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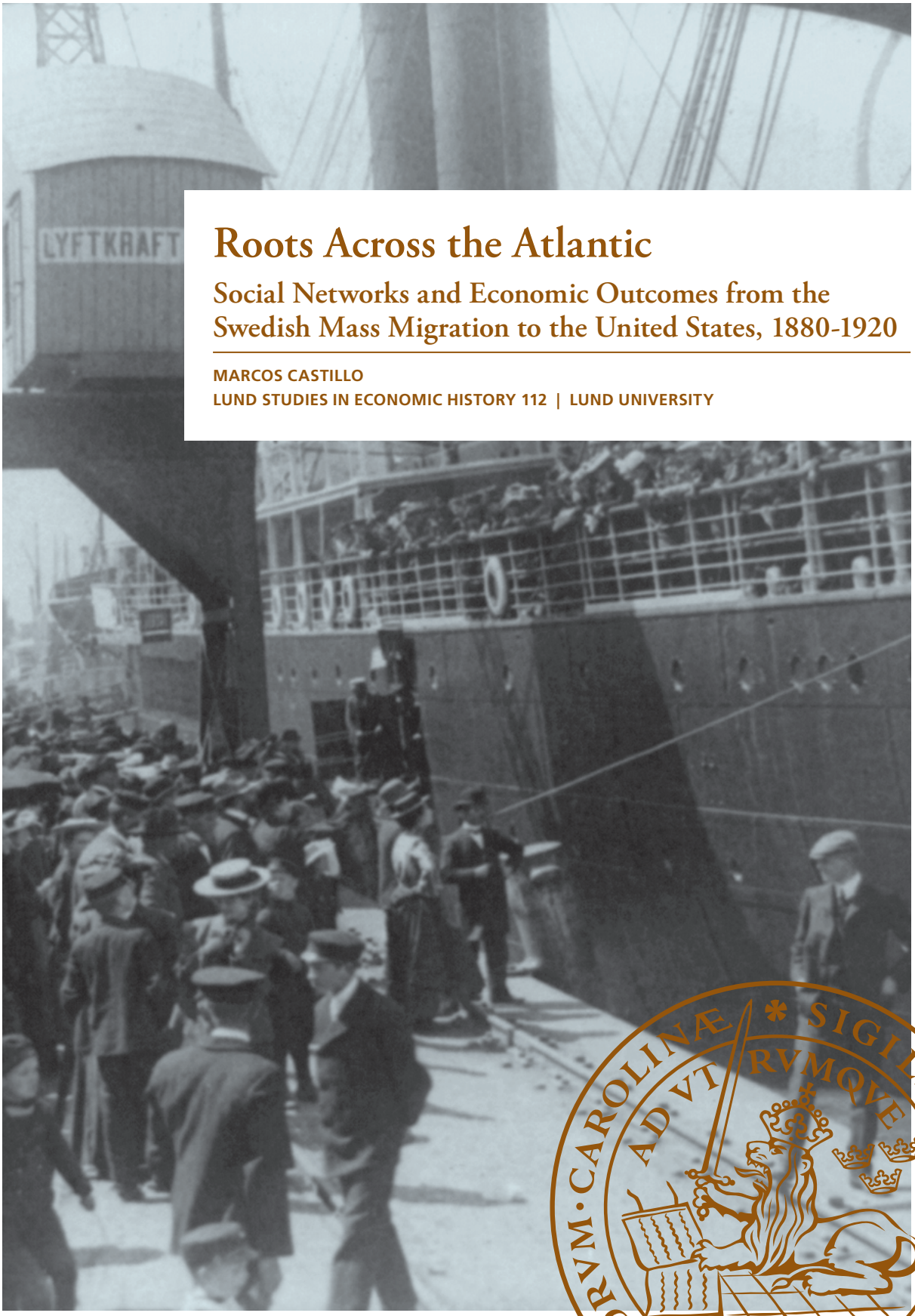

Roots Across the Atlantic

Social Networks and Economic Outcomes from the Swedish Mass Migration to the United States, 1880-1920

MARCOS CASTILLO

LUND STUDIES IN ECONOMIC HISTORY 112 | LUND UNIVERSITY

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Marcos Castillo

LUND UNIVERSITY

DOCTORAL DISSERTATION

Doctoral dissertation for the degree of Doctor of Philosophy (PhD) at the School of Economics and Management at Lund University to be publicly defended on Friday, September 27th at 10.00 in EC3:211.

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Title and subtitle: Roots Across the Atlantic: Social Networks and Economic Outcomes from the Swedish Mass Migration to the United States, 1880-1920.

Abstract:

The migration of large populations has had significant importance on historical and contemporary societies. Since mass migration is a multifaceted phenomenon that significantly impacts both places of origin and destination, shaping the lives of those directly and indirectly involved, it has drawn extensive research attention. Much of the economic history literature has focused on the Age of Mass Migration, particularly European emigration to the New World. Early studies primarily used aggregate data to explore migration dynamics concerning, the determinants of migration and the assimilation of immigrants in the receiving society. However, aggregate data many times can fall short of explaining migration dynamics because it does not show the differences between groups of migrants. However, recent research utilizing micro-level data s enabled new research questions to be asked.

This dissertation contributes to the existing literature by exploring the migration of Swedish immigrants to the US during the peak years of emigration. It utilizes newly digitized micro-level data and record-linking techniques to trace individuals from their parental households in Sweden to adulthood, whether they remained in Sweden or emigrated to the US. By comparing Swedish migrants with stayers of similar backgrounds, the research offers insights into the potential outcomes that male and female immigrants might have experienced had they remained in Sweden. Sweden, one of the countries with the highest sending country to the US, underwent significant transformation during this period, offering a valuable context for study.

The dissertation specifically focuses on how family migration patterns affect the risks of emigration, as well as how was economic assimilation of immigrants. In four papers, this dissertation provides a view of key aspects of the Swedish emigration experience. Although the importance of family and friends encouraging migration was known, this dissertation shows evidence of how siblings, and even extended kin, who emigrated, increased the likelihood of relatives migrating. In addition, this study shows that both men and women benefitted greatly from the migration decision, with potentially even higher gains for women who worked in domestic service. Finally, it shows how migrant networks could have positive effects on the economic assimilation of recently arrived immigrants.

Key words: migration, migrant networks, social mobility, human capital, record linkage, social class, returns to migration, occupations, gender

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Coverphoto by Underwood & Underwood. (ca. 1905) *Farewell to home - emigrants bound for England and America - on steamer at Göteborg, Sweden*: Underwood & Underwood, Publishers. [Photograph] Retrieved from the Library of Congress, https://www.loc.gov/item/92516543/.

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Acknowledgments

I remember the first dissertation I opened as a PhD student; it was from one of my supervisors, Björn Eriksson. I started reading the acknowledgments, thinking, “Oh, one day I might be writing my own acknowledgments section in my dissertation.” And now the moment has arrived. Although I am tired from all the work on this dissertation in the last couple of weeks (and months and years), I am very glad to finally take the time to thank all the people who made this possible for me. And if you are a PhD student reading this for some reason, I suggest you start writing the acknowledgments months in advance, you don’t want to forget anyone!

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something?" moments, even though most of the time, we both knew we could ask each other. I'll always be grateful to Fate (Anneli) for putting us in the same office. Danny, you were not just fantastic company during these years, but you also helped me so many times to get back on track when I wasn't feeling well. I know you often avoided asking me about the PhD during my free time because you didn't want to "trigger" me, but I'm glad we could still laugh about some of the situations I got myself into while working on it. Malu, although you weren't physically present as much as Louise and Danny, and we had our periods of radio silence, we always knew we'd eventually reconnect. You are the friend I've known the longest in my life, and it's amazing to think how much our lives have changed since we first met. Thank you for your support and for bringing so much laughter into my life over the years.

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List of Papers

I. Kinship and Opportunity: Swedish Chain Migration to the United States, 1880-1920. *(together with Martin Dribe and Jonas Helgertz) Submitted.*

II. The Land of Opportunity? Social class, returns to migration, and occupational mobility of Swedish immigrants during the Age of Mass Migration 1880-1910. *Submitted.*

III. So long, Sweden: Occupational attainment of Swedish male and female migrants in the United States at the turn of the 20th century.

IV. The Role of Migrant Networks on Economic Outcomes During the Age of Mass Migration: Swedish immigrants in the U.S, 1900-1920. *(together with Jonas Helgertz) Submitted.*

For the co-authored papers, the framing and writing of the papers were done jointly, while the statistical analyses were done by me.

Introduction

Motivation and Aim

The period between 1850 and 1930, often called the Age of Mass Migration, marked the most significant episode of voluntary migration in the world, involving the movement of over 50 million individuals. During this era, long-distance mass migration occurred at an unprecedented rate, with the bulk of the quantitative research focused on the migration of people from Europe to the United States (US). Sweden became one of the countries with the highest emigration rates to the US, as it is estimated that over a quarter of the population emigrated during this period (Carlsson, 1976).

This historical era has triggered a vast amount of literature, as mass migration is a multifaceted phenomenon that significantly impacts both places of origin and destination, shaping the lives of those directly and indirectly involved. A significant portion of the quantitative research on international migration from that period has concentrated on analyzing the rise and fall of mass migration (Hatton, 2010; Hatton & Ward, 2024). This research delves into understanding the causes of emigration, the demographic characteristics of migrants, factors influencing its acceleration or deceleration, changes in host and sending societies, migrants' experiences in the host country, and variations across immigrant groups.

Because of migration's inherent diversity and multifaceted nature, it has been challenging to explain using a single theoretical framework (Arango, 2000). Adding to this challenge is the scarcity of empirical data to test many hypotheses. Analyses using aggregate data can fall short in explaining certain migration dynamics, as the unit of analysis is too large to capture important variation across individuals. Even when using a unit of analysis as small as a village, significant differences may exist among households or even within individual households (Baines, 1991). Recent studies, leveraging new sources and data, have contested long-standing beliefs, such as the notion that migrants were inherently positively selected or that immigrants uniformly assimilated positively (Hatton & Ward, 2024). Much of this research has been conducted on immigrants to the US, where the policy of open borders for migrants from Europe has offered great opportunities to test a range of relevant hypotheses (Abramitzky et al., 2012). Among the many empirical challenges faced in migration studies comes the fact that migration is a selective process, where emigrants rarely constitute a representative sample of the population they come

from (Massey et al., 1993). This fact represents a significant hurdle in drawing accurate conclusions from migration research.

This dissertation contributes to the literature by examining the processes of selection and assimilation among Swedish immigrants to the US during the Age of Mass Migration. While emigrants across European nations were motivated by improved living standards in the destination, facilitated by diminishing costs of transatlantic travel and open border policies (Keeling, 1999), the experience of Swedish emigrants is relevant in their own right. Sweden stood out as one of the most prolific sending countries in Europe, with over a million individuals between 1860 and 1930, constituting roughly a fifth of its population (Carlsson, 1976). This migration occurred against the backdrop of Sweden's increasing prosperity, with the determinants behind emigration being diverse and evolving over time (Schön, 2010).

The process of identifying the characteristics of those who decided to emigrate is intrinsically linked to the prediction of how individuals will fare in the host country. Early debates on immigrant assimilation emerged due to disparities in the presumed "quality" of various immigrant waves (Borjas, 1985; Hatton, 2010). In this context, information from the place of origin of individuals plays a central role, serving as a critical step not only in testing specific hypotheses but also in exploring the heterogeneity in migration effects.

