
	(0.30)	(0.25)	(0.28)	(0.33)
West	0.03	0.04	0.03	0.02
	(0.17)	(0.19)	(0.18)	(0.15)
Observations	37,784	9,499	13,972	14,313

Notes: Sample originates from the 1850-1870 U.S. Census, restricted to males age 20-34 in 1870 with fathers born in Ireland, England, or Germany. Data are reweighted for representativeness after linking. Standard deviations are reported in parentheses. Residential segregation is defined by the measure developed by Eriksson and Ward (2019). Wealth is defined as real property and personal property. Percentile ranks of wealth are computed by age cohort. Occupational status is inferred from an individual's reported occupation; white collar workers are defined as those with occupations in professional and technical backgrounds, managers, officials, and proprietors, and clerical workers, unskilled workers are defined as those who are service workers, operatives, farm laborers, and other laborers, and skilled workers are defined as craftsmen.

Table 3: Summary statistics of fathers in 1850.

	(1) Full population	(2) English fathers	(3) Irish fathers	(4) German fathers
Age	39.59	39.68	39.43	39.71
	(8.08)	(8.10)	(8.22)	(7.92)
Wealth (2020 dollars)	18,767.67	21,561.59	18,439.36	17,234.29
	(135,173.50)	(93,771.97)	(193,011.50)	(77,614.67)
Percentile rank of wealth	66.92	67.73	65.83	67.57
	(15.33)	(16.36)	(14.47)	(15.48)
Zero wealth	0.57	0.55	0.67	0.47
	(0.50)	(0.50)	(0.47)	(0.50)
Literate	0.90	0.94	0.82	0.97
	(0.30)	(0.23)	(0.39)	(0.17)
White collar	0.09	0.10	0.07	0.11
	(0.29)	(0.30)	(0.25)	(0.31)
Farmer	0.29	0.31	0.23	0.33
	(0.45)	(0.46)	(0.42)	(0.47)
Unskilled	0.43	0.36	0.56	0.33
	(0.49)	(0.48)	(0.50)	(0.47)
Skilled	0.19	0.22	0.13	0.22
	(0.39)	(0.42)	(0.34)	(0.42)
Northeast	0.55	0.58	0.69	0.38
	(0.50)	(0.49)	(0.46)	(0.49)
Midwest	0.34	0.35	0.22	0.48
	(0.48)	(0.48)	(0.41)	(0.50)
South	0.10	0.06	0.09	0.14
	(0.30)	(0.24)	(0.28)	(0.34)
West	0.00	0.00	0.00	0.00
	(0.04)	(0.07)	(0.02)	(0.01)
Observations	37,784	9,499	13,972	14,313

Notes: Data originates from the 1850 U.S. Census and shows fathers from Ireland, England, and Germany who matched to children under 14 in 1850 linked between the 1850 and 1870 censuses. Data are reweighted for representativeness after linking. Standard deviations reported in parentheses. Wealth is defined as real property wealth. Percentile ranks of wealth are computed by age cohort. Occupational status is inferred from an individual's reported occupation; white collar workers are defined as those with occupations in professional and technical backgrounds, managers, officials, and proprietors, and clerical workers, unskilled workers are defined as those who are service workers, operatives, farm laborers, and other laborers, and skilled workers are defined as craftsmen.

I use the percentile rank of wealth as the main outcome of interest. Percentile ranks are favorable over other measures of wealth, such as log wealth, since I am able to include those who do not have any reported real estate or personal property wealth. Percentile ranks also have been favored in mobility literature since they reduce the influence of outliers at the top and bottom end of the distribution (Chetty et al. 2014). However, there still remains the issue of measuring outcomes for those who have little to no wealth. One would expect that the minimum percentile rank of wealth should be zero; however, since a large portion of individuals report zero wealth, there are ties at the bottom of the distribution, causing the minimum percentile rank of wealth in 1850 to be 29.7, and the minimum percentile rank in 1870 to be 31.9. In 1870, I am able to reduce clustering at the bottom of the distribution by adding an individual's wealth personal property wealth in addition to their real estate wealth, but there is not data of personal property wealth for the fathers in 1850. Even after including personal property wealth, there remains a relatively large portion of the sample who report having zero wealth in 1870, which is a limitation of this dataset.

