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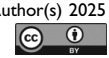
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# What Drives Immigrant Inequalities in Career Growth in the Age of Mass Migration?

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## Abstract

This article examines the association between modernization and career growth of American men and European immigrants, focusing on heterogeneity along ancestry, ethnicity, and early-career class position. Analyses rely on datasets built with individual-level linked historical Censuses (1901–1940), which longitudinally map socio-economic indices of full occupational careers of late-nineteenth-century population birth cohorts (1884–1891). Modernization is measured by time-variant and metropolitan area-specific indicators of key industries, employment chances, domestic migration, and urbanicity. Contradicting modernization theory and the logic of industrialism, results demonstrate that macroeconomic opportunity structures do not explain differences in career growth curves of first- and second-generation immigrants in comparison to White men with US-born parents. Instead, we argue that structural ethnic cleavages, in combination with early-career class allocation, account for most of the observed immigrant variation in intragenerational mobility. We also find that the career growth curves of second-generation immigrants from Ireland, the Nordic countries, and Russia, in particular, far exceed those of multigenerational American men, but only if they started their careers in the working-class rather than the agricultural sector.

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modernization, industrial change, career growth, ancestry, historical census, mass migration

## Introduction

Economic growth and structural economic change have been linked to higher levels of social mobility. This relationship has been described using different terminologies and referring to different historical periods, including "industrialization" (roughly between 1790 and 1840), "modernization" (nineteenth century and early-twentieth-century), and "post-industrialization" (since 1945). While important differences exist in terms of the nature of such economic growth periods and corresponding labor relations between these periods, there is consensus on the direction in which industrial change affects social stratification. Increasing division of labor, growth of service industries, mechanization of production, and technological advancement are believed to increase the labor market's dependency on education and skills, while decreasing the role of ascriptive factors (e.g., class origin, race, and ethnicity) in occupational allocation. This is known as the "logic of industrialism"—a theory of structural change first coined by Kerr et al. (1960), and in altered versions by Feldman and Feldman (1969), Levy (1966), and Treiman (1970). According to this thesis, a shift toward more selection on *non*-ascriptive features for occupational allocation implies that groups previously facing barriers to social mobility would benefit *most* from advanced industrialization and modernization.

Modernization is believed to have implications for intragenerational mobility, also known as career "progression" or "growth"—the focus of this study. Similar to intergenerational mobility, this literature addresses whether, *over time*, occupational careers have become more (upwardly) mobile.[1] The explanandum is the extent to which progressively higher levels of socio-economic positions are attained across work lives after initial allocation. Its' ideal type is represented by a growth curve, which reflects continuous adaptation to and benefits from industrial changes and labor market opportunities surrounding the individual. Most research on the logic of the industrialism hypothesis measures the extent to which occupational careers display differential levels of upward mobility across periods, cohorts, regions, countries, and class origins, then infers a role of "modernization" (Kaelble 1977 [1981]; Lipset and Bendix 1959 [1992]). Some empirical approaches directly examine the

[1] This study does not offer analysis of historical *intergenerational* mobility (parent–offspring), but instead focuses on career growth (*intragenerational*). We recommend Abramitzky et al. (2021) for analysis of father–son pairs in the linked 1880–1910 Censuses and Diaz and Lee (2023) for analysis of father–son pairs in the linked 1910–1930 Censuses. Connor and Storper (2020) provide an account of geographic variability in intergenerational mobility.

explanatory role of modernization, often measured by the time- and location-specific growth of production and service industries, urbanization, and mass communication (e.g., Schulz and Maas 2010).

This study falls in the latter category. It examines the association between modernization experienced at the metropolitan level and individuals' career growth. We analyze linked historical US Censuses to address migration background heterogeneity in occupational mobility during the first decades of the twentieth century. We prioritize these socio-demographic dimensions over factors such as class origin because this era was characterized by mass immigration—about 13.5 million European immigrants settled between 1880 and 1924—and anti-immigrant backlash from the 1910s onward (Lieberson 1980). We test modernization theory by investigating whether the varying career trajectories of immigrant groups can be linked to "unique" conditions of industrial change, as often suggested in social sciences and popular culture. If these conditions indeed reduced the impact of ascriptive factors on occupational sorting and selection, we should observe a positive association between modernization factors and immigrants' relative advantages in career growth (i.e., climbing the socio-economic ladder over the life course).

Data consist of the socio-economic indices (SEI) of occupations attained over the course of careers of men born between 1884 and 1891. Their occupational pathways are mapped using linked Census records from 1910 to 1940. The linkages between any two Censuses are established using matching codes developed by Helgertz et al. (2020a). Individuals in this newly constructed panel dataset came of age in an industrializing society, characterized by more energy production, a rapidly expanding service sector, and urbanization. At the same time, early-twentieth-century US society was marked by racial-ethnic segregation, assimilation of European immigrant groups, and a series of legislative acts aimed at reducing immigration (Molina 2014; Portes and Rumbaut 2014; Restifo, Roscigno and Qian 2013). We therefore concentrate on relative career growth *advantages and disadvantages* experienced by first- and second-generation European immigrant groups compared to multigenerational US-born Whites. First, we first scrutinize the association between industrial change and heterogeneities in career growth among (a) foreign-born men (i.e., first generation), (b) US-born men with foreign-born parents (i.e., second generation), and (c) US-born White men with US parents. These results lead us to further inspect variation between specific ancestry groups and immigrant generations. To examine the explanatory role of modernization for career growth immigrant heterogeneity, we exploit year- and metropolitan area-specific variation in key indicators of industrial change: the size of key industries, urbanization, domestic migration, and employment.

Individuals' ability to attain increasingly higher socio-economic positions depends not only on the availability of (new) occupations, but also on their starting points (i.e., "first job"), educational attainment, and socio-cultural barriers in the labor market (Blau and Duncan 1967). The early-career class position serves as a springboard of chances of career growth over the life course. Therefore, we stratify

analyses, concentrating on those entering the labor market as either farmers (the agricultural sector) or members of the working-class. These two class positions combined capture more than 60 percent of the American workforce in 1910 and are believed to have experienced the highest levels of career progression due to macroeconomic growth and structural change.

However, our analyses suggest that there is *no association* between early-twentieth-century modernization and the relative advantages of (second-generation) European immigrants, nor with the relative disadvantages of the first generation. Instead, we find evidence for structural occupational inequality along racial-ethnic lines. There is considerable variation in the career growth of immigrants depending on the ancestry group (ethnicity), generation, and class upon labor market entry. Our findings have implications for understanding the relationship between structural change (including economic growth) and socio-economic (in)equalities, as well as the historical origins of today's racial-ethnic inequalities in the labor market.

We start with a discussion of the logic of industrialization thesis and historical career growth research on the United States. Using historically significant anchor points, we then make the case for studying racial-ethnic heterogeneity in early-twentieth-century career growth.

## Literature

### *Modernization and the Logic of Industrialism*

Theories of social mobility, including career growth, remained largely absent from sociological discourse until the introduction of the "logic of industrialism" theories in the 1960s. These scholars argued that industrialization drives educational expansion and skill attainment to meet ever-growing and more complex requirements of mechanized production, and vice versa. Industries relying on technology and the production of consumer goods also accelerated the development of mass communication and transportation (Feldman and Feldman 1969), as well as urbanization around, and migration toward, new industrial hubs (Kerr et al. 1960). The logic of industrialism posits that the occupational structure changes such that increasingly more high-status occupations become available (Mitch, Brown and van Leeuwen 2004). This creates more structured pathways within firms and industrial niches that facilitate upward career trajectories. As Inkeles (1960) argued, modern society is organized along "status ladders of occupations, income, and education" (p.28). It not only allows for increasingly upwardly mobile careers within life courses (Hauser et al. 1975; Schulz, Maas and van Leeuwen 2015), but also for allocation that is less affected by ascriptive features such as class origin and race (Treiman 1970).

In this study, we focus on modernization during "late industrialization," which covers the last decade of the nineteenth century and the first decades of the twentieth century. This era was characterized by growing infrastructure, technological advancement, increasing employment in the production of consumer goods and

services, rapid growth of urban economic hubs, and educational expansion (Chandler 1990; Gray 2013; Lipset and Bendix 1959 [1992]). To illustrate the pace of these developments, the ratio of administrative workers to production workers grew from 8:100 in 1899 to 22:100 just after World War II (Bendix 1956) and the number of students attending higher education increased about 17 times between 1890 and 1950.

*Career Growth Across Time and Place.* Intragenerational mobility research focuses on the sequential order of occupational positions over the life course, known as "career growth." Broadly defined, it involves analyzing the trajectory through the age-differentiated life course (Warren, Sheridan and Hauser 2002). A career starts with the first job after full-time education. One's socio-economic status (SEI) usually increases through job and occupation changes (Sørensen 1975; Spilerman 1977), reaching a peak at around age 35 to 40 (Rosenfeld 1992). Most mobility studies of the mid-twentieth-century found a decreasing association between class origin and socio-economic status reached at occupational maturity (Blau and Duncan 1967; see Hauser and Featherman 1973). However, with regard to career growth, specifically, research also reports stable mobility levels over time (Kaelble 1977 [1981]); Lipset and Bendix 1959 [1992]; Sorokin 1927).