A vast literature has explored questions about the economic assimilation of migrants and the determinants of emigration. Overall, it has been shown that there were heterogenous effects on the assimilation into the labor market depending on the country of origin (Abramitzky & Boustan, 2017; Abramitzky et al., 2014). However, largely missing are studies estimating rates of return to migration historically, with Abramitzky et al. (2012) being the only exception. In addition, the economic outcomes of immigrant women have been largely absent from the empirical literature.

Moreover, it has been shown that economic differences in real wages cannot explain all of the emigration flows, as other factors intervened such as the "family-and-friends" effects (Bredtmann et al., 2020; Connor, 2019; Gold, 2005; Wegge, 1998). Micro-level studies studying migrant network processes are relatively scarce but have become more prevalent in the last decades (Connor, 2019; Eriksson, 2020; Wegge, 1998, 2008).

Entirely new aspects of the emigration process and outcomes have become possible to examine thanks to the digitization of historical databases, including full-count censuses and emigration and death registers, and the development of record-linking techniques (Hatton & Ward, 2024). The resulting large-scale longitudinal individual-level data has opened an entirely new research frontier, some of which is explored in this dissertation, disentangling the complexity of migration dynamics at a micro-level, during this transformative period in history.

The four papers in this thesis answer three research questions. First, to what extent did the emigration of close relatives influence an individual's decision to emigrate? Individuals from all social classes and regions in Sweden migrated to the US; however, emigrants were disproportionally drawn from certain social classes and regions of origin. Dribe et al. (2022) found that migrants were selected from the middle classes in terms of socioeconomic background. Poverty could have prevented many individuals from the lowest social classes from migrating, as the costs of migration were considerable. Beyond the neoclassical theories of migration, this dissertation focuses on the role of family networks on the individual's own migration behavior. Several micro-level studies have shown that the costs of migrating were eased by the presence of migrant networks (Wegge, 1998, 2008), a result also found in a study for a Swedish county (Eurenius, 2020). I focus on how migration was perpetuated by former migrants from the same parish. Paper I primarily deals with this research question.

The second research question deals with the economic assimilation of immigrants in the US. More specifically, how did the Swedish immigrants fare in the US in terms of economic outcomes compared to stayers in Sweden? Considering that a primary motivation for migration was the quest for better economic outcomes, it is relevant to analyze how the individuals fared in the labor market of the destination country, a process called assimilation. Previous research has explored how Swedish immigrants assimilated in the US compared to other immigrant groups and the native-born population, finding that upon arrival immigrants faced lower earnings than natives, but over time their earnings would grow at a similar rate as natives, meaning that the gap never closed (Abramitzky et al., 2014). Furthermore, this penalty has not been observed for the second-generation (Rooth & Scott, 2012).

I, however, do not study the assimilation of Swedes compared to other groups in the US. Instead, considering Sweden's industrialization and improved living standards during the period, I am interested in studying how the economic outcomes of the immigrants were compared to stayers. Seeing immigration as a human capital investment, the economic gain obtained by migrating can be considered to be the returns to migration (Sjaastad, 1962). Abramitzky et al. (2012) estimated rates of return for male Norwegian immigrants in 1900 by comparing the occupational earnings of migrants with that of their brothers in Norway, with so far, no examination of other immigrant groups. Following a similar approach, in Paper II, I estimate rates of return by social class of origin, as well as delving into what mechanisms could be driving the results. For women, the literature on economic outcomes is scarce, because of their relatively short time in the labor market and the underreporting of occupations (von Berlepsch et al., 2019). Given the large proportion of women who worked in domestic service and the lack of individual-level wage data, estimating a rate of return is not as meaningful as for men, since it would be driven by one occupation. Instead, I look at the occupational profiles of

migrants and stayers in Paper III and discuss the rate of return for women with the support of auxiliary qualitative sources.

The third, and final, research question again deals with the role of migrant networks, but in the destination, asking what was the role played by migrant networks for the occupational earnings of Swedish immigrants? The existing literature on the impact of migrant networks on economic outcomes presents mixed findings in contemporary settings, and there is a limited number of studies using micro-level data in historical contexts. An exception is Eriksson (2020), which examines Norwegian immigrant enclaves and their economic outcomes. Paper IV deals with this question by defining migrant networks at different geographical levels and by the country of origin of the immigrants.

Limitations

This dissertation covers the most important period of the Swedish mass migration to the US in terms of magnitude of flows, however, it does not cover the entirety of the mass migration period between 1850 and 1930. Swedish mass migration was the most volatile and concentrated in three specific periods of emigration (more on this in the Economic Historical Context section). This dissertation covers two of the periods of intense migration: the peak of the mass migration period in the 1880s and 1890s, and the migrations at the start of the 20th century. The other period of intense migration was the first spike of mass migration at the end of the 1860s, which differed from the following ones as it was characterized by a predominance of push factors and family migration (Carlsson, 1976; Thomas, 1941). Because of the absence of digitized Swedish censuses before 1880, I decided not to study that first migration spike. The years covered in this dissertation, besides their importance because of the magnitude of the migrant flows during these periods, are of great relevance as the determinants of migration were more varied than in early emigrations, providing a valuable context to study migration dynamics. Furthermore, the individual-level approach of this dissertation is then more suitable for the latter migration streams which were characterized by young unmarried individuals driven by labor opportunities. The findings of this dissertation would likely have differed for the first mass migration spike, considering the importance of the friend-and-family effects expected to have become stronger for the latter migrant waves when a community of Swedes had been established in the US.

Among the most important data sources for this dissertation is the Swedish emigrant register EMIBAS (more on this in the Data section). Although this data source includes the majority of the emigrants, it has not been completely digitized. Compared to official statistics (BiSOS), EMIBAS covers about 95 percent of all immigrants until 1895, thereafter covering around 60 percent. This underreporting,

however, is unlikely to represent a threat to the findings of this dissertation, as the missing observations can be best described as random (Dribe et al., 2022), for example, not by the socioeconomic characteristics of the emigrants.

A key outcome in this dissertation is the examination of the labor market outcomes of the Swedish emigrants to the US. Since level income data was not available either in Swedish or US sources for this period, research on economic outcomes has typically relied on occupational earnings (see Abramitzky et al. (2012); (Abramitzky et al., 2014)). These earnings are estimated as the average earnings for each occupation following a variety of local samples and surveys. An issue can arise if there are important differences in the wages of individuals in different labor markets, particularly in large regions such as the US. To deal with this limitation, I use a variety of occupational earnings to perform the analyses and show that the findings do not depend on the choice of data.

Contribution

The mass migration process from Sweden occurred during a period of significant structural transformation. By utilizing micro-level data, this dissertation provides empirical evidence that helps disentangle dynamics previously explored only through aggregate data. This approach offers a fresh perspective on established facts and allows for the testing of economic theories. Because of the complexity of emigration, the study of some theories ultimately becomes an empirical challenge, addressed here with high-quality data from Sweden and the US. The findings of this dissertation enhance our knowledge particularly concerning the economics of migration and the role of migrant networks. These results are historically significant and contextually valuable, as the US had a policy of open borders for Swedes during the period of study (Norman, 1976a).

A key contribution lies in the estimation of returns to migration, employing an empirical strategy that reduces the influence of migrant selection. The approach compares immigrants with their brothers who stayed in Sweden, offering valuable insight into the benefits associated with the decision to migrate. The obtained average rate of return, standing at an impressive 80 percent, underscores the exceptional nature of transatlantic migration as a way to obtain substantial returns. This becomes even more noteworthy when compared with the much lower rate of return (approximately 25 percent) observed for rural-urban migration within Sweden.

Furthermore, this research provides a meaningful point of comparison to the rate of return obtained by Abramitzky et al. (2012) of Norwegian immigrants. The results for the year 1900 exhibit a striking similarity, with slightly higher rates for Swedish immigrants. Furthermore, I go beyond the average rate of return and explore

heterogeneities in the returns by social class, adding another layer of depth to the analysis, aligning with the Roy/Borjas model (Borjas, 1987) finding that immigrants from the lowest social classes attain the highest rates of return. Beyond mere quantification, the paper delves into the mechanisms driving these returns. The findings reveal that the primary driver was the higher real wages in the US rather than occupational mobility among migrants.

The estimation of the returns to migration provides several insights into the assimilation process. For instance, by disentangling the mechanisms behind the returns to migration, and exploring the occupations held by migrants and stayers, it is possible to also comment on the relative occupational mobility happening in Sweden and the US. The results align with Berger et al. (2023) in which Sweden was shown to experience similar social mobility compared to the US during this period. Furthermore, the findings go in line with the assimilation of Swedes compared to the native-born in the US labor markets, as Abramitzky et al. (2014) find that Swedes experienced occupational upgrades but never reached the native-born levels.

Secondly, this dissertation contributes by estimating returns to migration for women. The examination of the economic outcomes of women has been noticeably absent in scholarly discussions, primarily due to the underreporting of female occupations and the low labor force participation, particularly for married women. This gap is also seen in the recent wave of research using individual-level linked data (see (Abramitzky et al., 2012); Abramitzky et al. (2014); Collins and Zimran (2023)), where women are typically not included in the analysis because of the low matching rates that can be achieved as women change last name after marriage. Unlike the case for men, estimating a rate of return to migration for women is less meaningful due to the substantial proportion working in domestic service. In the absence of individual-level data on earnings, using occupational earnings and estimating a rate of return would be disproportionately driven by this occupation, as the occupational earnings have no variation for the occupation. Paper III shows that immigrant women were heavily engaged in domestic service, similar to stayers. However, migrants predominantly worked in urban areas where wages were significantly higher than in Sweden. Moreover, by exploring wages for domestic servants in the US compared to Sweden, this dissertation provides a possible return to migration for Swedish female immigrants. In addition, the wage data is expressed for different regions in the US, showcasing the variety of wage levels geographically. The findings suggest that migrant women likely experienced substantial economic returns, potentially surpassing those of men.

Furthermore, within the context of Swedish economic history, I argue that emigration to the US played a key role in the decline of domestic service in Sweden during the first half of the 20th century. This finding highlights the need to acknowledge the significant impact of migration on economic trends, particularly in understanding the shifts in occupational dynamics within Sweden. Moreover, the

findings of Paper III contribute not only to debates on economic conditions but also to social aspects related to independence and the work of women, adding to the work of Lintelman (1989, 1991) and Vikström (2004) on migration as a tool for independence. The findings also suggest that there was an unsatisfied demand from those who wanted to emigrate, and the existence of chain migration determined who could emigrate more than other economic conditions. Moreover, residence close to other Swedish immigrants likely improved economic conditions in the US, as they could have better knowledge of which houses provided better conditions for domestic servants, effectively giving women the opportunity to experience upward mobility by having a "career" in domestic service.