The independent variable, residential segregation, is measured for each individual with the segregation score developed by Eriksson and Ward (2019). This measure captures how evenly distributed native-born and foreign-born households are in a particular area, regardless of whether that area is rural or urban. In historical data, neighboring lines on the Census are good proxies for an individual's actual neighbors. This measure takes advantage of this fact to determine the average level of segregation for a county based on the number of foreign-born households with native-born neighbors, given by the following formula:

$$(1) \quad \eta_{j,c} = 1 - \frac{native_{j,c}}{E(native_{j,c})}$$

The segregation score η for county c and country of birth j is 1 minus the actual number of foreign-born households with a native-born neighbor over the expected number of foreign-born households with a native-born neighbor. If immigrants were randomly located throughout a county, then the actual number of households with native-born neighbors ($native_{j,c}$) would equal the expected number ($E(native_{j,c})$), and the segregation score would be zero. If immigrants were completely isolated from native-born households (implying the numerator $native_{c,j}$ is zero), the segregation score would be one. It is possible to have a negative segregation score if immigrants are more likely to live near native-born households than other foreign-born households in their county, which may occur in counties with a large number of other migrant sources or in counties with a small number of immigrants from the sending country. In this sample, the mean level of segregation is 0.257, the minimum segregation is -0.968, and the maximum is 0.891.

Empirical Framework

I begin by estimating the relationship between residential segregation in an individual's childhood in 1850 and their percentile rank of wealth in adulthood. First, I examine the functional form of the relationship between percentile rank of wealth and segregation in 1850. Figure 1 shows the binned scatterplot of the percentile rank of wealth and segregation. The relationship appears linear, with a weak negative association. One possible explanation of this weak association is that the negative effects of segregation are being obscured by positive network effects of enclaves. As the relationship between wealth outcomes and segregation does appear linear, I use a linear regression model to more precisely estimate the association between them.

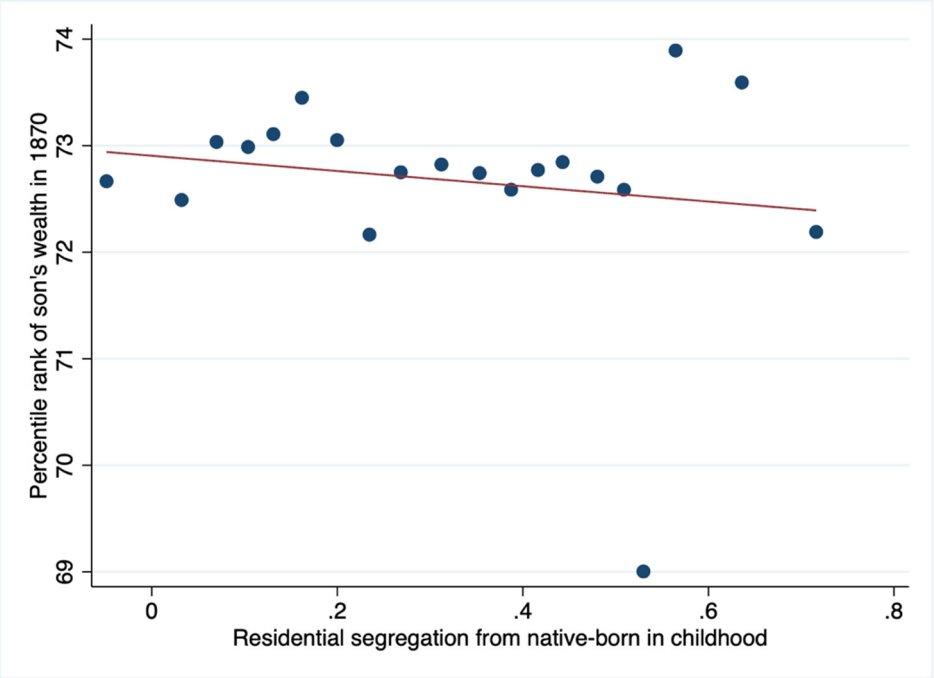

Figure 1: Percentile Rank of Wealth in 1870 and Segregation in 1850

Notes: Data originate from the 1850-1870 linked US Census of males age 20-34 with Irish, German, or English-born fathers. Data are reweighted for representativeness after linking. Segregation refers to an individual's segregation measure, computed using Equation (1). Wealth is defined as the total of real property and personal property. Percentile ranks are computed by an individual's age cohort.