With regard to pre-World War II dynamics, Kaelble (1977 [1981]), who exclusively reviewed historical occupational mobility, argues that the "logic of industrialism" is flawed. Even the United States, regarded as the land of opportunity in this era, appeared to be no exception to stable mobility rates. Kaelble derives this conclusion based on studies reporting low levels of career growth in areas and periods where industrial change should have boosted occupational mobility. Referring specifically to nineteenth-century industrialization and city-level and regional-level datasets, studies included 1850–1880 Newburyport (MA) (Thernstrom 1964), 1830–1860 Boston (Knight 1971), and the 1830s and onward in Philadelphia (Blumin 1969). However, there are also numerous studies that have explicitly linked modernization to career growth across successive cohorts, for example in data from 1870–1880 Lynn (MA) (Dawley 1976), 1850–1880 Poughkeepsie (NY) (Griffen and Griffen 1978), and 1850–1880 South Bend (IN) (Esslinger 1975), as well as in nineteenth-century Sweden (Maas and van Leeuwen 2004).

A much smaller number of studies have examined career growth during the modernization of the early-twentieth-century—the focus of our study. Furthermore, virtually all of them were conducted using region- or local-level datasets. Results are mixed. Worthman (1971) finds high levels of career growth among industrial workers in Birmingham (AL), 1880–1914. Using occupation reports of men and their fathers in Indianapolis between 1910 and 1940, Rogoff (1953) concludes that both intergenerational mobility and career growth have remained largely unchanged. In Boston, and covering 1880–1970, Thernstrom (1973) finds high but constant rates of career growth. (Kaelble 1977 [1981]) compared the occupational mobility rates of US and European cities between 1880 and 1930 and found higher rates *after* peak

industrialization—in observations of the mid-twentieth century rather than the nineteenth century. Corroborating these findings, Goldstein (1955, 1958) reports steadily increasing career progression rates between 1910 and 1950 using occupational mobility tables from Norristown (PA).

In sum, there is a lack of analysis of historical career trajectory data at the national level and a set of inconclusive findings regarding the role of modernization in explaining growth curves. Studies of historical career growth, including those covering the early twentieth century, do not observe full career pathways, but at best compare the survey responses for respondents' "first job" and "current job" in particular regions or cities. Social scientists sometimes *infer* an explanatory role of modernization, but have rarely assessed this association in empirical analyses. More importantly, despite high levels of immigration throughout this era, there is very little attention to career growth variation between immigrant groups and native-born individuals.

*Ancestry and Ethnicity.* Social boundaries in the economic life of the early 1900s emerged along class origin, migration background, and ancestry group (i.e., ethnicity), as well as religion, race, and to some degree class position. Historians often identify the late-nineteenth century as the "age of mass migration." It was characterized by an initial large stream of immigration from Europe—from the United Kingdom, Nordic countries, The Netherlands, Germany, Ireland, and Italy, and later from Eastern European countries, including Poland, Czechoslovakia, and Russia. Immigrant groups settled across the country, yet concentrated in the rapidly expanding urban centers in coastal areas and the Midwest; about half of urban residents in 1920 were first- or second-generation immigrants (Lieberson 1980).

The US continued to receive many thousands of immigrants from mostly Northwestern European countries in the first decades of the twentieth-century, as the second and third generations assimilated into society. Mass immigration slowed down in the 1910s because of a series of legislative acts aimed at reducing immigration (Molina 2014). These included a literacy test for immigrants and the Johnson-Reed Immigration Act of 1924, intended to limit immigration from Southern and Eastern European countries. These legislative actions illustrate a growing anti-immigrant sentiment in the early twentieth century—a recurring phenomenon in US society. Immigrant groups were continuously racialized, such that Northwestern European Protestant immigrants were quickly perceived as "mainstream White" (Gordon 1961; Warner and Srole 1945), while Catholics and Jews in particular were othered and subject to forms of institutional racism (Portes and Rumbaut 2014). Italian and Irish immigrants (predominantly Catholic), as well as Russians and Germans (many of whom were Jewish), faced explicit and more subtle forms of discrimination based on their first and last names (Alba and Nee 2005; Goldstein and Stecklov 2016). In other words, there are salient heterogeneities—or inequalities—in the experiences of different ethnic and ancestry groups (Brubaker 2001).

The first-generation immigrants varied in terms of their class position (in the origin country) and the types of jobs they were able to attain upon arrival in the US (Connor 2019). A large share of immigrants consisted of farmers and farm workers who escaped poverty in nineteenth-century Northwestern Europe (e.g., Ireland). Thereafter, immigrants continued to come from the working-classes, as well as from discriminated religious communities, such as Central and Eastern European Jews and Catholics (Ellis 1956; Kahan 1978; Handlin 1951; Hansen 1940).

With regard to career inequalities, scholars have shown some variation in social mobility and status attainment *among* immigrant groups, where religious identity appears to trump ethnicity (ancestry). For example, differences in occupational status between Catholic and Protestant immigrant groups had disappeared among third-generation German-Americans (Stouffer 1935). Furthermore, the second generation of most European immigrant groups of the early twentieth century is believed to have assimilated most quickly into American mainstream culture (e.g., speech and behavior), and to have experienced substantial intergenerational mobility (Alba and Nee 2005; Hutchinson 1956; Lieberson 1980; Waters 1990). Assimilation and economic integration primarily took place in metropolitan areas. More than 70 percent of the first generation in 1910 resided in urban areas, but so did the second generation. As noted by Eriksson and Ward (2022), in 1910, 40 percent of New Yorkers were foreign-born, and another 40 percent were children of immigrants.

The literature reports mixed findings with regard to patterns of immigrants' **career growth**. It remains unclear whether European groups had fewer or equal opportunities compared to US-born workers (Kaelble 1977 [1981]) and how macroeconomic contexts contributed to their life courses. Nationally representative studies are rare, and most historians focus on specific groups. For example, Griffen and Griffen (1978) find weaker favorable career growth rates for Irish and German immigrants, compared to natives, in New York state in the late 1800s. On the other hand, Blau and Duncan (1967) hypothesize a positive role of rapid industrial restructuring in the early 1900s, which should have helped many first-generation immigrants who arrived as farmers or unskilled laborers access new occupations in service or production. This pattern resonates with the "land of opportunity" narrative in popular culture. However, contrary to this common belief, first-generation immigrant groups never caught up with natives during their careers (Abramitzky et al., 2014), despite having access to internal labor markets in growing industries, such as manufacturing (Catron 2016).

Crucially, the *children of immigrants* often attained a markedly *higher* status upon occupational maturity than their US-born counterparts, at least when measured by prestige scores (Blau and Duncan 1967). Furthermore, the economic destinies of the second generation appear to be completely detached from the social status of their parents in the origin countries (e.g., Ireland, [Connor 2020]). The economic success of the second generation is often portrayed as uniform. That is, all European immigrant groups caught up to the level of individuals with

no recent migration history, contradicting the segmented assimilation theory (Diaz and Lee 2023). However, Russian Americans, and to some extent Czechs and Italians (Nam 1959), surpassed most other immigrant and ancestry groups in terms of both educational and occupational attainment. Blau and Duncan (1967) argue that these immigrant advantages of Eastern and Southern European groups must have offset the negative effects of widespread discrimination against non-Protestant communities.

Recently, Abramitzky and Boustan (2022) linked data from *Ancestry.com*—a website where Americans can trace their family tree—with historical Census data. Although these data are not strictly nationally representative, the millions of linkages between individuals and their parents, grandparents, and grand-grandparents allow for analysis of *intergenerational* social mobility. The authors argue that, despite the immigrant backlash and discrimination, immigrant families are able to reach the same—and often better—economic outcomes compared to individuals with no recent immigration history. However, this takes time; it is typically the second generation that enjoys the fruits of the parents' migration decision and "hard work"—an explicit reference to the immigrant spirit. Abramitzky and Boustan (2022) remain rather silent with regard to the causes and mechanisms of these immigrant advantages, yet stress the widespread and consistent evidence of the economic success of *all* second-generation immigrant groups in relation to both their parents and Americans with no recent migration history, and regardless of the immigrant cohort.

## Analytical Approach

Little is known about the mechanisms that allowed the second-generation of European immigrants to climb up the occupational ladder (Catron 2019) and the extent to which modernization, in particular, explains their growing advantage over other native-born groups. This study aims to explain social inequalities—both advantages and disadvantages—of both immigrant groups (first and second generation) in the first decades of the twentieth century, using population panel data and analytical models that examine the role of modernization. We test the "logic of industrialism" thesis by examining whether variation in metropolitan-level modernization conditions is associated with an immigrant background and ethnic heterogeneity in the career growth of men between ages 20 and 55, who were born between 1884 and 1891.

We focus on men because female labor market participation was still low before World War I. The analysis concentrates on the three largest European immigrant groups of the late 1800s and early 1900s: the United Kingdom and Nordic countries (both predominantly Protestant), Ireland and Italy (predominantly Catholic), and Germany and Russia (many of whom were Jewish). Contrary to Abramitzky and Boustan's comprehensive study (2022), our research focuses exclusively on (a) the *career growth* of immigrants in relation to the general male population, (b) *career*

*growth heterogeneity* along the country of origin ("ancestry"), and (c) the role of *metropolitan level* modernization as an explanation of the unique career mobility success of the children of immigrants: the second generation.

Specifically, we ask (a): To what extent does modernization—that is, forms of industrial change—explain second-generation immigrant career growth patterns and (limited) first-generation career growth vis-à-vis multi-generational US-born men? In other words, is variation in macroeconomic change in early-twentieth-century metropolitan areas associated with immigrant background variation in career growth? Next, we ask (b): To what extent do career growth patterns of the first and second generation vary between and within ancestry groups? Finally, we ask: (c) Does variation in exposure to modernization explains heterogeneity in career growth for different major European ancestry groups (i.e., British, Nordic, Russian, German, Irish, and Italian)?