Moreover, this dissertation makes contributions to research on migrant networks in two distinct ways. Firstly, it shows robust chain migration dynamics. Building upon the work by Eurenius (2020) and employing a nationwide sample, Paper I reveals that the emigration patterns of siblings, particularly older ones, have a substantial influence on an individual's likelihood of emigrating. Furthermore, this influence extends to extended family members within the same parish, highlighting the relevance of networks, especially in counties lacking a strong tradition of emigration. In this aspect, the contribution of the dissertation relates to the nature of chain migration and the particular importance of chain migration in areas where there was no tradition of emigration. The contribution of these papers follows the findings of Wegge (1998, 2008) for German immigrants, as well as Connor (2019) for Irish immigrants in the US during the Age of Mass Migration

Beyond the exploration of chain migration dynamics, this dissertation further advances network theory by showcasing the positive impact of close networks on economic outcomes. There are no consistent findings on the role of migrant networks on economic outcomes in contemporary settings (Blumenstock et al., 2023; Munshi, 2003, 2020), and in historical settings the research is scarce. In Paper IV, we demonstrate that residing in close proximity to individuals from the same country is associated with higher occupational earnings. Notably, the results also show that the percentage of individuals from Sweden or Scandinavian in the county of residence is linked to lower occupational earnings, aligning with the findings of Eriksson (2020) for Norwegian immigrants in the US. However, these findings suggest that measuring migrant networks at large geographic units such as counties might not represent the most effective way to explore network dynamics. Moreover, we argue that the use of continuous measurements to define migrant networks might hide non-linearities in the relationship between economic outcomes and the share of immigrants from the total population.

Economic-Historical Context

The Swedish and the US Economic Development during the Age of Mass Migration

Between 1850 and 1940, Sweden and the US experienced significant economic transformations, but their trajectories differed due to various factors, including industrialization, immigration, and geopolitical events (O'Rourke & Williamson, 1999; Stanfors & Goldscheider, 2017).

In the mid-19th century, Sweden was primarily rural, with a large portion of the population engaged in agriculture (Thomas, 1941). Around the 1850s the internal and external liberalization of trade caused rapid growth in Sweden (Schön, 1997). Furthermore, the introduction of mandatory schooling had positive effects on the literacy and proficiency of the population, leading to a comparatively high level of human capital. Sandberg (1979) described Sweden as being "impoverished sophisticate". Additionally, Sweden maintained political stability during this period, avoiding major conflicts and wars that could disrupt economic development, unlike many European countries (Schön, 2010).

In the second half of the 19th century, Sweden underwent a gradual process of industrialization. Although the exact breakthrough of industrialization is argued among scholars, the majority place it in the 1860s and 1870s. Sweden's industrialization was characterized by the expansion of the sawmill industry, assisted by the construction and improvements of railways and waterways (Thomas, 1941). Although already a leader in the iron industry, the late 19th century saw the development of steel and iron production, as well as paper and textile manufacturing (Schön, 2010). From the 1880s Swedish industry entered a phase of accelerated growth that lasted more than three decades, as several industries experienced mechanization and innovation (Magnusson, 2000). The iron and lumber industries were directed to the export market and started and remained in rural areas (Thomas, 1941).

Because of the low death rate in the earlier decades of the 19th century, and the prevailing high fertility rates, there was undoubtedly population pressure in agriculture in the second half of the century. While agricultural reforms and changes in the agrarian class structure partially alleviated this pressure, a bottleneck of young individuals persisted due to the slow growth of opportunities, attributed to the relatively late processes of industrialization and urbanization (Thomas, 1941). As with other European countries experiencing similar pressure in agriculture, small farmers and workers in Sweden faced three possibilities: to accept a fall in their living standards, find alternative employment, or emigrate to the US (Baines, 1991).

Similarly, in the mid-19th century, the US was a predominantly agrarian economy. However, during the second half of the century, the country underwent rapid industrialization. At the onset of this industrialization process, the US economy was considerably more diversified compared to Sweden's (Stanfors & Goldscheider, 2017). Additionally, rapid urbanization emerged as another significant feature during this period (Kirkland, 1961). Because of the more comprehensive industry and service sectors in the US, the move from agriculture to industry was both faster and more complete in the US than in Sweden (Stanfors & Goldscheider, 2017).

Post-1880, industrialization and urbanization accelerated dramatically due to technological innovations, social changes, and a political system that led to economic growth in the US. This phase of industrialization increasingly relied on mechanization to boost production. The expansion of the electrical grid facilitated factory operations with cheaper, cleaner, and more convenient power. Electric lighting enabled factories to operate 24 hours a day, and electric streetcars improved commuting for individuals living on the city outskirts (Rees, 2016).

Furthermore, railroad track mileage expanded significantly after the Civil War, connecting cities and fostering the growth of new factories in strategically advantageous locations for resource access and goods production (Zinn, 2015). There was a tendency for new factories to be located close to or in urban areas, particularly in the big cities. There was a significant migration from rural areas to cities as people looked for employment in factories and industries. Another factor promoting the urbanization of the country was the construction of thinner and higher buildings thanks to structural steel, which helped compress economic activity into smaller areas, as well as apartment houses packing people into small urban areas, therefore living closer to where they worked (Kilduff & Russell, 1952). Major cities like New York, Chicago, and Philadelphia saw substantial population increases and infrastructural development (Parker, 1996).

In the 19th century, female labor force participation rates were generally low in both countries and were often underreported in historical records. In Sweden, single women were more likely to participate in the labor force, while married women typically left paid employment after marriage (Molinder, 2022)

In the late 19th century, the US generally had higher real wages compared to Sweden. This period, particularly the latter half of the 19th century, was marked by a significant rise in wages for workers. However, convergence was happening between the two countries during the period, partly as a result of the mass migration (Taylor & Williamson, 1997). By the end of the 19th century, the US and Sweden exhibited a relatively comparable degree of income inequality, with Sweden appearing slightly more unequal. In Sweden, the top one percent possessed between 20 to 25 percent of the income in the period between 1900 and 1910, while in the US, it was below 20 percent in 1913 (Roine & Waldenström, 2008). After 1900, Sweden started to experience strong upward social mobility (Barton, 1994).

The chronology of the Swedish Emigration to the US

Although migration from Sweden to the US can be traced back to as early as the 17th century, movements were not consequential until 1845, which marks the start of the mass migration period. Trips during the first decades of the mass migration period ("The Pioneer Period") were expensive and carried out by sailing ships, which limited the number of people that could afford the voyage (Carlsson, 1976). However, the travel cost from Sweden to the US was significantly lower in the second half of the 19th century compared to before thanks to advancements in steamships (Keeling, 1999).

The mid-19th century saw economic hardship in Sweden, with industrialization and changes in agricultural practices leading to job displacement and land scarcity. However, mass migration was a process too complex to be explained only by the population surplus in agriculture (Thomas, 1941). One characteristic of the emigration of Europeans to the US during this period is that emigration rates experienced sharp changes from one year to another, as they followed the business cycles in the US, to respond better to the availability of jobs in the destination (Baines, 1991). Sweden was not an exception to this pattern, as seen in Figure 1. Pull and push factors are typically attributed as responsible for temporal fluctuations in emigration, both in the long run and in the short run, since emigration from Sweden typically mirrored oscillation in economic activity (Dribe et al., 2022).

On the one hand, the push represented by the surplus population was more or less constant during this period, as the structural change in Sweden led to rural poverty (Schön, 2010). On the other hand, the pull of the US was more volatile. In the last few years of the 1860s, Sweden experienced harvest failures, which have been connected as drivers of the first mass migration spike (Carlsson, 1976). It should be considered, though, that the idea that famine was responsible alone for mass emigration might be too simplistic, as the people most affected by famine would likely not have the resources to emigrate, particularly if there were not already a process of chain migration to assist potential migrants in a large scale (Baines, 1991). However, the years of bad crops coincided with a period of prosperity in the US, along with cheaper travel, and the credibility of the stories of the New World cemented by earlier migrants, opened the door to mass migration (Thomas, 1941). The Homestead Act of 1862 promised free land to those who decided to stay in the US, attracting many Swedes to settle. Migration flows were characterized by entire families migrating (i.e., husband, wife, and children) (Carlsson, 1976).

The effects of the crop failures were short-lived. Yet, they triggered a large outflow, with an emigration culture beginning to emerge in the country. The culture or tradition of emigration refers not only to the consistent emigration of a significant number of individuals but also, crucially, to a cultural change larger than the sum of individual decisions (Akenson, 2011).

Moreover, mass migration coincided with a time when industrialization was making real strides in the Swedish economy. The rapid progress of industrialization in the rural export industries provided a strong counterattraction to the US pull (Thomas, 1941), and improving conditions in Sweden during the 1870s likely deterred migration. Despite its smaller magnitude, a consistent flow of migration continued throughout the decade, likely as a process of family reunification from the migrants in the 1860s. Indeed, a key characteristic of emigration is continuity, as once mass migration begins, it continues (Baines, 1991).

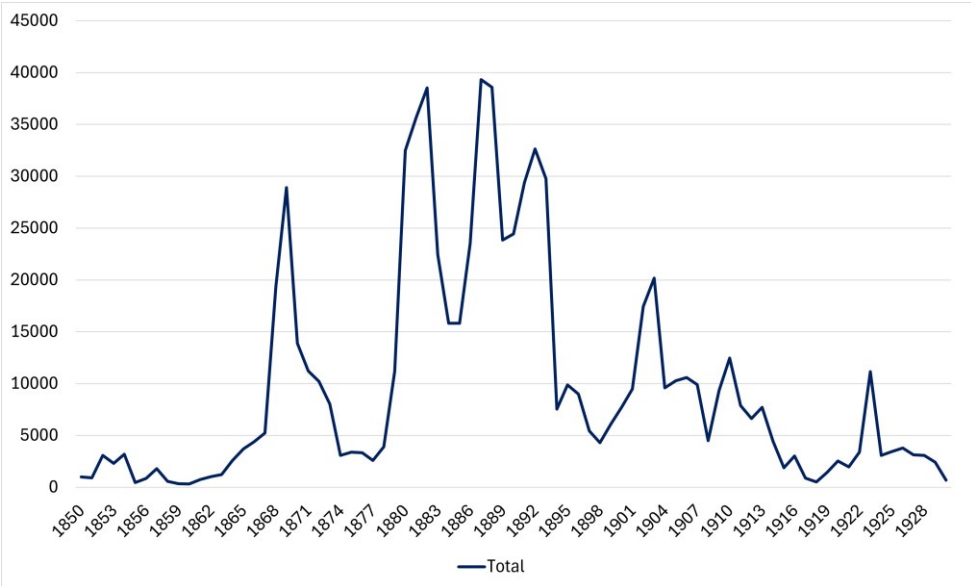

Figure 1.
Swedish emigrants to the US, 1850-1930. Source: EMIBAS

After the relatively low emigration rates of the 1870s, mass migration reached its highest level ever in the 1880s, during some years almost 10 per thousand Swedes emigrated. Additionally, emigration during this decade differed from the previous one not only in demographic characteristics but also concerning the factors driving them. Crises in the two leading industries in Sweden, timber and iron, had widespread repercussions in several sectors of the Swedish economy during this decade (Carlsson, 1976). In addition, falling grain prices because of the cheap imports from America and Russia represented economic difficulties for many farmers, until import tariffs were introduced in 1888 (Schön, 2010). These factors enhanced the push factors during this decade to the already latent push from population pressure.

During this decade, the US had a high demand for labor in urban areas thanks to booming industries in several sectors (Baines, 1991), while the agricultural frontier was closing (Hoerder & Moch, 1996). Moreover, the pull from the US was particularly effective in attracting migration not only because of the periods of economic prosperity but also because chain migration started to play a significant role in perpetuating migration (Carlsson, 1976). During this decade, around 40-50 percent of Swedish emigrants from Gothenburg (the main port of Swedish emigration) traveled with prepaid tickets (Bohlin & Eurenius, 2010). The presence of migrant networks also meant that migrants would have access to adequate information and would decide to migrate as soon as conditions in the destination were favorable in terms of labor market opportunities (Baines, 1991).