To measure the relationship between an individual's level of segregation in 1850 with their relative wealth mobility in 1870, I use the following regression:

$$(2) \qquad WealthRankSon_{ijc} = \beta_0 + \beta_1 segregation_{jc} + \Pi' X_{ijc} + \gamma_c + \theta_j + \epsilon_{ijc}$$

The dependent variable $WealthRankSon_{ijc}$ is the percentile rank of an individual i's wealth as compared to individuals of the same age. The main independent variable $segregation_{jc}$ measures the residential segregation of immigrants from natives at the

country of birth j and county c level (Eriksson and Ward 2019). Segregation captures variation in the childhood segregation levels in 1850. The fixed effect γ_c controls for various fixed factors about the county in 1850, such as the industrial composition, population size, and density. The fixed effect θ_j controls for country of birth (Ireland and Germany, with England as the excluded group), in case countries of birth vary in their segregation level and their long-run wealth outcome. Since both county and country of birth fixed effects are included in the regression, the effect of segregation is identified from within-county variation in segregation across different countries of birth. For example, for those growing up in Manhattan in 1850, the segregation measure is 0.003 for children of English immigrants, 0.530 for children of Irish immigrants, and 0.504 for children of German immigrants.

Because there is not exogenous variation in segregation, I am unable to estimate a causal relationship between segregation and long-run wealth. The county in which an individual grew up in 1850 could be correlated with several unobservable characteristics. It is possible that immigrants sort into enclaves by ability, obscuring the effect of the enclaves themselves on their children's outcomes. Those who live in more segregated areas could also come from lower socioeconomic households, which would negatively bias the effect of segregation. In X_{ijc}, I control for the father's percentile rank of wealth in 1850, which allows me to directly capture the socioeconomic status of the household. X_{ijc} also includes controls for individual characteristics such as the father's literacy and number of children in the household. Therefore, the estimated effect of segregation will be conditional on observable characteristics.

Another issue is that segregation is only measured at one point in time. In particular, the level of segregation reported in 1850 may not be representative of the actual level of segregation experienced throughout the duration of their childhood if the family moved at any point. This would lead to measurement error in the segregation coefficient and possibly attenuate the coefficient toward zero.

CHAPTER FOUR

Results

Segregation and percentile rank of wealth

A simple regression of one's wealth percentile in 1870 on his 1850 childhood segregation level shows a positive relationship (see Table 5). This positive coefficient on segregation suggests that living in a more highly segregated area in 1850 is correlated with a higher percentile rank of wealth in 1870, which is surprising given expectations about the detrimental effects of living in enclaves. As the standard deviation of segregation for the population is 0.2, increasing the segregation measure by one standard deviation is associated with an increase of 0.2 in an individual's percentile rank of wealth.

One factor to consider for an individual's wealth outcome is whether they were raised in a high or low socioeconomic status household. The regression in Column 1 may be skewed as fathers with higher levels of wealth tended to settle in less segregated areas. Column 2 reports the results of the regression after controlling for the percentile rank of wealth of the father in 1850. A large number of fathers in the dataset are reported to have zero real estate wealth in 1850, which may distort the functional form for percentile rankings, so I also add an indicator variable for whether the father reports having zero real estate wealth to this regression. The coefficient on the father's percentile rank of wealth shows the association between the percentile rank of wealth for the father and the son, or relative intergenerational mobility (Solon 1992). When controlling for the percentile rank

of the father's wealth in 1850, the coefficient on segregation increases to 1.7. This suggests an increase of one standard deviation in the segregation measure is associated with a 0.4 percentile rank increase in wealth, again implying higher levels of segregation to be associated with improved wealth outcomes later in life relative to those living in less segregated areas.