## *Data*

The study sample selects from full-count population data: men who were employed, not enrolled in school, and between ages 19 and 26 in the 1910 Census. Career trajectories and time-variant socio-demographics (school enrollment, marital status, children) are obtained from responses in the next three Censuses: 1920, 1930, and 1940. We subsequently construct a Census *panel* using IPUMS' multi-generational longitudinal panel (MLP) crosswalks (Helgertz et al. 2020b). The MLP crosswalk uses a probabilistic method to link individuals between two Censuses by first selecting all potential matches based on sex, birthplace, birth year (±three years) and, subsequently, finding agreement on at least one adjusted bigram on the respondent's first and last name (>.7 Jaro-Winkler score) (Helgertz et al. 2020a). This results in a unique historical identifier across two Censuses. We replicate this linkage procedure for two additional Censuses to create "full career" longitudinal samples of individuals observed between 1910 and 1940, which contain birth cohorts between 1884 and 1891. Compared to some alternative matching strategies available for linking historical Census datasets, the MLP crosswalk should prioritize sample size over a somewhat higher chance of mismatch. However, empirically, the MLP offers very high match rates and precision (Helgertz et al. 2020a).

The match success rate for our population of interest—those who were matched three times and thus remained in the panel for three additional Censuses—is 66 percent. More precisely, out of 3,423,749 young individuals (i.e., 17-to-26-year-olds of both sexes, regardless of school enrollment and employment status) included in the 1910 Census, we can match 2,250,596 individuals across three additional Censuses (up to 1940).

However, our population of interest consists of men who are aged 19 through 26, not enrolled in education, employed, and residing in one of the 88 metropolitan areas in 1910 (Census variable "metaread"). This population consists of 321,105 unique individuals. We subsequently select individuals who meet the same requirements

in the Census of 1920, 1930, and 1940, reducing the panel sample by 13 percent. Analysis of career growth is conducted using data of individuals who started their career in either agriculture or the working-class (consisting of 436,181 person-Census observations). Supplemental Appendix A provides socio-demographic descriptive statistics of the final study sample and the 1910 Census, indicating that our panel dataset overrepresents White US-born men and married men, and underrepresents the first generation. To approach estimates that reflect the population in 1910 we apply person weights to all regression analyses. Additional robustness checks apply 1910–1940 attrition weights.

Analysis of heterogeneity in career growth concentrates on groups that are expected to experience occupational mobility; individuals whose careers started in the agricultural sector, as farmers or farm workers (occupation codes 100, 123, 810–840, and 910), or in the manual working-class (SEI 3 through 21, a definition that overlaps with "routine jobs" defined in the Erikson–Goldthorpe–Portocarero [1979] schema). Importantly, farmers and the working-class represent more than 60 percent of the workforce in 1910. The two-panel samples that will be analyzed separately consist of 88,487 person-Census observations of men who entered the labor market as farmers or farm workers and 347,694 person-Census observations of men who entered the labor market as members of the working-class.

## *Career Growth: The Socio-Economic Index*

We are first and foremost interested in the shape and distances of the "growth curves" of the Duncan socio-economic index (SEI from here) over the life course. The SEI index (Duncan 1961) is based on education and income data of occupations from the 1950 Census and ranges from 3 (motormen) to 96 (dentists). It captures the occupational hierarchy rather than income stratification. SEI is frequently used in both inter- and intra-generational mobility research because it is the broadest description of economic status as defined by one's occupation. SEI correlates highly with occupational prestige scores, such as the Siegel index (Stricker 1988), which emphasizes the status hierarchies and reputations of occupations, and income scores, such as "occupational score" in historical Censuses. We provide a robustness check of our main result in Supplemental Appendix B1. Aside from our interest in patterns of occupational standing, SEI has also remained rather stable over multiple decades (Featherman and Hauser 1977). Our graphs plot the marginal effects at ages 20 through 50 with 5-year intervals.

## *Level-1 Variables*

We include five individual-level time-variant or "level 1" variables. The most important life course indicator is age, which is a continuous variable ranging between 19

and 56 throughout the longitudinal samples. This age range allows us to see individuals' career progression between the early career and many years beyond occupational maturity. In addition, since we are also interested in the career trajectories of first-generation immigrants, the 19-to-56 age range helps us explore migration background heterogeneity in employment opportunities of those who arrived as children or young adults but experienced their entire work lives in the United States. We also include a quadratic term of age to capture career trajectories that are non-linear. To account for time-varying incentives and opportunities for the labor market participation of men, we control for marital status (binary), number of children (continuous), citizenship status (US-born citizen, naturalized, not a citizen), and school attendance (binary).

### *Level-2 Variables*

All level-2 variables are also individual-level, but time-invariant. To answer our questions about heterogeneity in career growth, we construct a categorical "migration background" variable. This indicates whether someone was (a) US-born to two US-born parents, (b) US-born to at least one foreign-born parent, and (c) foreign-born. For our research questions regarding *variation in career growth* between and within first- and second-generation immigrant groups and the US-born reference category, we construct a categorical "ancestry" variable. Aside from US-born Whites and Blacks to US parents, this variable indicates the country of origin (in case of first generation) or country of origin of either parent (in case of second generation) of immigrant groups that represent at least 1% of the US population at the start of the twentieth century: United Kingdom, Nordic countries (which combines Denmark, Sweden, Norway, Iceland, and Finland), Italy, Ireland, Russia, Germany, Austria-Hungary, The Netherlands, and "other ancestry." We only show the results of the six largest ancestry groups.

### *Level-3 Variables: Modernization*

We include six metropolitan-level indicators of modernization for each Census year (hence time-variant). Modernization is measured at the metropolitan level because this allows us to exploit variation of industrial change—which mainly occurs in metropolitan areas—in relation with career growth slope variation between immigrants and non-immigrants and different ancestry groups. This exercise excludes individuals residing outside of metropolitan areas in 1910, as well as individuals who were no longer living in a metropolitan area in subsequent Censuses.

The selection of the industrial change indicators is informed by previous research on modernization and career growth (Schulz and Maas 2010; Schulz, Maas and van Leeuwen 2015). First, *urbanicity* is measured by the metropolitan area's proportion of the population living in urban areas (which ranges between

77% and 98%).[2] Second, we take the proportion of the metropolitan residents who were *employed* as an indicator of labor market opportunity. Third, *net domestic migration* is measured by the inverse of the metropolitan area's proportion of residents who had moved into that metropolitan area in between Census years. Our fourth, fifth, and sixth indicators capture the relative growth of key industries as calculated by the metropolitan area's proportion of individuals employed. These are the percent of the workforce active in (a) the *food industry* (agriculture, forestry, and fishing), (b) the *production industry* (manufacturing, construction, communication, and transport), and (c) the *service sector* (finance, business, professional and related services, public administration, personal service, entertainment, and wholesale and retail). We consider a small agriculture sector and large production and service industries as *higher* levels of modernization.

To illustrate the operationalization of the explanatory variable, Table 1 provides the descriptive statistics of modernization variables for a selection of metropolitan areas—the top 10 most modernized and the bottom 10 least modernized. Ranked by the sum of z-scores on the six modernization indicators, we find the Providence-Fall River-Pawtucket, MA/RI area to be most modernized in 1910 and the Fort Worth-Arlington, TX area to be least modernized in 1910. Even in these tail ends of the 1910 modernization distribution, there is considerable geographic distribution. We find cities such as Denver, Cincinnati, and New Orleans among Northeastern areas in the list of most modernized metropolitan areas, and various Midwestern cities and Southern cities among the least modernized areas. The explanatory models exploit the within-metropolitan area change (over time) on career growth.

## Inference Method

We estimate hierarchical linear growth curve models, also known as multilevel models or HLM, which allow for random slopes and intercepts (Raudenbush and Bryk 2002). HLMs are suitable for two reasons that are specific to our dataset and questions. First, the individual-level Census data are nested "in nature," that is, individuals are nested both within metropolitan areas and within a particular Census year (1910–1940). HLMs help address the clustered standard errors at each observation level (Raudenbush and Bryk 2002) and allow for assessment of the variance in individual career growth *and* its heterogeneity across metropolitan areas—the focus of our study.

[2] Since we select on metropolitan contexts only, urbanicity contains relatively small variability. Hence, one limitation of our approach is that urbanicity is unlikely to drive a model that can either confirm or falsify a modernization thesis. However, given the strong evidence for urbanicity as a critical factor of modernization (e.g., Schulz and Maas 2010), we still consider this a relevant variable to include in our models.