The composition of the migrant streams also differed from the earlier migration. Although migration to rural areas continued, this migration had a more urban character as that is where the more promising opportunities were. In addition, instead of family migration, migrants were in their majority young unmarried men and women, which meant that the flows represented individuals who would be predominantly part of the labor force (Carlsson, 1976). As with other Scandinavian groups, migration from Sweden went from "folk" settlers in the 1860s, to "individual" immigrants in the urban areas of the Midwest and Northeast (Hoerder & Moch, 1996). After another emigration boom in the early 1890s, emigration rates gradually decreased until the turn of the century as living standards were steadily increasing in Sweden while the US experienced economic crises (Bohlin & Eurenius, 2010).

By the 1900s, the Swedish expansion of industry could absorb the population pressure in agriculture, which meant that push factors became weaker. In the years between 1890 and 1913, for each year of economic recession, Sweden experienced an average of 1.89 years of prosperity, compared to 1.57 in the US (Thomas, 1941). Yet, in the 1900s there was one important emigration burst, although never reaching the levels seen in the 1880s. This spike reveals the dominance of pull factors during this period, particularly in the form of chain migration (Carlsson, 1976). The Swedish-born population reached its peak number in the US in the early 1900s, with over 665,000 individuals registered in the 1910 US Census. Because of the improving living standards in Sweden, the Swedish government started to investigate the causes behind emigration, as it seemed the pull from the US continued to be strong. In a time of growing national sentiment, Swedish society had strong reactions to the high emigration, with pamphlets and books discouraging emigration by stating the opportunities in the US were not as good as in the past, while Sweden needed young people to work and defend the country. The purpose of those prints was to make citizens not question whether it is beneficial to move, but if it's right (Barton, 1994).

Emigration decreased further because of the First World War, though the flows never stopped completely. Finally, during the Post-War period, Sweden experienced

some emigration surges, but relatively minor compared to previous rates, a pattern seen also for other European countries (Baines, 1991). Starting in 1930 during the Great Depression, the number of immigrants surpassed the number of emigrants, putting an end to the Age of Mass Migration in Sweden (Carlsson, 1976).

Because of the high volatility of emigration rates, during the Age of Mass Migration, lasting about 85 years, 75 percent of the emigration from Sweden to the US was concentrated to 35 years across three separate periods, 1868-1873, 1879-1893, and 1900-1913, while the remaining 25 percent was dispersed in a span of 50 years. It is plausible that during periods of relatively low emigration rates, the influence of friends or relatives became particularly crucial in encouraging migration, given that economic incentives for migration were less pronounced (Carlsson, 1976).

Figure 2 presents the number of US emigrants from Sweden by gender. About 43 percent of the migrants were female throughout the entire period, a percentage relatively high figure compared to immigrants from other sending countries (Gabaccia, 1994). Female streams mirrored male streams, though they showed less volatility. During periods of relatively low emigration, the number of women emigrating was similar to the number of men, some years women left even more, such as in the 1890s. The reason for the lower volatility has been attributed to the type of occupations Swedish immigrant women could expect to find in the US compared to men, something also observed for immigrants from other countries (Hoerder & Moch, 1996). Although women could expect to work in the textile and clothing industries in the US, the large majority of Swedish immigrants worked in domestic service, an occupation that was less dependent on business cycles (Thomas, 1941). This was in contrast to the male-dominated industrial sector which was heavily business cycle dependent, resulting in a sex-specific labor market pull of the US (Hoerder & Moch, 1996).

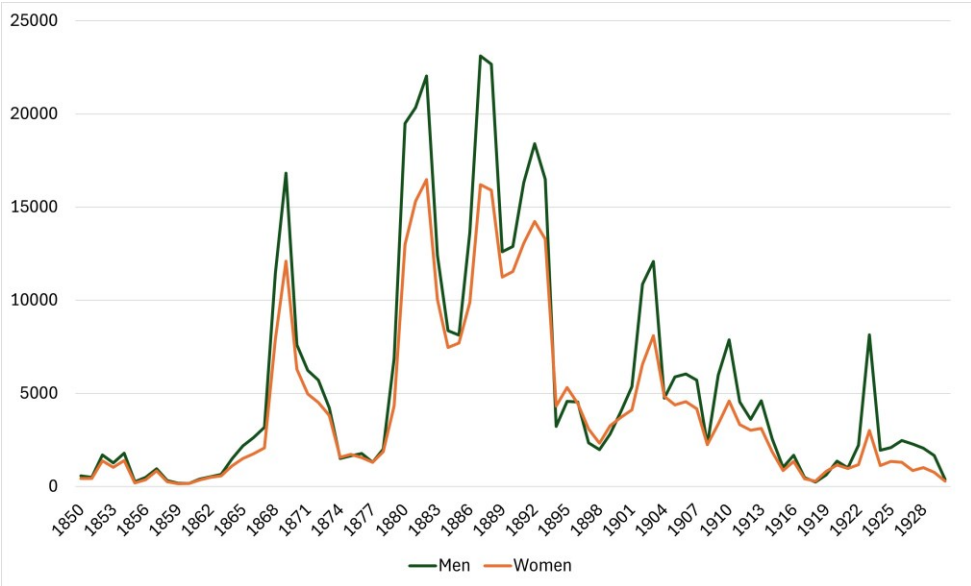

Figure 2.
Swedish emigrants to the US by gender and year, 1850-1930. Source: EMIBAS.

Swedish immigrants in the US

Swedish migration forms part of the "old immigrant" contingent in the US, together with the Irish, Scottish, English, Germans, and other Scandinavians. Most of these early Scandinavian emigrants intended to settle in the inner lands of the US to exploit farming, locating heavily in the Midwestern regions, in particular, Minnesota and Illinois (Baines, 1991). Over time, Swedish immigrants also located themselves in other states in the "Factory Belt" in the Northeast, such as Ohio, Pennsylvania, and Massachusetts, where industries were booming. Important concentrations of Swedes could also be found in the western region, although not as important as in the Midwest and Northeast (Norman, 1976b). Figure 3 presents the share of Swedes in each county' population in 1900. It follows that migrants would move into labor markets they were familiar with, for example, to work in iron industries (Hoerder & Moch, 1996). Migrants from Swedish sawmill areas relocated to lumber and industrial regions in the Midwest, while those from Sweden's iron industry joined the iron sector in Massachusetts. Similarly, migrants from mining areas moved to the mines in northern Michigan. In some instances, the significant number of Swedish immigrants and their early arrival in these areas increased their chances of securing leading positions and skilled employment within the counties (Norman, 1976b).

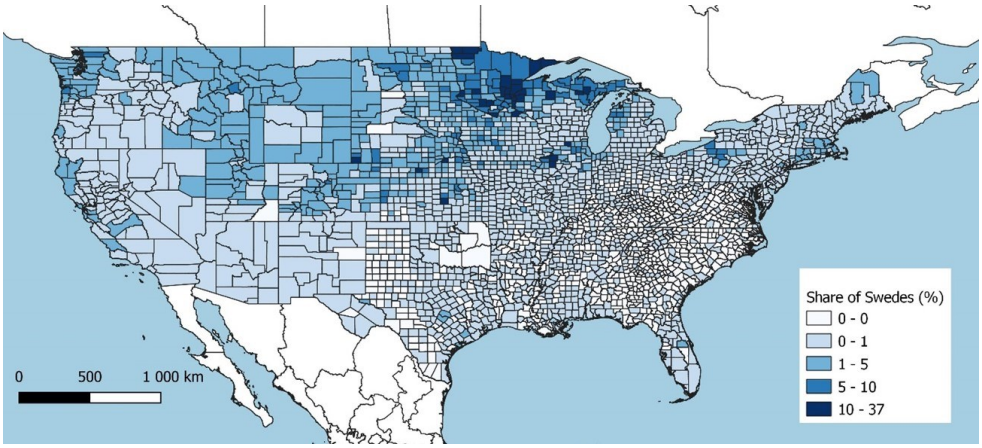

Figure 3
Share of Swedish-born individuals in the population of each county in the US, 1900. Source: IPUMS.

Swedes tended to apply for citizenship often, unlikely other immigrant groups, which could have improved their social status or labor market success. An important aspect of the settlement and assimilation is the participation in politics. Swedes were involved in politics, particularly in areas where they represented an important majority, though not to the same extent as Norwegians (Barton, 1994; Norman, 1976b).

In the late 19th century, Swedish immigrants to the US were generally perceived positively. They were often seen as hardworking, and eager to assimilate into American society, compared to other immigrant groups which might have brought drinking habits and bad personal appearance with them. Overall, Swedish immigrants were valued for their contributions to American agriculture, industry, and culture, and they became an integral part of American society (Barton, 1994).

While they faced some discrimination and prejudice, as all immigrant groups did, Swedes generally encountered less hostility compared to other groups, such as the Irish, German, or Chinese and were instead considered some of the "best" immigrants (Barton, 1994). Their relatively smooth integration into American society was aided by their Protestant religion, similar cultural values, and willingness to adopt English as their primary language. Swedes were not discriminated against in the labor market on the basis of first names (Abramitzky et al., 2020). Following the results by Collins and Zimran (2023), the Swedish cohorts which migrated early on, experienced catching up in the labor market with natives. However, those migrating during the peak mass migration experienced small occupational upgrade compared to natives.

As Swedish immigrants were young and unmarried during the peak mass migration of the 1880s, they were forced to quickly get a job and preferably learn English, which accelerated the Americanization process more than in previous decades. This is particularly true for female immigrants, who tended to Americanize faster than male counterparts who tended to work in environments characterized by the presence of fellow Swedish or Scandinavian immigrants (Barton, 1994).

Churches, newspapers, and social organizations represent some of the many Swedish-American institutions that flourished in the late 19th century to satisfy the needs of the constantly growing immigrant community. Some of these institutions provided support and encouraged the integration of immigrants to improve their outcomes in the labor markets (Norman, 1976b). Some churches encouraged newly arrived immigrants to get ridden for any savings immediately to be forced to integrate (Barton, 1994).

Considering the importance of the so-called "family-and-friends" effects on the emigration of Swedish individuals, Swedish immigrants tended to live close to other Swedish immigrants. Swedish-language newspapers and cultural institutions flourished in cities like Chicago and Minneapolis (Norman, 1976b). Furthermore, Swedes also displayed distinctive patterns of segregation compared to other Scandinavian immigrants. Swedes tended to be more spread out across the country than for example Norwegians and Danes, although there was a lot of overlap in the regions where Scandinavian immigrants lived (Baines, 1995; Eriksson, 2020). Just as with other immigrant groups, Swedish female migrants were more likely to move to urban areas than men, who were equally spread out in urban and rural areas (Norman, 1976b; von Berlepsch et al., 2019).Figure 4 shows the share of women among all Swedish born individuals by county for 1900.