One explanation for the positive coefficient on segregation in Columns 1 and 2 is that counties with a high number of immigrants in general, rather than a high level of segregation, have positive network effects. While the segregation variable is corrected for population size, segregation is correlated with larger immigrant populations. To better estimate the effect of segregation itself, in Column 3, the log of the number of immigrants in the county from the same sending country as the individual's father is added as a control. In addition, there are other factors from 1850 that could be influencing the results. For example, the number of children in the household, living in an urban area, and the father's literacy could all influence the wealth outcomes of individuals later in life. In Column 3, controls are added for these variables as well as for the sending country of the father. When adding these controls, the coefficient on segregation becomes negative and more significant. These findings suggest that an increase in an individual's segregation measure by one standard deviation is associated with a decrease in their percentile rank of wealth by 0.5. Therefore, after controlling for the number of immigrants from the same country present in the county, living in a more segregated area in childhood appears to be associated with poorer wealth outcomes later in life. Notably, the coefficient on the log number of immigrants is positive, suggesting that a larger network of immigrants was indeed associated with increased wealth outcomes in 1870.

Finally, in Column 4, the coefficient on segregation is allowed to differ by immigrant group. The coefficient on segregation for the second-generation English individuals is estimated at -3.6, or a decrease of 0.8 for a one standard deviation increase in the segregation measure. From the coefficients on the interaction terms for Irish and German, it does not appear that there is a statistically significant difference between the relationship of segregation and wealth accumulation for English, Irish, and German immigrants. These findings suggest that any effects of segregation on wealth outcomes were similar across immigrant groups in this time period.

As the individuals in the dataset range from ages 20-34, many of the individuals observed have not had a long amount of time to accumulate wealth. In Column 5, I restrict the sample only to those individuals aged 30 and above in 1870. The coefficient on segregation is more negative, but is not statistically significant when the sample is restricted to only these individuals.

Finally, it is possible that the effect of segregation is different for urban areas than for rural areas. In Table 6, I repeat the specification from Column 3 of Table 5. In Column 2 of Table 6, I allow the relationship to differ for those in urban areas. I repeat these specifications for each individual immigrant group in Columns 3-8. I do not find any statistically significant difference for those living in urban areas compared to those living in urban areas.

These results are suggestive evidence that, while there appears to be some negative association between living in a more segregated area and wealth outcomes later in life, the relationship is modest. In Column 3, the results imply that living in a perfectly segregated area (with a segregation measure of 0) is only associated with a 2.5 percentile rank decrease

in wealth relative to those living in a perfectly integrated area (with a measure of 1). While the difference may be understated given that the percentile ranks only range from about 30 to 100 due to the clustering of individuals with zero wealth at the minimum rank, this still is a relatively small decrease. For example, the range of the difference in average percentile ranks across Census regions is about 7.1. From these results, it appears that, after controlling for the number of immigrants in the county and other characteristics, the relationship between segregation and wealth accumulation later in life is not as detrimental as critics suggest.

Table 4: Regressions of segregation and percentile rank of wealth.

	(1)	(2)	(3)	(4)	(5)
Residential segregation	1.067	1.711	-2.479	-3.595	-4.269
	(0.638)	(0.625)	(0.972)	(1.750)	(3.784)
Father's percentile rank of wealth		0.305	0.263	0.263	0.101
		(0.009)	(0.009)	(0.009)	(0.021)
Father had no wealth		6.147	4.565	4.574	-0.977
		(0.295)	(0.305)	(0.305)	(0.748)
Father was literate			-0.190	-0.201	0.509
			(0.384)	(0.384)	(0.924)
Urban			-0.898	-0.944	-1.954
			(0.322)	(0.329)	(0.776)
Number of children in 1850 household			-1.369	-1.368	0.129
			(0.052)	(0.052)	(0.124)
Log of number of immigrants from sending country			0.583	0.594	0.723
			(0.219)	(0.220)	(0.518)
Irish			-0.466	-0.353	-1.212
			(0.337)	(0.508)	(1.167)
Irish x Segregation				0.378	-2.853
				(1.981)	(4.359)
German			2.022	1.342	-0.285
			(0.383)	(0.618)	(1.460)
German x Segregation				2.556	5.607
				(2.219)	(5.037)
Son's age	20-34	20-34	20-34	20-34	30-34
County fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	37,589	37,589	37,589	37,589	8,321
R-squared	0.038	0.072	0.095	0.095	0.116

Notes: Regressions use data from the linked sample of children of Irish, German, and English immigrants from the 1850 US Census to the 1870 US Census. Data is reweighted based on the probability an individual is linked across Censuses. Wealth in 1870 is defined as the total dollar value of real and personal property. Wealth in 1850 is defined as the total dollar value of real property. Residential segregation is defined by the measure developed by Eriksson and Ward (2019). Percentile ranks of wealth are computed by age cohort. Robust standard errors in parentheses.