**Table 1.** Descriptive Statistics of Modernization Factors in Metropolitan Areas in the 1910 Census.

| Metropolitan area | Freq. | Modernization | | Urbanicity | Active labor force | Net domestic migration | Food industry | Production industry | Service sector |
|---|---|---|---|---|---|---|---|---|---|
| | | z-Score | Rank | | | | | | |
| *10 most modernized in 1910* | | | | | | | | | |
| Providence-Fall River-Pawtucket, MA/RI | 8,432 | .544 | 1 | 98.0% | 56.5% | 2.6% | 3.1% | 54.5% | 24.0% |
| Brockton, MA | 3,709 | .505 | 2 | 97.8% | 55.9% | 2.2% | 4.6% | 55.1% | 22.1% |
| Denver-Boulder-Longmont, CO | 1,749 | .494 | 3 | 88.2% | 52.3% | 14.7% | 4.0% | 40.5% | 33.2% |
| Cincinnati, OH/KY/IN | 10,596 | .488 | 4 | 95.9% | 55.6% | 6.4% | 6.7% | 47.7% | 27.0% |
| Fall River, MA/RR | 6,722 | .442 | 5 | 97.7% | 56.7% | 2.2% | 4.5% | 58.3% | 21.4% |
| Boston, MA | 26,537 | .414 | 6 | 97.7% | 54.6% | 2.8% | 3.2% | 46.7% | 29.2% |
| Bridgeport, CT | 3,223 | .391 | 7 | 97.8% | 52.3% | 5.9% | 5.0% | 48.4% | 25.8% |
| Wilmington, DE/NJ/MD | 1,827 | .370 | 8 | 95.9% | 54.6% | 9.3% | 10.3% | 49.7% | 21.8% |
| New Orleans, LA | 3,600 | .369 | 9 | 96.8% | 52.8% | 2.6% | 2.4% | 43.7% | 34.2% |
| Washington, DC/MD/VA | 2,110 | .330 | 10 | 95.6% | 50.6% | 5.6% | 1.7% | 34.8% | 40.0% |
| *10 least modernized in 1910* | | | | | | | | | |
| Grand Rapids, MI | 3,990 | −.823 | 79 | 91.6% | 54.2% | 2.2% | 20.0% | 38.8% | 22.3% |
| Little Rock-N. Little Rock, AR | 750 | −.880 | 80 | 85.9% | 51.5% | 9.3% | 22.3% | 31.5% | 28.1% |
| San Antonio, TX | 1,634 | −1.000 | 81 | 90.3% | 53.6% | 3.1% | 23.3% | 28.5% | 31.2% |
| Dallas-Fort Worth, TX | 1,693 | −1.017 | 82 | 87.9% | 51.0% | 5.3% | 23.0% | 27.2% | 29.4% |
| Saginaw-Bay City-Midland, MI | 2,958 | −1.097 | 83 | 94.4% | 56.9% | 0.9% | 30.1% | 35.4% | 17.0% |
| Springfield, IL | 2,504 | −1.137 | 84 | 89.7% | 53.8% | 4.8% | 24.7% | 27.5% | 22.1% |
| Oklahoma City, OK | 1,129 | −1.173 | 85 | 79.3% | 49.9% | 14.6% | 25.7% | 24.5% | 29.0% |
| Wichita, KS | 1,988 | −1.324 | 86 | 80.6% | 54.3% | 12.8% | 35.0% | 25.4% | 23.0% |
| Lincoln, NE | 2,231 | −1.341 | 87 | 82.1% | 54.3% | 10.5% | 32.8% | 26.5% | 21.7% |
| Fort Worth-Arlington, TX | 1,098 | −1.421 | 88 | 83.3% | 48.1% | 5.5% | 21.6% | 30.6% | 28.1% |

*Notes*. Data include the 88 metropolitan areas identified in the 1910 Census.
*Source*. Authors' calculations of the 1910 through 1940 linked MLP Censuses.

For our first research question, which measures the extent to which modernization explains career progression along migration background (i.e., multi-generational US-born vis-à-vis first- and second-generation immigrant), we use equation (1):

$$\begin{aligned} Y_{tji} = {} & \gamma + \pi\,\text{age}_{tji} + \mu\,\text{age}^2_{tji} + \psi Z_{tji} + \beta\,\text{migration background}_{ji} \\ & + \lambda(\text{age}_{tji} \times \text{age}^2_{tji}) + \rho(\text{age}_{tji} \times \text{migration background}_{ji}) \\ & + \theta(\text{age}^2_{tji} \times \text{migration background}_{ji}) \\ & + \sigma(\text{age}_{tji} \times \text{age}^2_{tji} \times \text{migration background}_{ji}) + \delta C_{ji} + \alpha M_{ti} + \omega_i + u_i \\ & + r_{ji} + \varepsilon_{tji}, \\ \varepsilon_{tji} \sim N(0, \sigma^2_e),\ & r_{ji} \sim N(0, \sigma^2_r),\ u_i \sim N(0, \sigma^2_u),\ \omega_i \sim N(0, \sigma^2_\omega) \end{aligned} \tag{1}$$

where $Y_{tji}$ is the SEI of individual $_j$ from metropolitan area $_i$ and in time $_t$. $\gamma$ is an intercept. The time-varying level-1 variables are individual $\text{age}_{tji}$, $\text{age}^2{}_{tji}$, and all other socio-demographic controls (marital status, number of children, citizenship, and school attendance) $\boldsymbol{Z_{tij}}$, while $\pi$, $\mu$, and $\boldsymbol{\psi}$ are their corresponding coefficients, respectively.

The time-invariant level-2 variables are $\text{migration background}_{ji}$ (US-born to US-born parents, first-generation, second-generation) and ethnicity/ancestry ($\boldsymbol{C_{ji}}$), for which $\beta$ and $\boldsymbol{\delta}$ are corresponding coefficients, respectively. The combined ethnicity/ancestry variable indicates US-born White, Black, and ancestry (country of origin for the first generation and parental country of origin for the second generation). We include a cross-level three-way interaction between age, age-squared, and migration background ("nativity") where $\sigma$ is the coefficient. The terms $\lambda$, $\rho$, and $\theta$ represent coefficients from two-way interactions among the variables in the three-way interaction. This is to examine the SEI trajectories—career growth—across the life span between the ages of 20 and 55 in different models.

The level-3 variables comprise the modernization indicators $\boldsymbol{M_{ti}}$, in which $\boldsymbol{\alpha}$ is a vector of related coefficients: urbanicity, net domestic (in-)migration, employment, service sector, production sector, and food sector (all time-variant). Furthermore, $\omega_i$ is the random slope for the association between migration background and SEI mobility across metropolitan areas ($N(0, \sigma^2_\omega)$), $u_i$ is the random intercept for level-3 (i.e., metropolitan area) ($N(0, \sigma^2_u)$), $r_{ji}$ is the random intercept for level-2 (i.e., individuals) ($N(0, \sigma^2_r)$), and $\epsilon_{tji}$ is a level-1 error term ($N(0, \sigma^2_e)$). Using the random slope for migration background, we examine the extent to which metropolitan area-level modernization indicators explain the variance in the migration background slope (SEI career progression), as well as in comparison to socio-demographic characteristics of individuals, such as ancestry, ethnicity, and race.

Extending equation (1), which assesses the migration background ("nativity") gaps in career growth, we run a four-way cross-level interaction between age and age-squared at level-1, migration background at level-2, and a binary metropolitan-level measure of modernization variables at level-3. To create the aggregate

modernization measure, we standardize all six modernization indicators to a mean of zero and a standard deviation of one. We then take the average of these indicators for each metropolitan area in the observed Census years. After aggregating the measure, we create a dummy variable, designating metropolitan areas below the 50$^{th}$ percentile as less modernized in contrast to those surpassing the median. We plot the four-way interaction to illustrate career growth gaps between multi-generational US-born Whites and both immigrant generations in metropolitan areas with either higher- and lower-level of modernization for analytical simplicity.

In the most elaborate models presented, we also fit growth curves for a combined race and ethnicity/ancestry variable, which identifies (a) multi-generational US-born White, (b) Black, and (c) the European country of origin on SEI career progression. We examine whether modernization's influence on inequalities in career progression resembles social cleavages along ethnicity and ancestry. In other words, we test whether historically disadvantaged racial-ethnic groups benefited differentially (either more or less) from modernization.

We group-mean center all level-1 continuous variables (i.e., within-individual and Census-year), which include age, age-squared, and number of children. All six level-3 continuous indicators of modernization are also mean-centered within metropolitan areas. This means that the coefficients for modernization factors can be interpreted as the relationship between changes in modernization within metropolitan areas over time and changes in career growth accounting for secular trends in Census-years. We leave all categorical and dummy variables uncentered to ease the interpretation of the results.

$$\begin{aligned} Y_{tji} = {} & \gamma + \pi\,\text{age}_{tji} + \mu\,\text{age}^2_{tji} + \psi Z_{tji} + \beta\,\text{ancestry}_{ji} + \lambda(\text{age}_{tji} \times \text{age}^2_{tji}) \\ & + \rho(\text{age}_{tji} \times \text{ancestry}_{ji}) + \theta(\text{age}^2_{tji} \times \text{ancestry}_{ji}) \\ & + \sigma(\text{age}_{tji} \times \text{age}^2_{tji} \times \text{ancestry}_{ji}) + \delta C_{ji} + \alpha M_{ti} + \omega_i + u_i + r_{ji} + \varepsilon_{tji}, \\ \varepsilon_{tji} \sim {} & N(0, \sigma^2_e),\ r_{ji} \sim N(0, \sigma^2_r),\ u_i \sim N(0, \sigma^2_u),\ \omega_i \sim N(0, \sigma^2_\omega) \end{aligned} \tag{2}$$

We subsequently fit equation (2) to answer our second and third research questions, regarding ancestry heterogeneity. Here, instead of migration background (as in equation (1)), we use the detailed ancestry$_{ji}$ variable to examine ethnic/ancestry heterogeneity in SEI career growth. $\sigma$ is the coefficient for the cross-level interaction of age and age-squared from level-1, and ancestry from level-2. The two-way interactions between these variables are represented in parameters $\lambda$, $\rho$, and $\theta$. This model addresses research question 3 regarding the explanatory role of modernization for the career growth of specific ancestry groups. In addition, deviating from equation (2), we calculate the marginal effects of migration background on SEI, by ancestry group, using a growth curve model that excludes modernization ($\boldsymbol{M_{ti}}$). This model addresses research question 2 only, regarding the existing variation between the first and second generation of specific ancestry groups vis-à-vis multi-generational US-born men.

## Results

### Descriptive Statistics

Table 2 presents descriptive statistics of Census respondents' early-career class position and career growth indicators by (a) immigration background (i.e., multi-generational US-born, first-generation, and second-generation) and (b) ancestry as measured by the country of origin of respondents and their parents. Statistics are presented for the baseline year (1910) when Census respondents were between ages 19 and 26. While farmer occupations are much less common in metropolitan areas, we still have a considerable number of observations to conduct analyses on the first and second generation, and in some cases for specific ancestry groups. We report these results but prioritize working-class entrants in our analysis.