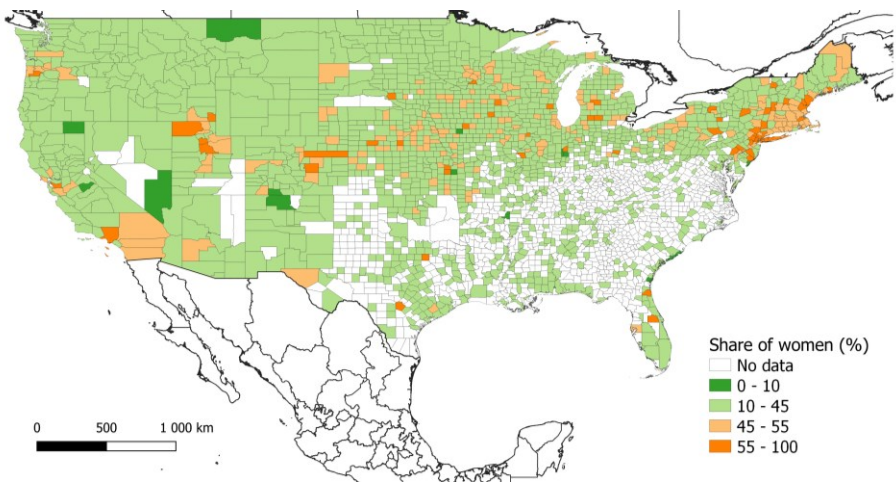

Figure 4
Share of women among all Swedish born individuals by county, 1900. Source: IPUMS.

In the specific case of women, who largely worked in domestic service, Swedish women were often seen as hardworking and diligent, as well as praised for their work ethic and reliability, particularly in domestic service where they were frequently employed by middle and upper-class families (Lintelman, 1989). Because of their good reputation, Swedish women were particularly sought after by employers, as there was also this perception that Scandinavian cultures were disciplined and morally upright, sharing the same protestant faith as many employers, while also being able to read (Gabaccia, 1994).

Swedish women, like their male counterparts, faced pressures to assimilate into American culture. This included learning English, adopting American customs, and sometimes abandoning their own cultural practices. Failure to assimilate could lead to social isolation and discrimination. Swedish immigrants brought with them cultural practices, foods, and traditions that were sometimes appreciated and adopted by their American neighbors. Their contributions to community life, including participation in church activities and social organizations, helped them to integrate them into American society (Norman, 1976b).

Return migration to Sweden

Finally, although a large majority of the Swedish emigrants stayed in the US, close to 19 percent of the 1.1 million emigrants eventually returned to Sweden (Carlsson, 1976). Compared to southern and eastern European immigrants, the Swedes returned at a much lower rate (Wyman, 1993). It should be noted that southern and eastern Europeans mass emigrated during decades when transportation was cheaper and easier. In this regard, the Swedish migration waves from the 1900s and 1910s showed higher rates of return migration than the earlier waves (Blanck, 2016).

Some accounts suggest that most Scandinavian emigrants wanted to return at some point (Baines, 1991). It is unclear whether return migrants originally intended to come back, or they did not manage to fulfill their intentions in the New World. Return migrants typically stayed in the US only for a short amount of time (Carlsson, 1976; Tedebrand, 1976). In addition, women displayed lower return rates than men, which suggests that the percentage of permanent immigrant women would be close to 50 percent of the total (Gabaccia, 1994; Hoerder & Moch, 1996). Although some Swedes desired to return to Sweden when they became elderly, many were hesitant to do it even if they had the means to do it, as they felt part of a wider world in the US. In addition, particularly before the turn of the 20th century, they felt like they would be judged for leaving their home country in the first place (Barton, 1994).

Theoretical Considerations

International migration is a diverse and complex process, and at present, there is no single, coherent theory to explain it. Instead, there exists a fragmented set of theories that have been developed largely in isolation from each other, many times segmented by disciplinary boundaries (Massey et al., 1993). In this dissertation, the relevant theories relate to the determinants of emigration and the economic assimilation of migrants in the host country.

Economic theories on migration

In the oldest and best-known theories on international migration, labor migration happens because of geographic differences in the supply and demand of labor (Harris & Todaro, 1970; Ranis & John, 1961). According to this macro-level neoclassical theory and its extensions, countries with large labor endowments relative to capital have lower wages than countries with a limited labor endowment relative to capital. As a result of this difference, workers migrate from low-wage countries to high-wage countries. The increased supply of labor depresses the wages in the high-wage country, while the decrease in labor supply from the sending country would increase its real wages. Therefore, the real wages between the countries would converge until an equilibrium is reached, in which the wage differentials would only reflect the costs of movement between the countries (Harris & Todaro, 1970; Todaro, 1980). In this framework, migration is a disequilibrium phenomenon, which ceases when the equilibrium is reached (Harris & Todaro, 1970).

Beyond these macro patterns, neoclassical theory also explains decisions at the individual level. It is expected that individuals have conducted a cost-benefit analysis to assess the feasibility and utility of investing in migration (Sjaastad, 1962; Todaro, 1969; Todaro & Maruszko, 1987). The economic conditions in both destination and origin, as well as individual characteristics, are involved in the analysis of the decision to migrate. These conditions imply that the propensity to migrate might differ from individuals from the same country (Lee, 1966). In the context of the age of mass migration, migration was usually seen as a voluntary permanent move, considering the cost and effort to emigrate. More formally, individuals migrated if the net present value of the expected returns of migration was higher than the costs involved in the migration process (Sjaastad, 1962; Todaro, 1969).

In his seminal work, Sjaastad (1962) explains how migration can be seen as an investment decision, in which the rates of return to migration represent how much the individual decides to invest in themselves. This may include taking advantage of income differences between different places, like higher real wages in the US,

gaining new skills at the destination, achieving occupational upgrade, or a combination of both. As an investment, before individuals get to enjoy the higher wages, the individual must undertake costs associated with the move to the destination. The migration costs can be divided into monetary and non-monetary, and they play a crucial role in the decision to migrate. Monetary costs include transportation and accommodation, while non-monetary costs relate to the effort required to learn a new language and culture, difficulties adapting to a new labor market, as well as the psychological toll of emigrating and cutting old ties to forge new ones. In addition, since the migrants will be without a salary during the move to the destination and likely also for some time after, the opportunity costs should also be considered in the cost-benefit analysis.

Potential migrants estimate the costs and benefits of moving to different locations and decide to migrate to the location where they expect the net present returns to be the greatest over a determined time horizon. Moreover, the expected future income in the destination country should be estimated by multiplying the earnings corresponding to the individual's skill in the destination country, by the probability of obtaining a job there (Borjas, 1989). Furthermore, beyond the wage differentials between countries, individuals will display different likelihoods of international migration even if they come from the same country, as skills, social conditions, technologies, and occupation, among other characteristics can change the net returns expected for different individuals (Massey et al., 1993).

Sjaastad (1962) also explains that there exist non-economic returns to migration. Those returns are related to benefits of moving to a new area that are not related to pecuniary earnings, such as preferences to relocate to that country. According to this perspective, dimensions such as personal freedom, social equality, and working conditions could play a major role in incentivizing emigration. During the Age of Mass Migration, the role of non-economic returns could be particularly of great value if conditions in the origin country were characterized by social rigidity and limited suffrage (Abramitzky et al., 2012; Knudsen, 2024).

Migrant selection

Because of the cost-benefit analysis individuals would conduct to evaluate the migration decision, individuals with certain skills would be more incentivized to migrate to countries in which they could expect the highest returns. Therefore, even in the context of open borders, the emigration flows will be disproportionally larger for certain groups, meaning that migrants are typically not a representative sample of the destination country. This characteristic in the emigration process is known as migrant selection (Massey et al., 1993). Migrant selection is of relevance in the study of migrant economic outcomes, to understand how much of the economic performance of the immigrants is related to opportunities in the host country, rather

than characteristics inherent in the migrant group that differentiates them from both the origin and destination population.

The identification of migrants' selection can be conducted in various ways. One such way is through the demographic profile. For example, young individuals are more likely to migrate due to their extended time horizon, allowing them to invest and realize returns that surpass the migration costs. Similarly, single men might be more likely to migrate since they have low dependency burdens, and high labor force participation rates (Borjas, 1989). Selection on demographic variables is typically easy to find in sources. However, migrants can be selected on more complex characteristics. For example, individuals might be more likely to migrate according to their likelihood of success in the labor market in the destination, because of their skills, health, ability, industriousness, or aversion to risk. These characteristics are more difficult to find in data sources, as many of them are unobservable (Chiswick, 1999).

The literature has typically focused on selection by skill or ability (Hatton & Ward, 2024). To understand migrant self-selection, Borjas (1987) adapted the Roy model of occupational choice (Roy, 1951) to predict which individuals are more likely to undertake migration. The model explains how migrant flows will depend on individual ability, and the origin and destination's wage distribution. Specifically, if the destination country offers greater returns to skills compared to the home country, individuals with high skills from the home country are more likely to migrate, as their skills would be rewarded more in the destination. In this case, since individuals are disproportionally coming from the higher end of the income distribution, the process would be referred to as positive selection. Conversely, if the home country values skills more than the destination country, migrants are likely to be disproportionately comprised of individuals with lower skills, referred to as negative selection (Borjas, 1987). If the higher income inequality in Sweden, compared to the US, towards the end of the 19th century reflects higher returns to skill, it would suggest that Swedish migrants would predominantly come from the lower end of the skill distribution, leading to negative selection on skills (Abramitzky et al., 2012). Transportation costs should be considered when studying migrant selections, as high transportation costs could mean that only individuals who could afford the trip would be able to migrate, leading to positive selection on income. A decline in transportation costs, or assistance from previous emigrants would work in the opposite direction, as individuals more representative of the population of origin could afford the trip (Hatton, 2010; Massey et al., 1993). Furthermore, it remains unclear if there is a correlation between observable and unobservable selection. For example, there is a possibility that an immigrant coming from an observable poor family could be highly industrious and ambitious (Hatton & Ward, 2024).

An alternative model of selection on skills deals with asymmetric information, proposed by Katz and Stark (1989). They explain that potential migrants know their

true productivity but potential employers in the destination do not, so employers offer the wages expected on average for immigrants. In this model, low-ability individuals would be more likely to migrate than high-ability individuals, leading to negative selection.

Immigrant Assimilation

In the host country, the economic assimilation of immigrants often involves several stages in which migrant networks can affect economic outcomes. The economic assimilation of immigrants refers to the process by which immigrants' economic status, such as income, employment status, occupational attainment, and overall economic well-being, converge to those of native-born individuals in the host country (Borjas, 1985; Hatton, 1997).

The classical finding by Chiswick (1978) that for the post-1950 decades, immigrants initially received lower wages than natives, and then converged to native wages decades later can be interpreted in a human capital framework (Hatton & Ward, 2024). Typically, upon arrival, migrants might predominantly secure employment in low-skilled or unskilled occupations, largely attributable to challenges such as language barriers, a lack of local credentials, or unfamiliarity with the local job market. However, as they accumulate experience, enhance language proficiency, and become more acquainted with the local culture, migrants may transition to higher-skilled or better-paying occupations (Massey & Mullan, 1984).