Table 5: Regressions of segregation and percentile rank of wealth by urban status.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Residential segregation	-2.479	-3.065	-4.275	-7.151	-3.749	-5.482	-3.937	-4.235
	(0.972)	(1.227)	(3.102)	(4.168)	(4.180)	(5.938)	(3.342)	(3.710)
Urban	-0.898	-1.181	-0.593	-1.994	-1.443	-1.799	-0.956	-1.163
	(0.322)	(0.512)	(0.581)	(1.504)	(0.870)	(1.246)	(0.574)	(1.337)
Urban x segregation		0.853		3.807		2.613		0.507
		(1.191)		(3.782)		(6.512)		(2.974)
Childhood controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	All	All	Ireland	Ireland	England	England	Germany	Germany
Observations	37,589	37,589	13,776	13,776	9,317	9,317	14,134	14,134
R-squared	0.095	0.095	0.115	0.115	0.122	0.122	0.101	0.101

Notes: Regressions use data from the linked sample of children of Irish, German, and English immigrants from the 1850 US Census to the 1870 US Census. Data is reweighted based on the probability an individual is linked across Censuses. Wealth in 1870 is defined as the total dollar value of real and personal property. Wealth in 1850 is defined as the total dollar value of real property. Residential segregation is defined by the measure developed by Eriksson and Ward (2019). Percentile ranks of wealth are computed by age cohort. Robust standard errors in parentheses.

Segregation and Change in Wealth from Father to Son

One disadvantage of using the percentile rank of wealth is that individuals between the ages of 20-34 years old have not had much time to accumulate wealth, leading to ties in the percentile ranks of wealth at the bottom of the distribution. As this causes individuals to be more closely clustered together by percentile ranks, it may diminish the true magnitude of the association between segregation and wealth accumulation. Another method to measure the wealth accumulation of individuals that partially reduces this problem is using the change in wealth in 1870 relative to their father's wealth in 1850. To do so, I replace the dependent variable of the percentile rank in Equation 2 with the change in wealth, measured by subtracting the dollar value of real estate wealth reported by the father in 1850 from the dollar value of the son's real estate wealth in 1870. I also include a quartic in age for the father and a cubic in age for the son to account for the different points in their lifecycles.

In Column 1 of Table 7, I estimate the relationship between segregation and the change in wealth. In this first regression, an increase of segregation by one standard deviation is associated with a 2,770 dollar increase in the difference of wealth, relative to 2020 dollars. When controlling for the father's wealth in 1850, this coefficient decreases to 7303, and is significant at the 90% level, implying an increase of one standard deviation in the segregation level is associated with a 1,534 dollar decrease in wealth (see Column 2). Similar to the regressions with the percentile rank of wealth, there appears to be a modest negative association.

In Column 3, the number of immigrants from the source country and an indicator for the country of origin is added as a control, and the coefficient becomes slightly less

negative to 7,100 dollars (though the result is noisier). This implies a one standard deviation increase in segregation is associated with a 1,491 dollar decrease in wealth relative to the father's wealth in 1850. Similar to the results with the percentile ranks of wealth, the relationship does not appear to differ by immigrant group, as evidenced by the statistically insignificant coefficients on the interaction terms in Column 4.

Finally in Column 5, I estimate the relationship only for those 30 and older, who have had more time to accumulate wealth. Again, I find no statistically significant relationship between the change of wealth and the level of residential segregation when excluding the sample only to those 30 or older in 1870. I also repeat these regressions in Table 8, allowing the results to differ by urban status. I do not find evidence that the relationship was different for those living in urban areas. These findings are also suggestive evidence of a negative, but modest, association between wealth outcomes and the level of residential in childhood, and that this association was similar for the children of different immigrant groups.