Among farmer labor market entrants (right-hand side of Table 2), we find that US-born Whites to US-born parents start their careers in higher SEI positions than all first-generation groups and most second-generation groups. With regard to the career *growth* of those starting in the agricultural sector, our key dependent variable, we observe that US-born Whites to US-born parents experience an average career growth of 9.1 SEI. With the exception of the first- and second-generation from Britain, all major European immigrant groups—of any generation—experience greater net career growth compared to US-born Whites with no recent immigration history: their Δ SEI ranges between 9.6 and 22.3 for the first generation and between 9.2 and 14.8 for the second generation.

The picture is slightly different for those who entered the labor market as members of the working-class (left-hand side of Table 2). US-born Whites to US-born parents display an average SEI of 13.6 in the baseline observation, when respondents are 19 to 26 years of age. All immigrant groups enter the labor market at a higher occupational level, with exception of the Irish first-generation and the Italian second-generation. However, almost all first-generation groups fall behind with regard to net career *growth* (Germans form the only exception: Δ SEI of 20.4). There is striking variation with regard to second-generation career growth. Some ancestry groups outperform native-born Whites (e.g., Nordics, Germans, and Irish), whereas other groups display relatively limited career growth (e.g., British, Russian, and Italian).

In sum, several second-generation immigrant groups and some first-generation immigrant groups display *higher average* career growth than multi-generational US-born Whites. Contrary to conclusions drawn by Abramitzky and Boustan (2022), these descriptive statistics reflect the complete career trajectories of major ancestry groups, by generation and initial class position, suggesting relevant ancestry variation in mobility over the life course. Our predictive models will first examine the extent to which these immigrant background advantages in SEI growth hold while controlling for possible confounders of labor market outcomes. These analyses will concentrate on the extent to which the immigrant background differences in career growth can be explained by modernization: the logic of industrialism. We

**Table 2.** Sample Distribution, Early-Career Class Position, and SEI Progression by Ancestry and Generation.

| | | Working-Class Labor Market Entry (1910) | | | | Farmer Labor Market Entry (1910) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Study sample | Frequency | Share of working population[a] | SEI age 19–26 (1910) | Net SEI career growth | Frequency | Share of working population [1] | SEI age 19–26 (1910) | Net SEI career growth |
| **US-born to US-born parents** | | | | | | | | | |
| White | 186,147 | 129,515 | .301 | 13.6 | 14.8 | 56,632 | .131 | 12.6 | 9.1 |
| Black | 9,384 | 7,996 | .703 | 9.5 | 8.1 | 1,388 | .122 | 10.3 | 4.2 |
| Other | 643 | 474 | .312 | 12.8 | 12.4 | 169 | .111 | 10.2 | 8.7 |
| **US-born to foreign-born parent(s)** | | | | | | | | | |
| British | 65,338 | 51,026 | .341 | 14.1 | 13.7 | 14,312 | .096 | 13.0 | 6.8 |
| Nordic | 7,864 | 6,270 | .293 | 13.9 | 16.2 | 1,594 | .075 | 12.2 | 11.5 |
| German | 1,361 | 1,310 | .201 | 14.7 | 20.9 | 51 | .008 | 10.2 | 22.3 |
| Russian | 12,251 | 10,737 | .381 | 13.6 | 14.0 | 1,514 | .054 | 12.3 | 11.0 |
| Irish | 17,721 | 15,098 | .334 | 12.9 | 15.1 | 2,623 | .058 | 11.8 | 11.2 |
| Italian | 3,983 | 3,539 | .344 | 14.2 | 13.7 | 444 | .043 | 13.5 | 9.6 |
| Other | 31,389 | 27,330 | .353 | 13.5 | 16.0 | 4,059 | .052 | 12.2 | 11.1 |
| Second generation | 139,907 | 115,310 | .341 | 13.8 | 14.7 | 115,310 | 24,597 | .073 | 12.7 |
| **Foreign-born** | | | | | | | | | |
| British | 8,496 | 7,491 | .403 | 13.9 | 12.9 | 1,005 | .054 | 11.5 | 7.6 |
| Nordic | 7,956 | 7,301 | .565 | 14.0 | 11.0 | 655 | .051 | 9.9 | 10.0 |
| German | 16,462 | 16,262 | .483 | 15.6 | 20.4 | 200 | .006 | 9.9 | 14.8 |
| Russian | 8,779 | 8,236 | .507 | 13.6 | 11.8 | 543 | .033 | 9.1 | 14.8 |
| Irish | 8,527 | 8,018 | .455 | 13.6 | 14.6 | 509 | .029 | 9.1 | 14.7 |

*(continued)*

**Table 2.** (continued)

| | | Working-Class Labor Market Entry (1910) | | | | Farmer Labor Market Entry (1910) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Study sample | Frequency | Share of working population[a] | SEI age 19–26 (1910) | Net SEI career growth | Frequency | Share of working population [1] | SEI age 19–26 (1910) | Net SEI career growth |
| Italian | 7,676 | 7,507 | .611 | 13.0 | 12.9 | 169 | .014 | 8.5 | 9.2 |
| Other | 42,204 | 39,584 | .628 | 12.4 | 13.3 | 2,620 | .042 | 8.9 | 12.8 |
| First generation | 100,100 | 94,399 | .541 | 13.4 | 14.2 | 94,399 | 5,701 | .033 | 9.5 |
| **Total** | 436,181 | 347,694 | 88,487 | .092 | 10.9 | 88,487 | .092 | 10.9 | 11.1 |

*Notes*. Men ages 19–26 in the 1910 full count Census (birth cohorts 1884–1891). "Farmer" category includes both farmers and farm workers. "Working class" is defined as SEI 3-21. "Middle class" is defined as SEI 22 and higher ($f = 520{,}654$, excluded from the analysis).
[a]Total working population: $N = 956{,}835$ (after selections on age, sex, employment, and occupation SEI).
*Source*. Authors' calculations of the 1910 through 1940 linked MLP Censuses.

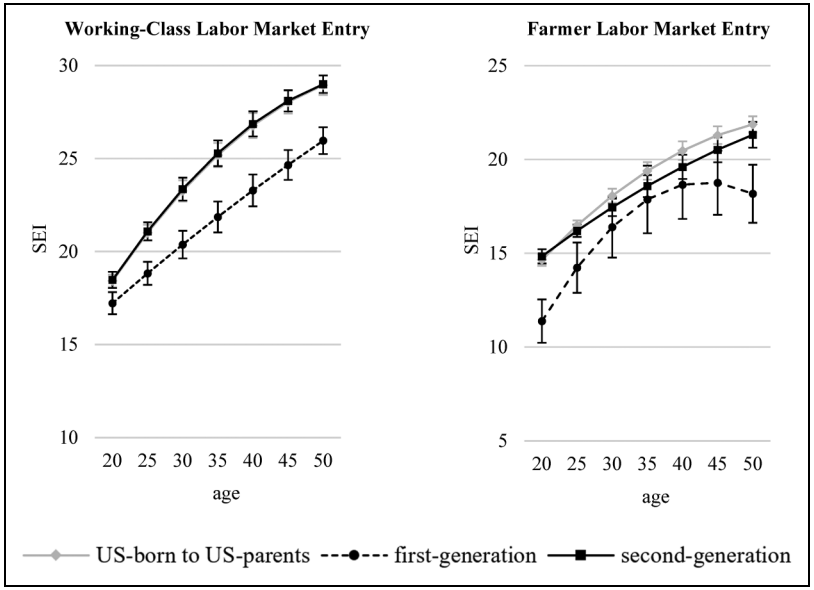


**Figure 1.** Migration background SEI growth curves by early-career class position.
*Notes*. Models include time-variant controls for marital status, number of children, citizenship status, and school attendance. Supplemental Appendix C presents the estimates without control variables. Supplemental Appendix D1 contains all margins. Selection weights applied.
*Source*. Authors' calculations of the 1910 through 1940 linked MLP Censuses ($N = 347{,}694$ person-census observations for working-class labor market entry and $N = 88{,}487$ person-census observations for farmer labor market entry).

then turn to mapping the variation by country of origin, considering ancestry heterogeneity in career growth *within* both the first and second generation. Subsequent analyses will further unpack the previously unexplored role of modernization in the career growth of major European immigrant groups.

*Career Growth.* We first examine whether the net SEI growth gaps between immigrant groups and multi-generational US men hold in predictive models. Figure 1 plots margins from the SEI growth curves (equation (1)) representing parameter $\sigma$, without any level-3 (modernization factors) but including all time-variant sociodemographics.[3] Results are presented by early-career class position; working-class entry and farmer entry. Supplemental Appendix D1 reports the coefficients used to calculate the margins reported in Figure 1.

[3] We refer to age *groups* since we group-mean center age and other time-varying level-1 variables. Appendix C presents the same figure with no individual-level controls, showing only small differences.

Concentrating on men who started their careers in the agricultural sector, we find *no* evidence of superior levels of career growth of immigrant groups in either generation. More specifically, second-generation immigrant SEI career growth appears to fall behind relative to multi-generational US-born Whites, although confidence intervals still overlap. The SEI career growth of first-generation immigrants evidently remains behind both groups in the later stages of the career. Thus, immigrants who arrived in the United States as a child or a young adult, and started in the agricultural sector, are disadvantaged during their careers. The children of these (farmer) immigrants reach statistical parity with their counterparts whose parents were born in the United States, but do not surpass them over the course of their careers.

As shown in the leftmost graph of Figure 1, second-generation immigrants who started their careers in the working-class experienced the same level of career growth when compared to US-born individuals to US-born parents, and significantly greater career growth to the first generation. These findings imply that the assumed career progression advantage of children of European immigrants, relative to White men with US-born parents, is not nearly as widespread as suggested in previous research. Insofar as a "second generation advantage" in career growth exists, these linked Census data suggest that this claim would be somewhat stronger for the second generation with *working-class* career starts rather than in the agricultural sector.