However, this view of immigrant assimilation has been debunked empirically in subsequent literature when one considers cohort effects and selective return migration. Analyses based on cross-sectional analysis have the limitation of not taking into account changes in migrant cohorts, as more recent immigrant waves might differ from earlier ones, so the apparent convergence might just be revealing that older cohorts assimilated better than the latter ones. Additionally, if less successful immigrants decided to return to their home country, the remaining individuals would appear to be on average more successful than if all the members of the immigrant cohort were considered (Borjas, 1985). Moreover, the assimilation of immigrants is deeply connected with the selectivity of immigrants, as immigrants may have more ambition and drive than the native-born, which would imply that their income would increase faster throughout the life cycle than income for the native-born. Conversely, if immigrants have relatively lower skills, they might never converge to native-born levels (Hatton & Ward, 2024). To better understand immigrant assimilation, immigrant economic outcomes should be compared to non-migrants in the source country, rather than native-born in the destination country, or by following immigrants over time in the destination country.

Network theory

The micro-level neoclassical approach focuses on individuals and labor market conditions. However, it can be extended to include larger units in the decision-making process. For example, families or households could act as decision-making units that not only maximize gains but also minimize risks (Stark & Lucas, 1988). This theory, which is central to the "new economics of migration", suggests that households allocate resources to different sources of income to secure their livelihoods. For instance, some family members are allowed to migrate while others stay, so the family can benefit from labor markets with different conditions. Chain migration can be partially explained by this extension of the neoclassical framework, but to fully understand it, the framework has to be broadened even more (Eurenius, 2020).

Individuals make their own decisions but are also part of the social context that can influence them (Massey & España, 1987). Introducing social networks in migration theories has helped alleviate some dilemmas in migration research (Boyd, 1989). In this theoretical approach, the focus is on individuals and the relationships they have, as well as the resources that are created by them (Massey et al., 1993).

Migrant networks represent a type of social capital, comprising interpersonal connections that link migrants, past migrants, and non-migrants in both sending and receiving societies through bonds of kinship, friendship and shared community origin (Boyd, 1989; Massey & España, 1987). Consequently, migrant networks play crucial roles both in the place of origin and in the destination.

In the country of origin, networks can encourage emigration by simplifying the process through lowering emigration costs. One of the ways they can reduce costs is by helping pay for the direct costs associated with migration, such as transportation. Another way to help is by facilitating the likelihood of finding a job in the destination, reducing the foregone earnings associated with the migration process (Massey et al., 1993). Furthermore, networks are vital in providing details regarding economic conditions at the destination, such as information on job opportunities and wages. Beyond pecuniary costs, networks can likely help with the psychological costs associated with emigration (Connor, 2019; Wegge, 1998).

Not all networks are the same, as the strength of the networks depends on how close the potential migrant is to the other individuals in the network. Ties between family members or among kin groups typically represent strong connections, but they can also include ties between non-kin individuals, such as friends and neighbors, although these networks are often built on weaker ties (Granovetter, 1973). Stronger ties, such as kin-based ones, are more likely to provide financial assistance to undergo the transatlantic crossing, while weaker ties may still be crucial for migration by providing information and expectations for the decision to move (Wegge, 1998). The impact of previous migrants on potential migrants has been referred to as the "friends-and-family" effect (Levy & Wadycki, 1973).

Social networks helping individuals migrate can be seen as a mechanism perpetuating migrant flows, a process that has been defined as chain migration (Boyd, 1989). The "pioneer" migrants facilitate migration to for prospective migrants in their network, by reducing the costs and the risks of migration, thereby fostering new migration and self-sustaining streams that could last for decades (Massey et al., 1993). Considering the migration from Europe to the US at the turn of the 20th century was not restricted by legal borders (Abramitzky & Boustan, 2017), chain migration patterns likely played a large role in perpetuating emigration.

In the host country, there are several ways in which migrant networks can have an impact in the assimilation of the immigrants. On the one hand, migrant networks initially play a key role in facilitating the migrant to settle down, as they reduce culture or language shocks (Choldin, 1973), as well as providing an environment of stability and familiarity (Edin et al., 2003; Koser Akcapar, 2010). Furthermore, network structures of trustworthiness, information channels, or norms in the community can encourage the accumulation of human capital for the individual (Coleman, 1988). In the context of historical migration, networks likely played a more significant role, as institutions that aid in assimilation were not as prevalent as they are in contemporary societies (Massey et al., 1993). Considering these initial obstacles, networks from countries that share cultural or linguistic similarities with the migrant's country of origin can be of assistance as well as networks from the migrant's same country of origin (Bredtmann et al., 2020).

On the other hand, living in an area densely populated by migrants, often labeled as an ethnic enclave, might also pose disadvantages (Wilson & Portes, 1980). This is because the advantages an immigrant can gain from networks are directly related to the opportunities available within the community. A community with limited resources could consequently act as a barrier to upward mobility, trapping individuals in low-wage jobs and social (Xie & Gough, 2011). Additionally, depending on labor markets within the migrant community may restrict exposure to other economic networks, impeding the accumulation of skills necessary for success in the broader labor market (Damm, 2009; Portes, 1998). Therefore, the expectations of how beneficial migrant networks might be for assimilation in the labor markets are not clear from a theoretical perspective.

Previous research

Determinants of migration

Previous studies examining the factors behind emigration during the era of mass migration primarily centered on analyzing time series data. The emigration patterns from Sweden have been a prominent subject in this body of literature, particularly

because of the availability of data on emigration (Baines, 1991). Thomas (1941) demonstrated the correlation between emigration from Sweden to the US and economic cycles in both destination and host countries. Her findings challenged the notion that emigration could solely be attributed to population pressures in agriculture. The importance of both push and pull factors was confirmed by Wilkinson (1967) and Quigley (1972). Beyond economic conditions in sending and receiving countries, the "friends and relatives" effect has been included in the models by using lagged emigration or the stock of immigrants in the host country, as done by Hatton (1995) for Scandinavian countries.

Although many studies for decades have shown the importance of "friends and family", only a few have used micro-level data to show evidence of chain migration. Ostergren (1982) studied four villages in middle Sweden, showing emigrants to the US came from a couple of distinct kinship networks, while other kinship groups were not involved in emigration at all. With a case-control study of a random sample of 250 emigrants and 500 stayers from the county of Halland in Sweden, Eurenius (2020) shows a higher likelihood of emigration for individuals with family members who previously migrated to the US, with the likelihood being greater for younger people and women.

Other studies have relied on cross-sectional data to explain emigration. A large research project was carried out and summarized in the book "From Sweden to America" (Runblom & Norman, 1976), which dealt with various topics of the emigration process, such as determinants, chronology, and composition of emigration, while also dedicating time to describe the assimilation of Swedes in the US. The majority of the studies relied on descriptive statistics with some econometric analysis. More recently, Bohlin and Eurenius (2010) using a panel dataset with over 20 Swedish counties showed that emigration declined because of improving economic conditions in Sweden, as well as improved opportunities of employment at home because of industrialization and the impact of mass emigration.

Regarding immigrant selection, the migration from Europe to the US in the 19th century has shown results consistent to the Roy model. For countries with more inequality than the US at that time, such as Italy, Ireland, and Norway, it has been shown migrants were negatively selected (Abramitzky & Boustan, 2017), while in countries with lower inequality than the US such as Germany, migrants came from the lower middle classes rather than the poorest ones (Wegge, 2002). However, some differences within countries were also found (Abramitzky et al., 2012; Connor, 2019). For Danish immigrants, Boberg-Fazlić et al. (2024) show that individuals coming from areas with a more unequal distribution of land were more likely to emigrate.

For Swedish individuals between 1890-1910, Dribe et al. (2022) studied immigrant selection by social class. They find selection of individuals from medium-skilled

origins (lower-skilled, skilled, and farmers), which is only partly consistent with the Roy/Borjas model, as the prediction of the model is negative selection on skill, considering the higher inequality of Sweden compared to the US.

Assimilation in the US

In contemporary times, achieving occupational mobility requires a substantial accumulation of human capital. However, this was not the case in the US during the 19th and early 20th centuries, as social mobility was widespread across all sectors (Salisbury, 2014). Ferrie (2005) and Long and Ferrie (2013) showed high intergenerational occupational mobility in the US compared to countries like the United Kingdom. Equally, Sweden experienced higher upward social mobility during this period than many European countries, approaching levels observed in the US (Berger et al., 2023).

Given that the US was often considered the "Land of Opportunity," many individuals likely migrated with the aspiration of advancing up the occupational hierarchy, particularly crucial for those at the bottom of the occupational ladder (Salisbury, 2014). Qualitative accounts depict Swedish immigrants as capable of quickly changing their “life-calling”, while travel agencies tended to exaggerate the occupational prospects in the US (Brattne & Akerman, 1976).

Abramitzky et al. (2014) find that Swedes experienced a small earnings penalty upon arrival compared to natives. Over time, permanent Swedish immigrants experienced convergence with native-born, although the gap was not entirely closed even after 30 years in the country. However, this penalty was only seen for the first generation, as there was no indication that it was carried over to the second or third generations (Rooth & Scott, 2012). In addition, Swedish immigrants in the US are considered to have assimilated greatly in not only economic but also demographic and cultural forms, including Americanization and the establishment of Swedish-American institutions (Abramitzky et al., 2018; Norman, 1976b).

Estimating the returns to migration in a historical setting of the age of mass migration has been conducted for Norwegian immigrants in the US in 1900. Abramitzky et al. (2012) using linked data, and a brother-fixed effect strategy to control for unobserved ability and skill shared between brothers, estimate the returns to migration to be above 70 percent. However, this estimation has so far had no other point of comparison.

Regarding the relationship between migrant networks and economic outcomes for historical settings, micro-level studies are reduced. One relevant study is by Eriksson (2020), who showed negative effects on occupational earnings for Norwegian immigrants living in counties with a high share of co-nationals. In addition, Eriksson (2020) finds that in 1920, Swedish immigrants were among the most important enclaves in the US, as defined by the share of other Swedish-born

individuals in the county, while a study by Eriksson and Ward (2019), in which they measure segregation based on the country of birth of the immigrant's next-door neighbor, shows that Northern European immigrants in the 19th century displayed high levels of segregation, particularly in rural areas and factory towns.

Data

Primary data

The data used in this dissertation predominantly comes from three data sources: full-count Swedish Censuses, Swedish emigration registers, and the US full-count censuses. Specifically, I used the 1880, 1890, 1900, and 1910 Swedish censuses. Whereas for the US, censuses used are for the years 1900, 1910, and 1920.[1]

The US censuses are available from IPUMS (Ruggles et al., 2021). The Swedish emigrant register, EMIBAS (Swedish Emigrant Institute and Federation of Swedish Genealogical Societies, 2005) contains the majority of the emigrants during this period. However, it has not been completely digitized. In comparison to the official statistics numbers (Bidrag till Sveriges officiella statistik - BiSOS), up until 1895 the Emigration Register contained around 90 percent of all the emigrants reported, but then dipped to only around 55 percent for the following years. The under-reporting is unlikely to threaten the results of this dissertation, as the missing observations can be best described as random (Dribe et al., 2022). Swedish emigration statistics not only predate others but also have a high degree of reliability (Tedebrand, 1976). The Swedish emigrant register provides great advantages for research, as it not only improves linkage rates and quality, but a provides additional information about the migrant, such as the occupation and exact year of emigration. Since individuals in EMIBAS are not restricted to US migrants, I only considered those with the US or Canada as destinations. The Swedish Death Index (SDI; Federation of Swedish Genealogical Societies (2019)) is used to exclude return migrants from the pool of potential links to the US Censuses. Almost all deaths happening in Sweden between 1860 and 2016 are recorded in this version of the SDI.