Table 6: Regressions of segregation and change in wealth.

	(1)	(2)	(3)	(4)	(5)
Residential segregation	13,186.65	-7,303.26	-7,099.05	-16,166.51	-26,243.15
	(5,517.28)	(4,168.60)	(5,904.88)	(13,213.27)	(31,145.81)
Father's wealth		-0.94	-0.94	-0.94	-0.98
		(0.04)	(0.04)	(0.04)	(0.03)
Father had no wealth		-7,533.17	-7,634.60	-7,607.46	-20,987.97
		(2,184.30)	(2,229.14)	(2,228.69)	(4,837.10)
Father was literate			1,861.62	1,840.00	2,980.70
			(1,810.83)	(1,842.28)	(8,776.13)
Urban			791.03	395.70	4,571.54
			(1,281.47)	(1,235.44)	(5,312.64)
Number of children in 1850 household			-581.86	-566.01	-159.93
			(324.70)	(325.83)	(867.87)
Log of number of immigrants from sending country			1,209.50	1,199.87	1,581.82
			(1,002.45)	(970.99)	(3,375.39)
Irish			-2,832.71	-3,547.12	-3,379.13
			(1,634.90)	(2,658.72)	(8,345.71)
Irish x Segregation				8,162.96	3,063.84
				(12,566.61)	(33,535.28)
German			-2,060.10	-5,676.17	-13,543.48
			(1,701.96)	(2,725.67)	(10,217.29)
German x Segregation				15,962.28	43,006.56
				(13,509.68)	(36,393.82)
Son's age	20-34	20-34	20-34	20-34	30-34
County fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	37,589	37,589	37,589	37,589	5,299
R-squared	0.03	0.53	0.53	0.53	0.80

Notes: Regressions use data from the linked sample of children of Irish, German, and English immigrants from the 1850 US Census to the 1870 US Census. Data is reweighted based on the probability an individual is linked across Censuses. Dollar values are in 2020 dollars. Wealth in 1870 is defined as the total dollar value of real and personal property. Wealth in 1850 is defined as the total dollar value of real property. Residential segregation is defined by the measure developed by Eriksson and Ward (2019). Percentile ranks of wealth are computed by age cohort. Robust standard errors in parentheses.

Table 7: Regressions of segregation and change in wealth by urban status.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Residential segregation	-7,099.05	-6,559.04	-10,460.15	-6,650.87	-13,941.91	21,388.55	13,245.98	2,275.44
	(5,904.88)	(4,963.95)	(11,763.74)	(13,317.59)	(24,574.87)	(24,308.16)	(13,606.48)	(13,356.50)
Urban	791.03	1,051.05	-740.44	1,114.20	2,280.53	9,553.12	403.64	-7,245.83
	(1,281.47)	(2,876.56)	(1,897.77)	(5,962.40)	(3,659.94)	(6,334.06)	(1,743.94)	(4,320.80)
Urban x segregation		-785.76		-5,040.70		-53,314.10		18,685.82
		(6,977.74)		(15,030.53)		(36,597.44)		(10,730.13)
Childhood controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth	All	All	Ireland	Ireland	England	England	Germany	Germany
Observations	37,589	37,589	13,776	13,776	9,317	9,317	14,134	14,134
R-squared	0.53	0.53	0.58	0.58	0.38	0.38	0.45	0.45

Notes: Regressions use data from the linked sample of children of Irish, German, and English immigrants from the 1850 US Census to the 1870 US Census. Data is reweighted based on the probability an individual is linked across Censuses. Dollar values are in 2020 dollars. Wealth in 1870 is defined as the total dollar value of real and personal property. Wealth in 1850 is defined as the total dollar value of real property. Residential segregation is defined by the measure developed by Eriksson and Ward (2019). Percentile ranks of wealth are computed by age cohort. Robust standard errors in parentheses.