*The Explanatory Role of Modernization.* To what extent do favorable industrial changes and modernization predict the observed career growth variation between second-generation immigrants, first-generation immigrants, and native-born Whites? We next expand on equation (1) in order to examine the extent to which variation in the migration background random slopes in SEI progression can be attributed to unique metropolitan area- and time-specific macroeconomic conditions, as often claimed in theories of modernization and the logic of industrialism. As indicators of modernization are added to the model, we thus assess their explanatory power in accounting for the slope variation of migration background across metropolitan areas—first- and second-generation—vis-à-vis Whites with US-born parents. This is the random slope of the migration background group as expressed as parameter $\omega_i$ in equation (1). We additionally assess the extent to which ascriptive factors of ethnicity, ancestry, and race explain the variance in these random slopes.

Table 3 presents the results of the migration background slope variance analysis for farmer entrants (top panel) and working-class entrants (bottom panel). Model 1 indicates that, compared to multi-generational US-born Whites, the random slopes of SEI career growth for second- and first-generation immigrants contain considerably higher variance across metropolitan areas, regardless of being a farmer or working-class labor market entrant. Compared to multi-generational US Whites, the slope variance is 0.398 for the farmer second generation, 1.988 for the farmer

**Table 3.** Migration Background SEI Slope Variance Explained by Metropolitan Area Modernization and Ethnicity/Ancestry/Race.

| | (1) baseline | (2) + ethnicity /ancestry | (3) + urbanicity | (4) + active labor force | (5) + net domestic migration | (6) + food industry | (7) + production industry | (8) + service sector | (9) + modernization (M3-M8) | (10) + modernization (M3-M8) & ethnicity/ ancestry |
|---|---|---|---|---|---|---|---|---|---|---|
| *ref = US-born to US-parents Whites* | | | | | | | | | | |
| **Working-class labor market entry** | | | | | | | | | | |
| Second generation **(on par)** | 1.018 | .693 | 1.019 | 1.020 | 1.018 | 1.018 | 1.017 | 1.018 | 1.022 | .695 |
| se | (.343) | (.268) | (.344) | (.345) | (.343) | (.343) | (.343) | (.345) | (.346) | (.269) |
| variance explained vs. baseline Δ | | 31.9% | 0.1% | 0.2% | 0.0% | 0.0% | 0.1% | 0.0% | 0.3% | 31.8% |
| First generation **(disadvantage)** | 3.344 | 2.835 | 3.343 | 3.343 | 3.345 | 3.344 | 3.344 | 3.326 | 3.324 | 2.816 |
| se | (1.026) | (1.573) | (1.026) | (1.027) | (1.026) | (1.026) | (1.026) | (1.020) | (1.021) | (1.562) |
| variance explained vs. baseline Δ | | 15.2% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.6% | 0.6% | 15.8% |
| **Farmer labor market entry** | | | | | | | | | | |
| Second generation **(disadvantage)** | .398 | .443 | .399 | .398 | .399 | .393 | .388 | .390 | .387 | .436 |
| se | (.501) | (.481) | (.501) | (.502) | (.502) | (.502) | (.500) | (.500) | (.501) | (.479) |
| variance explained vs. baseline Δ | | 11.5% | 0.2% | −0.1% | 0.4% | 1.2% | 2.3% | 2.0% | 2.6% | 9.6% |
| | 1.988 | 1.389 | 1.993 | 1.983 | 1.988 | 1.991 | 2.006 | 1.996 | 2.002 | 1.397 |

*(continued)*

**Table 3.** (continued)

| | (1) baseline | (2) + ethnicity /ancestry | (3) + urbanicity | (4) + active labor force | (5) + net domestic migration | (6) + food industry | (7) + production industry | (8) + service sector | (9) + modernization (M3-M8) | (10) + modernization (M3-M8) & ethnicity/ ancestry |
|---|---|---|---|---|---|---|---|---|---|---|
| First generation (**disadvantage**) | | | | | | | | | | |
| se | (.794) | (.634) | (.794) | (.793) | (.793) | (.794) | (.798) | (.796) | (.799) | (.638) |
| variance explained | | 30.1% | 0.3% | 0.3% | 0.0% | 0.1% | 0.9% | 0.4% | 0.7% | 29.8% |
| vs. baseline Δ | | | | | | | | | | |

*Notes*. The + sign indicates the variables added to model 1 (baseline). The baseline model includes the interactions of age, age-squared, migration background, and the time-variant controls for marital status, number of children, citizenship status, and school attendance. Suppressed in this table are the between-metropolitan area variance, between-individual variance, and between-Census variance (reported in Supplemental Appendix E). All coefficients are presented in Supplemental Appendix F. Selection weights applied.

*Source*. Authors' calculations of the 1910 through 1940 linked MLP Censuses ($N = 347{,}694$ person-census observations for working-class labor market entry and $N = 88{,}487$ person-census observations for farmer labor market entry).

first generation, 1.018 for the working-class second generation, and 3.344 for the working-class first generation. Each subsequent column (model) in Table 3 adds an explanatory variable to the baseline model and, more importantly, measures the slope variance explained by each combination of explanatory variables.

Examining the working-class labor market entrants in the top panel, Model 2 indicates that considerable variance in the career growth slope of the second generation is explained by the ethnicity/ancestry variable (31.9%), compared to multi-generational US-born White men. This is slightly different for the first generation in the same early-career class position: 15.2% of the slope variance—in this case a slight career growth *disadvantage*—is explained by ancestry (variation). A similar picture emerges from the analyses of farmer labor market entrants (bottom panel). We find that 11.5% of the slope variance of the second generation is explained by ancestry (here an average career growth disadvantage) and 30% of the slope variance of the first generation compared to that of US-born White men.

The six modernization variables are added sequentially in Models 3 through 8. These models exclude the combined ethnicity/ancestry variable. Taken together, results indicate that modernization variables explain little or no variance of career growth random slopes of first- and second-generation immigrants compared to those of multi-generational US-born men. Compared to Model 1, which contains only time-variant socio-demographic controls, the explained variance in the random slopes for immigrant groups compared to White US-born men to US parents is small; around 1% to 3% in either of the panels (i.e., birth cohorts). Even when all six modernization factors are added to Model 9 (still excluding the ancestry variable), we find that only 2.6% of the second-generation career growth slope variance (an average deficit) can be explained by variation in metropolitan-level modernization.

However, when the ancestry variable is added to Model 10, we find that a strikingly higher proportion of the variance is explained for most migration background groups. That is, 31.8% of the working-class entry first generation random slope variance and 15.8% of the working-class entry second generation is explained by ancestry variation. Analysis of farmer entrants displays a slightly smaller variance explained. This underscores the importance of examining career growth variation within and between specific major ancestry groups in addition to the potential role of modernization. We will turn to this exercise in the second half of the results.

We further examine the differences in the career growth of immigrant groups, as well as of multi-generational US men, between metropolitan areas with higher and lower levels of modernization. As explained in the methods section; to do this, we extend equation (1) to run a four-way cross-level interaction (that is, age × age squared × immigrant background × binary modernization). We plot the SEI growth curves in both types of metropolitan areas in Figure 2 below. Similar to the previous analyses, these graphs depict a consistent picture regarding the role of modernization—here simplified in low and high levels of modernization

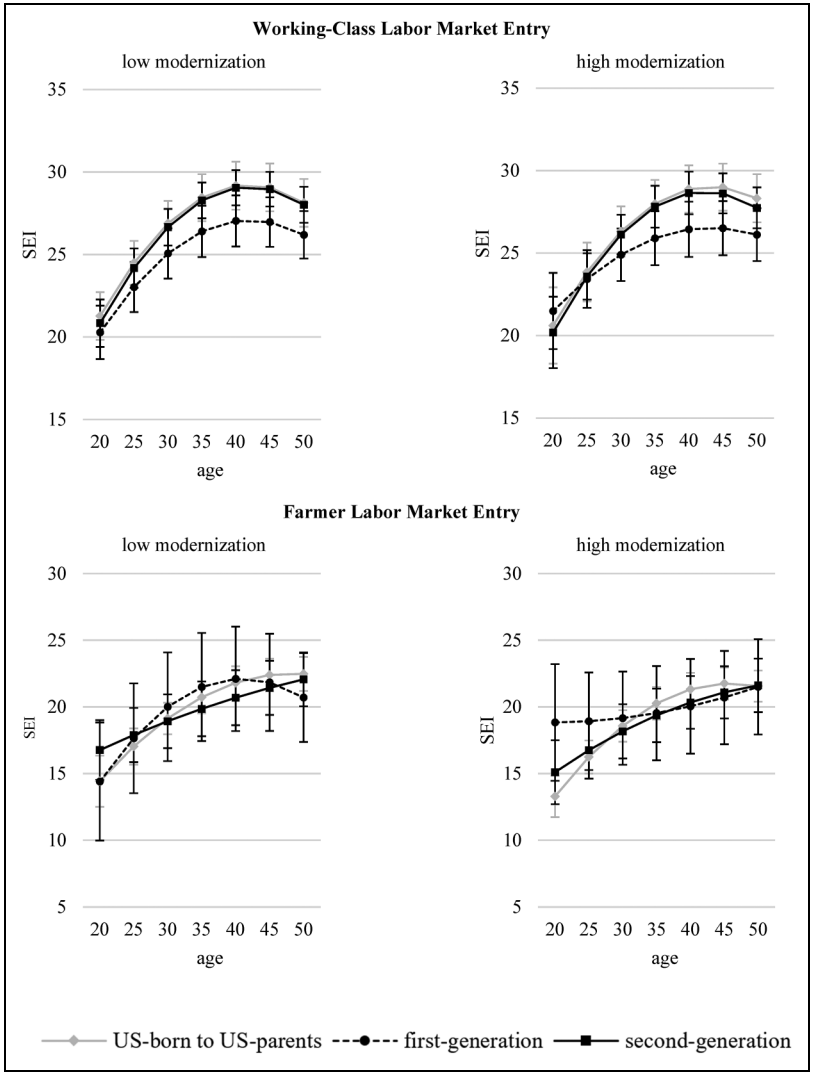


**Figure 2.** Migration background heterogeneity in career growth interacted with metropolitan area modernization.

*Notes.* Low/high modernization is defined by the mean of a composite variable based the metropolitan area's level of urbanization, employment, net domestic migration, production industry, service industry, and food industry (z-scores). See Supplemental Appendix B2 for a version of modernization calculated using factor analysis. Models include time-variant controls for marital status, number of children, citizenship status, and school attendance. Selection weights applied.