Unlike the US censuses, the Swedish historical censuses were not based on reports by census enumerators. They were instead extracted from parish records that were continuously updated by the Swedish church. The extracts were compiled every ten years by Statistics Sweden, with the occupational coding into HISCO (Leeuwen et al., 2002) done by the SwedPop project (SwedPop, 2021). Likewise, EMIBAS and

[1] The 1880 US Census is used to construct an instrumental variable used in Paper IV, shown in its Appendix; however, it does not form part of the main body of analysis.

SDI are based on migration and death records, which were kept at the parish level. Because of this characteristic way of gathering the data, the Swedish sources are of very high quality in terms of accuracy, detail, and comprehensiveness, a great advantage for record linkage.

Among the numerous advantages provided by Swedish sources, a noteworthy feature is the remarkable precision in recording the time of birth. Originating from parish registers, the year of birth is meticulously documented, eliminating the possibility of recall errors, as highlighted by Eriksson (2015). Furthermore, the place of birth is captured at the parish level, a finely detailed geographic unit, with a mean of about 2000 individuals in 1900.

Since underlying data in Swedish records is more detailed and accurate than in US censuses, there are implications for the linking procedure. First, the names are more accurately stated in the Swedish sources, as up to three first names can be recorded, while in US censuses typically only one name was listed, plus an initial if available. This issue is of relevance if the census takers misspelled names because of foreign-sounding names (Goeken et al., 2011). Second, the place of origin is recorded at the fine geographic unit of parishes in Sweden, while in the US censuses immigrants only had their country of birth recorded. Finally, dates reported in the Swedish registers are accurate since they come from church books, while the age or year of immigration was asked of the individual in the US, which makes them subject to age heaping because of recall error. The 1900 US Census was the first to ask for age, birth year, and month of birth, which likely required more thought for the respondents, and better age awareness (A'Hearn et al., 2009).

Record linkage

To answer the research questions, the empirical approach requires longitudinal data. Since historical registers do not contain any type of personal identification numbers, to link individuals across the different datasets a matching procedure was used. These procedures typically rely on the use of time-invariant variables to find possible candidates for each individual. The linking of the databases was done in two parts: one for the Swedish side of the data, done previously by Björn Eriksson (Eriksson, 2015), and another between EMIBAS and the US censuses, done by me.

Record linking of historical registers has revolutionized empirical social sciences. Although record linkage has been used in social sciences for over 80 years, with the digitization of historical records, large-scale linked data has proved to be a great tool to create or enhance panel data for a variety of fields (Bailey et al., 2020).

The goal of record linking is to find for each observation in dataset A, the correct observation in dataset B, but many challenges appear. To do this, historical record linkage has used “blocking” as a technique to match individuals more efficiently in terms of time and effort. Blocking entails restricting the pool of potential candidates

for each observation by certain time-invariant characteristics in individuals, such as year of birth, sex, place of birth, race, and names.

The linking between the Swedish sources was done previously following Eriksson (2015). The panel was constructed with high efficiency (number of links) and accuracy rates (low percentage of false positives). This linkage uses string distance measures and time-invariant variables to match. The string distance measure used is the Jaro-Winkler distance, in which two identical names have a score of "1" and two completely different names have a score of "0". Because of the high quality and reliability of the Swedish sources, which include information on parish of birth and up to three first names, over 70 percent of the individuals were linked between the censuses, EMIBAS, and SDI. The datasets have been used in previous studies, with their analytical capacity proven (see Bengtsson et al. (2018); Debiasi et al. (2023); Dribe et al. (2022)).

Instead of doing a direct census-to-census linking between Swedish and US sources, as done by Abramitzky et al. (2012), I match immigrants from the emigrant register, EMIBAS, to the US Censuses. This intermediate step brings many advantages. First, individuals are confirmed to have migrated as they appear in EMIBAS. Second, EMIBAS provides extra information valuable for the linking, specifically the year of emigration. Finally, the occupation before the emigration of the individual is recorded.

For the links between the EMIBAS and the US Censuses, I created the links following a similar procedure as the one used for the Swedish side of the data. However, considering the differences between the data sources, many considerations must be taken into account. In specific for this case the following issues can be identified. First, transcription and enumeration errors, which can happen in both the emigration lists and in the US censuses. Second, inaccurate birth or immigration year because of age misreporting, particularly for the US census in which age heaping is likely (Zelnik, 1961). Third, the Anglicization of names (e.g., "Karl" to "Charles" or "Charlie") in the US Census , or complete change of the name with naturalization. Fourth, mortality or international migration of individuals (to other countries than Sweden or the USA).

A very basic harmonization procedure is carried out mostly to reduce differences caused by vowels only existing in the Swedish language ("å", "ä", and "ö") as well as other differences from the Swedish alphabet that can be spelled interchangeably ("w" and "v"). In addition, the endings of patronymic last names are taken out, so the Jaro-Winkler score is not driven by those letters (e.g. -ssen, -son).

First, for each emigrant, a group of candidates in the US Census is identified following the following "blocking" rules: Sweden as place of birth, difference in the year of birth is not higher than one, difference in the year of immigration is not higher than one, and the first letter in first and last name coincides (also allowing for it to coincide with either the second or third first name). Second, the Jaro-

Winkler similarity score is calculated for the first and last names, and the only candidates left are the ones with a JW score higher than a determined threshold. Third, matches are ordered from highest JW to lowest, and the highest candidate is considered a potential link as long as the difference in JW scores between the highest and second highest is larger than a determined threshold. In the case of one or more second highest candidates, the candidate with the lowest age and year of immigration difference is selected. If there are duplicates, then the observation is not matched. Middle name initial is also used for individuals with one. To select the thresholds, efficiency was prioritized (highest number of links), with a threshold of 0.7 for similarity of names, and a minimum of 0.1 between the best potential match and the second best.

All the steps are performed again from the US Census to the EMIBAS, and a match is declared if the only potential candidate from the emigration list to the US Census is the same as the only potential candidate from the US Census to the Emigration list. This must be performed because JW scores are not transitive.

The use of automated linking procedures has been questioned (e.g. Bailey et al. (2020), Ó Gráda et al. (2024), and Helgertz et al. (2022), with two inherent problems mentioned: false positives and representativeness. The first issue stems from the fact that the linking algorithms might not match the correct individual. To deal with this issue, I use three more samples to run the estimates. The first one is a more conservative sample of the main dataset, with the same JW threshold used for the Swedish sources, 0.85. The second one is the conservative estimation of the well-known ABE algorithm (Abramitzky et al., 2012), which uses standardized phonetically equivalent names (NYSIIS algorithm) instead of string similarity. The third one is the intersection between the main dataset and the ABE links. The purpose of this intersection comes from Abramitzky et al. (2021) findings that the intersection of the methods reduces the number of false positives. The tradeoff involved in using these samples is a lower number of matched individuals.

Regarding representativeness, the issue is typically that linked samples are not a representative sample of the population (Bailey et al., 2020). The reason automated linking algorithms produce non-representative samples is that they tend to link individuals with unique characteristics, such as rare last names. If, for example, individuals with rare last names represent a group of people with distinct socio-economic characteristics, then the matched sample would fail to represent the population. In each paper, I present the linkage rates and descriptive statistics to compare the matched sample to the full population on certain characteristics and show that there are only marginal differences between them. Furthermore, I control for most of the commonly unrepresentative variables in the analysis, such as urbanity and the year of immigration.

Other data

The data for occupational earnings in Sweden comes from a sample of income taxation records from 1900, which includes individuals from all of Sweden (Bengtsson et al., 2021). For the US, I use LIDO scores (in 1950 US dollars), an occupational score that not only takes occupation into account, but also considers industry, state, and rurality, to estimate a more precise average. This score has been shown to correlate correctly with income historically (Saavedra & Twinam, 2020). The LIDO scores are used in Papers II and IV. Data on the wages of domestic servants comes from the United States Industrial Commission (1901), used in Paper III.

For robustness checks in Papers II and IV, I also use occupational earnings from other sources. In specific, for Sweden, I used taxation data from the Scanian Economic Demographic Database (SEDD) (Debiasi et al., 2023; Helgertz et al., 2020). In the case of the US, IPUMS assigns coded occupations an income score called occscore, which represents the median total income of each occupation in 1950. Furthermore, there is data from the US 1900 Cost-of-living (CoL) survey (Preston & Haines, 1991) and the 1915 Iowa Census (Goldin & Katz, 2010). The results using these occupational earnings do not alter the main conclusions in the papers, and differences across estimations are expected because of the sample they were taken from. For example, data from more rural samples (such as SEDD and the 1915 Iowa Census) are reflected in the rates of return to migration shown in Paper II: the returns are higher when the SEDD data is used (as the occupational earnings in Sweden are relatively lower than with the tax data), and lower when the 1915 Iowa Census data is used (the occupational earnings in the US are lower than the LIDO scores).

Methods

To answer the outlined research questions, I take a quantitative approach using common statistical and econometric methods. I present descriptive statistics of the samples to motivate the research questions but proceed to use more rigorous statistical analysis for the main part of the analysis. In Paper 1, the main analysis relies on discrete-time event history analysis to study how the migration of siblings affects the risk of emigration. In Papers II and IV, I use Ordinary Least Squares (OLS) regressions in which the logarithm of the occupational earnings is the dependent variable, to explore the role of the independent variables as percentual changes. In Paper III, I employ multinomial logistic regressions, in which the dependent variables are large occupational groupings.

The analyses are done separately by gender when data for women is available. In addition, a fixed-effects approach is employed in all the papers, to compare as much

as possible similar individuals. In Paper I, the models are stratified by county of residence, a homologous approach to fixed effects. In Paper II, I use household fixed effects; in Paper III, county of residence and social class of origin fixed effects;[2] and in Paper IV, State Economic Area fixed effects.

Summary of the papers

Paper I. Kinship and Opportunity: Swedish Chain Migration to the United States, 1880-1920 (co-authored with Martin Dribe and Jonas Helgertz)

The age of mass migration has triggered a large body of literature, which has mostly focused on the role of socioeconomic selection in the emigration process, the role of networks in facilitating migration remains central in the theoretical literature but has not been detailed empirically for this historical period. In this paper, we contribute to the literature by exploring the influence of previously emigrated siblings and extended kin on the decision to emigrate among young men and women.

Thanks to the high quality of the Swedish sources, our sample includes the vast majority of individuals in the country. We use linked data to follow individuals and their siblings from their parental homes to young adulthood. Our sample comes from individual-level records from the full-count Swedish censuses of 1880 and 1890, linking them to the subsequent census, emigration to the US, and death records. Through the application of event-history analysis, we not only unveil the extent to which previous emigrants influenced men and women differently but also examine differences based on geographical context and social-class origin. Furthermore, we also analyze the influence of previous emigrants among close proximity kin outside of the household on emigration risk.

For both genders, we find an important role of networks in facilitating emigration. The results are particularly strong with the emigration of siblings. Moreover, our results suggest an important role played by same-gender emigrant siblings. Considering the gender-segregated labor markets in the US at the time, same-gender siblings could likely provide better information and resources relevant to siblings of the same gender.

Previous emigration of extended kin is also important, although the influence in quantitative terms is lower than that of siblings. We argue that extended kin likely

[2] Sibling fixed effects are also employed as a robustness check.

had an influence in emigration by the provision of information and risk reduction, beyond financial assistance.