CHAPTER FIVE

Conclusion

Critics suggest that immigrant enclaves were detrimental to economic mobility for immigrants and their children in the late 19th century. In this paper, I construct a linked sample of the children of Irish, German, and English immigrants from 1850-1870 to examine the relationship between residential segregation in childhood and wealth outcomes later in life. This paper improves upon the existing literature in two ways: by more precisely measuring economic outcomes with wealth data, as opposed to occupational income scores, and by using an improved measure of segregation that can better capture the dispersion of immigrants within a county. After controlling for the number of immigrants in a county, the wealth of the father, and county and country of birth fixed effects, I find that a one standard deviation increase in segregation is associated with a 0.53 decrease in an individual's percentile rank of wealth. These results suggest that there was a weak association between residential segregation in childhood and the son's outcome in 1870. While I am unable to estimate a causal effect of segregation, selection into enclaves is often estimated to be negative (e.g., Edin et al. 2003, Damm 2009), which suggests that the causal effect of growing up in a more segregated county was weak.

It is possible that the effect in the late 19th century may not be the same as in later time periods, for example, due to changing barriers to immigration, a different mix of source countries, and changing trends in urbanization. Further studies could examine the

effects of segregation on wealth outcomes for later periods in time, which may show different results depending on the difference in the results for urban and rural populations. This may provide a better indication of how immigrants and their children accumulated wealth and assimilated over time and thus better demonstrate the effect of enclaves on immigrant assimilation.

APPENDIX

Probability of being linked from 1850-1870 based on state, age, father's occupation and father's literacy in 1850.

	(1)
State in 1850:	
Arkansas	0.097
	(0.091)
California	0.298
	(0.124)
Connecticut	0.076
	(0.050)
Delaware	0.260
	(0.063)
District of Columbia	0.257
	(0.064)
Florida	0.184
	(0.107)
Georgia	-0.014
	(0.064)
Illinois	-0.031
	(0.046)
Indiana	-0.068
	(0.047)
Iowa	0.076
	(0.050)
Kentucky	-0.028
	(0.050)
Louisiana	-0.105
	(0.050)
Maine	0.097
	(0.051)
Maryland	0.044
	(0.047)
Massachusetts	-0.090
	(0.046)
Michigan	0.182
	(0.047)
Minnesota	0.358
	(0.207)
Mississippi	-0.212
	(0.074)
Missouri	-0.039

	(0.047)
New Hampshire	0.107
	(0.060)
New Jersey	0.087
	(0.047)
New York	-0.227
	(0.045)
North Carolina	-0.006
	(0.096)
Ohio	-0.110
	(0.045)
Oregon	0.222
	(0.160)
Pennsylvania	-0.161
	(0.045)
Rhode Island	0.120
	(0.052)
South Carolina	-0.216
	(0.063)
Tennessee	-0.218
	(0.070)
Texas	0.025
	(0.056)
Utah	-0.169
	(0.104)
Vermont	0.060
	(0.052)
Virginia	-0.063
	(0.058)
West Virginia	0.011
	(0.055)
Wisconsin	0.032
	(0.046)
Age in 1850:	
1 year old	-0.036
	(0.013)
2	-0.045
	(0.013)
3	-0.065
	(0.013)
4	-0.059
	(0.013)
5	-0.078
	(0.013)
6	-0.100
	(0.014)
7	-0.094
	(0.014)
8	-0.088
	(0.014)

9	-0.101
	(0.015)
10	-0.106
	(0.014)
11	-0.102
	(0.015)
12	-0.125
	(0.015)
13	-0.097
	(0.016)
14	-0.110
	(0.016)
Father's occupation:	
Farmer	-0.014
	(0.021)
Manager, official, or proprietor	-0.001
	(0.023)
Clerical or kindred	-0.039
	(0.061)
Sales worker	-0.110
	(0.032)
Craftsman	-0.077
	(0.021)
Operative	-0.075
	(0.022)
Service worker	-0.114
	(0.034)
Farm laborer	-0.174
	(0.073)
Laborer	-0.217
	(0.021)
Father was literate	0.085
	(0.010)
Constant	-1.134
	(0.051)
Observations	419,882

Notes: Data originate from the 1850 and 1870 U.S. Censuses. Sample includes individuals age 0-14 in 1850 and 20-34 in 1870 whose father is Irish, English, or German born. Omitted categories are the state of Alabama, individuals 0 years old in 1850, fathers in a professional or technical occupation, and non-literate fathers.