*Source.* Authors' calculations of the 1910 through 1940 linked MLP Censuses ($N = 347{,}694$ person-census observations for working-class labor market entry and $N = 88{,}487$ person-census observations for farmer labor market entry).

using z-scores across all modernization indicators.[4] Echoing the results from Models 3 through 8 of Table 3, we find that the slopes for the respective migrant and non-migrant background groups remain *similar* across metropolitan areas with lower and higher levels of modernization. The SEI growth differences in more modernized metropolitan areas are *not* statistically significant.

*Ancestry Variation in Career Growth.* As our provisional conclusions imply that macroeconomic and structural factors rooted in modernization do *not* explain the SEI slope variation in "nativity"—that is, the advantage of second-generation immigrants in intragenerational occupation mobility—we will examine variation along ancestry in greater detail in the following section before revisiting the role of modernization. Which European first- and second-generation immigrant groups experience career growth advantages or disadvantages? Starting with the ancestry variation among farmer entrants, Figures 3 and 4 plot the SEI growth curves for the largest immigrant groups in the late-nineteenth century, while controlling for all socio-demographics. The 30-year growth curves of US-born men to US parents are indicated with grey slopes and diamond markers.

As shown in Figure 3, considerable ancestry variation is apparent among working-class labor market entrants. Descriptive statistics indicated an *average* second-generation advantage, yet these ancestry breakdowns suggest that the steeper SEI mobility is driven by the children of Russian, Nordic, and Irish immigrants only who started their careers in the working-class. The SEI growth curves of these ancestry groups indicate a statistically significant disadvantage relative to their counterparts with no recent immigrant background. We further find that the first-generation immigrants from Germany, the Nordic countries, Italy, and Ireland display a career growth deficit vis-à-vis all native-born groups (striped line and circle markers in Figure 3). Notably, first-generation Russian immigrants who moved to metropolitan areas and first entered the working-class outperformed all other immigrant groups and multi-generational US-born men.

Focusing on Figure 4, displaying the results for farmer labor market entrants only, we find markedly steeper career progression for second-generation Italians and Russians, although the confidence intervals overlap with those of men with US-born to US parents for the latter. Surprisingly, the second generation with parents from Germany remain behind relative to their native-born counterparts with no recent immigration history (grey markers), but are still ahead relative to their respective first generations. In addition, the second generation from Britain who entered agriculture remains on par with the native-born population throughout their entire career. The careers of four out of these six major first-generation groups lag somewhat behind

[4] Appendix B2 presents the same analysis but with a principal components approach to calculating lower or higher levels of modernization, as explained in the note of the appendix. We do not find substantial differences between these approaches.

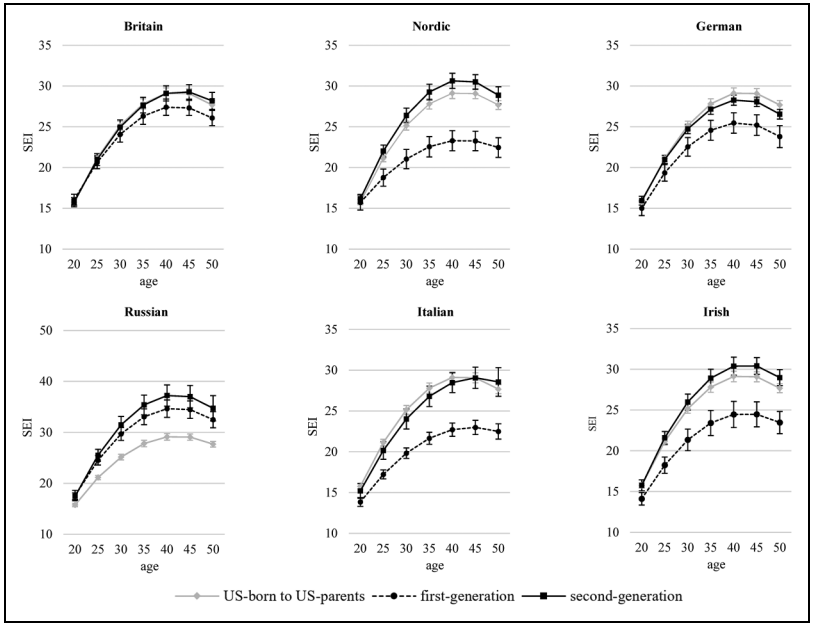


**Figure 3.** Migration background SEI growth curves (individuals within metropolitan areas): working-class labor market entry.
*Notes*. Models include time-variant controls for marital status, number of children, citizenship status, and school attendance. Supplemental Appendix D2 contains all margins. Selection weights applied.
*Source*. Authors' calculations of the 1910 through 1940 linked MLP Censuses ($N = 347{,}694$ person-census observations).

that of multi-generational US White men—as expected. However, a slightly steeper career progression is evident for the first generation from Russia and Britain, which disappears toward the end of the career. Thus, the immigrant career growth of men who entered the workforce as farmers is also highly heterogeneous.

In summary, limited career SEI progression of the first generation (a career growth disadvantage) and steeper career SEI progression of the second generation (a career growth advantage), as described in popular culture and descriptive statistics, contains considerable ancestry variation, which is also stratified by initial class position. Further analysis should clarify whether ancestry variation in the SEI gaps to multi-generational US-born men can be explained by modernization. This would be the "last" possible way in which the logic of industrialism could be of relevance to the immigrant success narrative of the early twentieth century.

*Modernization and Career Growth by Ancestry.* To what extent does modernization predict the observed career growth variation within and between ancestry groups?

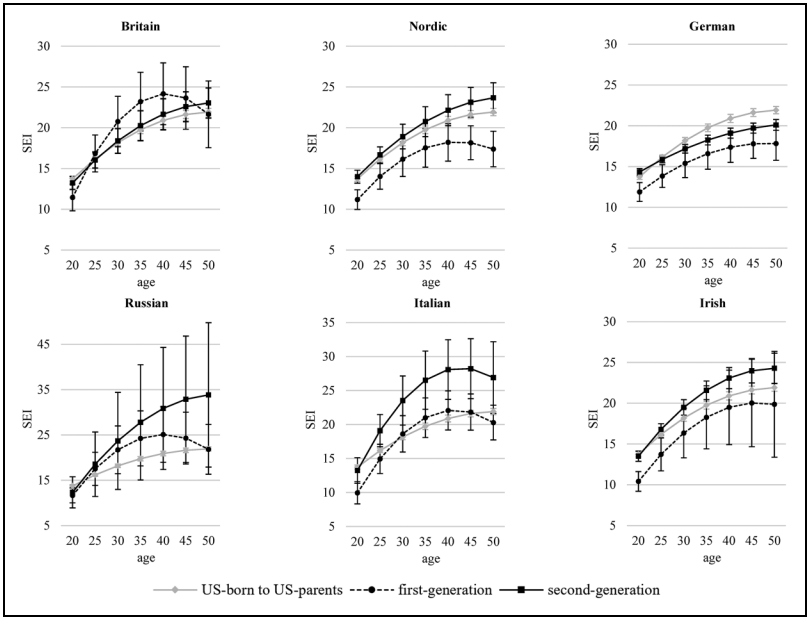


**Figure 4.** Migration background SEI growth curves (individuals within metropolitan areas): farmer labor market entry.
*Notes*. Models include time-variant controls for marital status, number of children, citizenship status, and school attendance. Supplemental Appendix D3 contains all margins. Selection weights applied.
*Source*. Authors' calculations of the 1910 through 1940 linked MLP Censuses ($N = 88{,}487$ person-census observations).

Equation (2) is employed to examine whether career growth variation between immigrant generations and ancestry groups can be explained by metropolitan area macroeconomic conditions. We run separate models in which we contrast both generations of each ancestry group with the native-born Whites with US-born parents (and separately for farmer entrants and working-class entrants). Similar to the migration background models, we assess the explanatory power regarding the random slope variance of migration background—first and second generation—comparing the baseline model with the full model that includes all modernization indicators. The random slope is expressed as parameter $\omega_i$ in equation (2). The variance estimates for some ancestry groups are too small for examining the share explained by modernization (indicated *n.a.* in Table 4) due to a small number of observations of these groups in metropolitan areas.

Concentrating on the upper panel of Table 4—the analysis of working-class labor market entrants—we find that modernization explains 4.2% of the variance in random slope for second generation from Nordic countries compared to the

**Table 4.** Migration SEI Slope Variance Explained by Metropolitan Area Modernization Factors by Ancestry Group.

| | British | | Nordic | | German | | Russian | | Italian | | Irish | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Baseline | Full model | Baseline | Full model | Baseline | Full model | Baseline | Full model | Baseline | Full model | Baseline | Full model |
| *ref = US-born to US-parents Whites* | | | | | | | | | | | | |
| **Working-class labor market entry** | | | | | | | | | | | | |
| Second generation | 2.115 | 2.093 | .629 | .603 | .449 | .453 | 15.884 | 16.183 | 3.100 | 3.033 | 1.373 | 1.379 |
| se | (.906) | (.904) | (1.374) | (1.334) | (.198) | .200) | (11.074) | (11.016) | (3.941) | (3.911) | (.799) | (.798) |
| variance explained vs. baseline Δ | | 1.0% | | 4.2% | | 1.0% | | 1.9% | | 2.2% | | 0.4% |
| First-generation | .945 | .951 | 1.520 | 1.533 | 1.430 | 1.436 | 26.954 | 26.722 | 2.115 | 2.095 | 1.999 | 1.965 |
| se | (.964) | (.980) | (1.640) | (1.662) | (.591) | (.589) | (7.776) | (7.715) | (1.258) | (1.258) | (1.535) | 1.523) |
| variance explained vs. baseline Δ | | 0.6% | | 0.9% | | 0.5% | | 0.9% | | 0.9% | | 1.7% |
| **Farmer labor market entry** | | | | | | | | | | | | |
| Second generation | .560 | .530 | 1.850 | 1.810 | .190 | .190 | 4.730 | 4.610 | *n.a.* | *n.a.* | 1.760 | 1.740 |
| Se | (1.110) | (1.200) | (1.500) | (1.500) | (.390) | (.390) | (14.780) | (14.800) | | *n.a.* | (1.630) | (1.630) |
| variance explained vs. baseline Δ | | 6.0% | | 2.0% | | 0.0% | | 3.0% | | *n.a.* | | 1.0% |
| First generation | 8.880 | 8.910 | *n.a.* | *n.a.* | *n.a.* | *n.a.* | 57.210 | 57.270 | 7.740 | 7.690 | 4.350 | 4.480 |
| se | (6.340) | (6.350) | | *n.a.* | | *n.a.* | (35.620) | (35.600) | (9.030) | (9.050) | (6.460) | (6.550) |
| variance explained vs. baseline Δ | | 0.0% | | *n.a.* | | *n.a.* | | 0.0% | | 1.0% | | 3.0% |

*Notes*. The baseline model includes the interactions of age, age-squared, migration background, and the time-variant controls for marital status, number of children, citizenship status, and school attendance. The full model includes all modernization variables: urbanicity, active male labor force, net domestic migration, food industry, production industry, and service sector. Variance estimates for first-generation Italians and second-generation Nordics and Germans, among farmer labor market entrants, are too small for examination of the share explained by modernization. This is due to a small number of observations of these groups in metropolitan areas. Selection weights applied.

*Source*. Authors' calculations of the 1910 through 1940 linked MLP Censuses. Model sample sizes (person-census observations): British (working-class = 152,631, farmer = 59,764), Nordic (working-class = 143,086, farmer = 58,881), German (working-class = 188,032, farmer = 71,949), Russian (working-class = 147,087, farmer = 56,883), Italian (working-class = 154,639, farmer = 57,970), Irish (working-class = 155,073, farmer = 58,993).

US-born Whites. The explained slope variances of all other immigrant generations and ancestry groups (after adding all modernization variables) are either smaller or remain on par with the overall migration background slope variance explained (see Table 3). A similar picture appears from the bottom panel of Table 4 which presents results for farmer labor market entrants. Adding modernization factors to the model explains 6% of random slope variance in SEI growth of second-generation British men compared to US-born Whites, but these remain considerably smaller for all other immigrant groups. In summary, we conclude that variation in metropolitan-level modernization factors explains very little of the variance in the random slopes for particular ancestry groups who started at the bottom of the occupational hierarchy (as farmers or members of the working-class).

*Robustness Checks.* We refer to Supplemental Appendices D1, D2 and D3 for sensitivity analysis of the migration background margins and the ancestry margins of SEI (growth). One series of checks involves models that add 1910–1940 attrition weights to the model (instead of population/selection weights), which were built by the researchers using socio-demographics: sex, age, marital status, race, ethnicity, citizenship, place of birth, father's place of birth, mother's place of birth, SEI, enrollment, and metropolitan area. These weights could correct for selective attrition that explains not filling out an SEI in a Census year after the 1910 baseline (e.g., due to unemployment, death, and international migration). As shown in these tables, there is virtually no difference between the estimates of the main analysis and those that add the attrition weights.

For the migration background marginal effects by ancestry, we include an alternative definition of ancestry: by paternal lineage only. The main analysis is based on the dominance approach, which means that ancestry is measured by the country of birth of *either* parent. While not the focus of this study, it could be argued that the operationalization of ancestry by paternal lineage provides a closer approximation of labor market discrimination against immigrants based on last names, as previously examined in sociological research (Alba and Nee 2005; Goldstein and Stecklov 2016). However, results indicate near similar marginal effects for all ancestry groups.

## Conclusion

We examine two interrelated questions about migration background and ancestry inequality in career mobility during the early twentieth century. First, modernization is believed to equalize opportunities across social groups and to disproportionally advance the career progression of immigrant groups and racial-ethnic minorities. Second, we examine whether career growth varies across European ancestry backgrounds. Furthermore, this study is the first to use full-population historically linked Census data to examine *intragenerational* mobility. This allows us to improve on earlier studies that relied on cross-sectional surveys for post-War

decades and small surveys on career growth in specific areas or towns as analyzed by economic historians.

Our findings clearly indicate that variation in modernization-triggered economic growth during the early twentieth century *remains statistically independent* from slope variation between immigration background groups and multi-generation US men in terms of their career growth. This contradicts the idea that the modernization of metropolitan areas contributed to either equalization or inequalities between immigrant and non-immigrant groups. Analytical models that control for additional time-variant factors indicate that children of immigrants experience similar career progression as compared to US-born men with no recent migration history. First-generation immigrants experience more moderate SEI career growth, which on average falls behind that of native-born men (Figure 1).

Furthermore, only a very small share of variation in "migration background" SEI slopes can be explained by the varying levels of modernization of the metropolitan areas in which immigrants settled. Thus, the relative size, growth (or decline) of employment opportunities in food, construction, and service industries, migration (net population growth), and the hallmark of modernization—urbanization—do not explain a noteworthy share in random slope variance of first- and second-generation immigrants. A further breakdown *by ancestry group* also suggests a negligible role of modernization. This finding challenges the popular claim that European immigrant groups enjoyed steeper career growth in the early twentieth century as a function of a unique favorable economic opportunity structure in the areas where they settled.

Based on the analysis of longitudinal data, we argue that the advantages or disadvantages in career growth, as experienced by some immigrant groups, are unlikely to be explained by macroeconomic opportunity structures. The modernization that took place during the late-19th- and early-twentieth-century may have contributed to the migration to the United States, which likely boosted their life chances. However, these modernizing contexts presumably *did not equalize* opportunities. Instead, the variation in career growth of immigrant groups appears to be largely driven by individuals' ethnicity (i.e., ancestry) in combination with their early-career class position. Our argument that ethnicity and ancestry as socially and politically constructed status groups are the primary stratifiers of occupational mobility, is grounded in the results from SEI slope variance models and the country of origin-specific SEI growth curves. We find that the combined race and ethnicity/ancestry variable explains about one-fifth to two-fifths of the total variance in the slopes of first- and second-generation immigrants in comparison with US-born Whites to US parents. In other words, we are able to explain considerably more variation in the SEI slopes of immigrant groups as soon as we account for their ancestry ("ethnicity").

After adding time-variant control variables, we find that the career progression of several first-generation groups falls behind that of White US-born counterparts, while second-generation immigrants are on par with the native-born reference group (Figure 1). Our finding is therefore only partly in line with research concluding that having an immigrant background bears little disadvantage in economic outcomes

in the early twentieth century (Abramitzky and Boustan 2022; Catron 2020). Our study further shows that the "immigrant success" narrative ignores considerable ancestry heterogeneity as well as the critical importance of early-career class position: agriculture versus the working-class. More specifically, the career progression of both first and second generation is far from uniform. The growth curves of some ancestry groups within the first generation are significantly *steeper* when compared to the native-born, while growth curves of some ancestry groups within the second-generation immigrant groups *lag far behind* those of native-born groups.

When concentrating on career growth as an indicator of economic success rather than average SEI or intergenerational mobility, the "immigrant advantage" appears far from equally distributed and, importantly, is concentrated in some immigrant groups. For example, the careers of children of Russian and Italian immigrants outperform those of members of other ancestry groups and multi-generational native-born men. Furthermore, among working-class entrants, the career growth of Russian first- and second-generation exceeds that of all other immigrant groups. Some first-generation Irish immigrants and children of Irish immigrants also display steeper SEI growth curves. It is important to note that these ancestry disparities in career growth can only be evidenced with data on the full occupational trajectories of individuals, such as in linked Census data.

Taken together, our results imply that during the age of mass migration, both class position and ethnic cleavages, rather than (unique) conditions of modernizing metropolitan areas, shaped immigrants' career mobility prospects. This finding corresponds to some degree with recent research on today's *intergenerational* mobility patterns, which also appear to be partially rooted in geographical ancestry patterns (e.g., Berger and Engzell 2019). In addition, in so far second-generation career growth advantages existed in the early twentieth century, these were concentrated among children of Irish, Italian, and Russian immigrant families, *despite* anti-immigrant sentiments that were often targeted at Catholics and Jews in the first decades of the twentieth century (Goldstein and Stecklov 2016; Portes and Rumbaut 2014). We believe that the career growth variation along with ancestry and class position is more than caveats to recent upbeat conclusions regarding second generation "success" (Abramitzky and Boustan 2022). In fact, both dimensions reflect persistent social boundaries that affect immigrant mobility chances both in the past and today.

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## Supplemental Material

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