REFERENCES

Abramitzky, R., & Boustan, L. (2017). Immigration in American Economic History. *Journal of Economic Literature*, *55*(4), 1311–1345. https://doi.org/10.1257/jel.20151189

Abramitzky, R., Boustan, L. P., & Connor, D. (2020). *Leaving the Enclave: Historical Evidence on Immigrant Mobility from the Industrial Removal Office* (No. w27372; p. w27372). National Bureau of Economic Research. https://doi.org/10.3386/w27372

Abramitzky, R., Boustan, L. P., & Eriksson, K. (2012). Europe's Tired, Poor, Huddled Masses: Self-Selection and Economic Outcomes in the Age of Mass Migration. *American Economic Review*, *102*(5), 1832–1856. https://doi.org/10.1257/aer.102.5.1832

Abramitzky, R., Boustan, L. P., Eriksson, K., Feigenbaum, J., & Pérez, S. (2019). *Automated Linking of Historical Data* (No. w25825; p. w25825). National Bureau of Economic Research. https://doi.org/10.3386/w25825

Abramitzky, R., Boustan, L., Jacome, E., & Perez, S. (2021). Intergenerational Mobility of Immigrants in the United States over Two Centuries. *American Economic Review*, *111*(2), 580–608. https://doi.org/10.1257/aer.20191586

Abramitzky R., Boustan, L. P., & Myera Rashid. Census Linking Project: Version 1.0 [dataset]. 2020. https://censuslinkingproject.org

Bailey, M. J., Cole, C., Henderson, M., & Massey, C. (2020). How Well Do Automated Linking Methods Perform? Lessons from US Historical Data. *Journal of Economic Literature*, *58*(4), 997–1044. https://doi.org/10.1257/jel.20191526

Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). Where is the land of Opportunity? The Geography of Intergenerational Mobility in the United States *. *The Quarterly Journal of Economics*, *129*(4), 1553–1623. https://doi.org/10.1093/qje/qju022

Collins, W. J., & Zimran, A. (2019). *The economic assimilation of Irish Famine migrants to the United States*. Explorations in Economic History, 74, 101302. https://doi.org/10.1016/j.eeh.2019.101302

Damm, A. P. (2009). Ethnic Enclaves and Immigrant Labor Market Outcomes: Quasi-Experimental Evidence. *Journal of Labor Economics*, *27*(2), 281–314. https://doi.org/10.1086/599336

Edin, P.-A., Fredriksson, P., & Åslund, O. (2003). Ethnic Enclaves and the Economic Success of Immigrants—Evidence from a Natural Experiment. *The Quarterly Journal of Economics*, *118*(1), 329–357. https://doi.org/10.1162/00335530360535225

Eriksson, K. (2018). *Ethnic Enclaves and Immigrant Outcomes: Norwegian Immigrants during the Age of Mass Migration* (Working Paper No. 24763; Working Paper Series). National Bureau of Economic Research. https://doi.org/10.3386/w24763

Eriksson, K. & Ward, Z. (2019). *The Residential Segregation of Immigrants in the United States from 1850 to 1940.* The Journal of Economic History. 79. 1-38. 10.1017/S0022050719000536.

Ferrie, J. P. (1994). *The Wealth Accumulation of Antebellum European Immigrants to the U.S., 1840-60*. The Journal of Economic History, 54(1), 1–33. JSTOR.

Inwood, K., Minns, C., & Summerfield, F. (2019). *Occupational income scores and immigrant assimilation. Evidence from the Canadian census.* Explorations in Economic History, *72*, 114–122. https://doi.org/10.1016/j.eeh.2019.02.001

Solon, G. (1992). Intergenerational Income Mobility in the United States. *The American Economic Review*, 82(3), 393–408. JSTOR.

Ruggles, Flood S., Foster S., Goeken R., Pacas J., Schouweiler M. and Sobek M. (2020). IPUMS USA: Version 11.0 [dataset]. Minneapolis, MN: IPUMS, 2021. https://doi.org/10.18128/D010.V11.0

Wegge, S., Anbinder, T., & Ó Gráda, C. (2017). Immigrants and Savers: A Rich New Database on the Irish in 1850s New York. In *Working Papers* (No. 201707; Working Papers). School of Economics, University College Dublin.