Our findings reveal similar roles played by previously emigrated siblings and kin across rural and urban areas. However, we find that the influence of previously emigrating kin is considerably larger in areas not characterized by a tradition of emigration. This could naturally mean that counties with extensive emigration are more likely to have increased resources to gather the required funds for emigration, and potentially, they might be closer to departure ports. However, it is also likely that this phenomenon underscores better access to information and other role models during the emigration process. Finally, somewhat surprisingly, we found no consistent differences in the importance of migrant networks by class origin.

Paper II. The Land of Opportunity? Social class, returns to migration, and occupational mobility of Swedish immigrants during the Age of Mass Migration 1880-1910.

This paper contributes to the literature by estimating the rates of return to migration by social class of origin for Swedish immigrant men in the US at the turn of the 20th century. Empirical challenges and data limitations have posed significant challenges to answering key questions in migration research. One of those questions is the measurement of the economic returns to the migration, and particularly if and how it differed by the social class of the migrant. The lack of literature on this subject can be attributed to the complexities involved in estimating economic returns, given the presence of self-selection bias and the unavailability of individual-level data from source countries.

To estimate the economic returns of migration, I used an automated linking method to link individuals from the full-count Swedish and US censuses via the Swedish Emigration Register (EMIBAS), to get information about the source country. To address the issue of migrant selection, I employ brother fixed -effects to account for unobserved heterogeneity shared between brothers. In addition to measuring the heterogeneity of the rates of return, I explore the relative occupational mobility between Swedish-born migrants and stayers, to disentangle the mechanisms driving the returns.

I find that Swedish immigrants in the US witnessed an average earnings increase of 84 percent in 1900 and 62 percent in 1910, compared to their siblings who remained in Sweden. This rate of return is particularly high given the limited investment alternatives available to improve their earnings during this period. Notably, migrants from the lowest social classes experienced the highest returns, with sons of low-skilled or unskilled workers having returns higher than 90 percent in 1900, with only a modest decrease in 1910. Conversely, sons of white-collar workers had the lowest returns in both years. Importantly, positive rates of return were observed

across all social classes, illustrating why individuals from all social classes in Sweden chose to emigrate.

The results also show that the primary factor driving rates of return was not occupational mobility. In most social classes, migrant brothers tended to have lower-paying occupations compared to their brothers in Sweden. Nevertheless, there were two exceptions to this trend: immigrant sons of low-skilled workers and sons of unskilled workers experienced occupational upgrades relative to their siblings. In light of these findings, on average, all migrants benefited to some level from the decision to migrate. However, certain groups experienced greater advantages through occupational upgrades, while others seemed to have primarily taken advantage of higher wages in the US.

Paper III. So long, Sweden: Occupational attainment of Swedish male and female migrants in the United States at the turn of the 20th century.

This study investigates the occupational attainment of male and female Swedish immigrants in the US between 1900 and 1910. While previous studies have extensively delved into the experiences of these immigrants in the US, making comparisons with those who remained in Sweden, as well as with native populations and other migrant groups in the US, a noticeable gender bias is evident in the literature. The majority of studies have primarily focused on the experiences of male migrants, creating a gap in our understanding of the distinct challenges and successes faced by female migrants. The lack of empirical research on the economic outcomes of female migrants is conceivably linked to the underreporting of their occupations. Furthermore, women have been excluded from the recent wave of migration research using linked data due to the difficulty of achieving practical linkage rates when women marry and change their last names. To the best of my knowledge, this study represents the first empirical investigation using linked data to compare the occupational achievements of male and female immigrants in the US during the Age of Mass Migration.

Because of the lack of individual level income data, and the low variation in occupations, trying to measure a rate of return to migration becomes less meaningful because domestic service could disproportionately drive the results. Instead, examining broad occupational categories offers a more suitable approach to studying the opportunities men and women faced during this period. I compare the occupational attainment of Swedish-born adults in their initial ten years in the labor force, whether in the US (migrants) or in Sweden (stayers). Emphasis is placed on the initial years of entry into the labor market, representing the pivotal period of highest labor force participation for women.

I categorize occupations into white-collar, blue-collar, and the traditionally largest groups for men and women (farming and domestic service, respectively). Employing a multinomial logistic regression model, I control for social class and county of origin. For 1900, I show minimal differences in the probability of belonging to each occupational group between migrants and stayers. However, by 1910, some differences emerge, notably with white-collar occupations gaining prominence for both men and women in Sweden.

Next, I examine the occupational groups by including the urban status of the individual, as occupational distributions vary greatly between urban and rural settings. Notably, more differences emerge between migrants and stayers in this scenario. The high likelihood of male migrants being in blue-collar occupations is primarily attributed to urban migrants. For female migrants, the significantly high probability associated with domestic service is primarily driven by urban domestic service, whereas for stayers, it is influenced by rural domestic service.

These findings suggest that while it may initially appear that migrants and stayers held similar occupations, their tasks and pay likely differed significantly. In the case of women, domestic service remained a significant occupation for both migrants and stayers, but it was predominantly urban for migrants and mainly rural for stayers. By looking at auxiliary qualitative sources, I delve into the living standards of Swedish domestic servants in the US and argue that the expected return to migration for them was likely potentially higher than it was for men. Finally, I discuss that there was a possibly large number of Swedish women who wanted to emigrate but could not because of financial constraints.

Paper IV. The Role of Migrant Networks on Economic Outcomes During the Age of Mass Migration: Swedish immigrants in the U.S, 1900-1920. (with Jonas Helgertz)

The impact of residing in close proximity to individuals of foreign origin, commonly referred to as ethnic enclaves, on the economic outcomes of foreign-born individuals is a subject of ongoing debate. Existing literature offers diverse conclusions, with studies in contemporary contexts presenting inconsistent findings. Some studies suggest that living in ethnic enclaves fosters social and economic integration by providing benefits such as access to networks from one's country of origin, facilitating job opportunities, and offering social advantages like increased security and comfort. On the other hand, other studies propose that residing in ethnic enclaves may hinder opportunities for immigrants by limiting interactions with natives and broader access to the labor market. This uncertainty in expectations and research on the topic has predominantly relied on contemporary settings.

This paper stands out by providing a uniquely comprehensive examination of the significance of various networks for the labor market integration of Swedes in the

United States during the Age of Mass Migration. This paper advances the study of the role of migrant networks in the labor market assimilation of Swedish immigrants during the early 20th century. This is of relevance to understanding diverging assimilation patterns, both between and within different immigrant groups.

Using full-count US census data from 1900 to 1920, we analyze Swedish immigrants in the United States, distinguishing access to networks categorized by i) Swedes, ii) other Scandinavians, and iii) individuals from other foreign-born nationalities. We operationalize migrant networks at two distinct levels of aggregation. First, we examine the composition of the population at the county of residence level, and subsequently, at the neighborhood level. This second level is achieved by capitalizing on the historical US. census practice of enumerating next-door neighbors consecutively on the census form.

We find that living in a county with a significant proportion of Swedes or a county with a moderate share of Scandinavians is associated with a decrease in occupational earnings. Conversely, living in a county with a substantial share of other foreign-born individuals is linked to an increase in earnings. We hypothesize that counties with high proportions of migrants from other origins tend to be locations characterized by more established services for integrating newly arrived migrants.

Furthermore, our findings suggest that the positive influence of living in proximity to individuals from one's country of origin is more pronounced when they are in closer proximity, such as at the neighborhood level. Notably, these effects are more emphasized in urban areas, with the importance of networks diminishing in rural settings. We speculate that the resources provided through the immediate neighborhood environment are more of a personal nature, such as introductions to potential employers, and such interactions occur once a certain level of familiarity has been established.

Concluding Discussion

The migration of large populations is a phenomenon that has impacted societies historically and continues to do so. The ramifications of these mass migrations on sending and receiving societies have received large attention from researchers for decades. The bulk of the literature in economic history has focused on the Age of Mass Migration, particularly the emigration from Europe to the New World (Hatton, 2010). Early studies relied heavily on aggregate data to try to explain the determinants of migration and the assimilation of immigrants in the labor market. However, a recent wave of research using micro-level data has allowed new research questions to be asked (Hatton & Ward, 2024). Some of the topics covered include migrant selection, the economic assimilation of immigrants, the role of migrant networks on economic outcomes, and chain migration.

In this dissertation, I focus on Swedish immigrants to the US during the peak years of emigration. I contribute to the literature by answering how family migration patterns affect emigration risks, and how well the immigrants assimilated in the labor market. The use of micro-level data to explain and study processes at the micro and mesa level is particularly relevant to dealing with the research questions. With the use of recently digitized historical records, I obtain high-quality information about Swedish emigrants and stayers, with detailed data about their families, occupations, and demographic characteristics. For the first-time, I make use of record-linking techniques to follow individuals from their parental households into adulthood, in either Sweden or the US, using links from Swedish emigrant registers to the US full-count censuses. With the use of fixed-effects approaches, I compare individuals from similar backgrounds to answer the research questions. In this concluding section, I will summarize the findings of this dissertation, and then proceed to discuss them in a larger context.

The first research question asks to what extent the emigration of close relatives influenced an individual's own emigration risk? Previous research has documented the importance of the family-and-friends effect in encouraging migration from Europe to the US, particularly after 1880 (Bohlin & Eurenius, 2010; Connor, 2019; Eurenius, 2020; Wegge, 1998). These studies relied on aggregate data or small samples to show evidence of chain migration. With a sample for the entire country and at the peak of the mass migration period, we show that both close ties (siblings emigrating) and weak ties (extended family in the parish) played a role in encouraging migration. In particular, the stronger effects were seen for siblings of the same sex. These results can be explained by how siblings of the same sex could provide better information or opportunities in the labor market considering the fragmented labor markets by gender during this period. Moreover, we show that in areas of low emigration, individuals relied more strongly on close ties to emigrate.

What were the returns to migration for the Swedish immigrants in the US? Estimating the rates of return to migration is an empirically challenging feat as information about the origin of the immigrant is difficult to obtain. With the use of linked data, however, it has become possible to do this, with Abramitzky et al. (2012) estimating it at 73 percent for Norwegian immigrants in the US in 1900. So far, this figure lacked a point of comparison. By comparing migrant-stayer brothers, I estimate an average rate of return to migration slightly higher, at 80 percent, decreasing to about 60 percent in 1910. The rate of return is considerably high, particularly for individuals coming from the poorest social classes.

The literature on the economic outcomes of immigrant women is scarce, predominantly in the wave of research using linked data. As far as I know, this is the first study to include immigrant women's assimilation in the labor market using linked data. For women, estimating a rate of return using occupational earnings is less meaningful as there is less variation in the occupations held by both migrants and stayers. Instead, I look at the likelihood of being in determined occupational

groups and find that both in Sweden and the US women worked predominantly in domestic service. However, I find that stayers worked in rural areas while immigrants worked in cities, where the salaries were higher. Considering these findings, I argue that returns to migration for women were likely also very high.

I then turn to the factors that could be playing a role in the assimilation of Swedes in the US. Previous literature on rates of return to migration has not delved into possible mechanisms driving the results. In Paper II, I first look at the returns to migration were driven by higher wages in the US, by the occupational upgrade of the immigrants, or both. To do this, I compare the occupations held by immigrants to those of their brothers who stayed in Sweden, excluding wage differentials over space. I find that migrants kept occupations that paid similarly or less than that of their brothers in Sweden. This finding implies that the returns to migration were primarily driven by higher wages in the US, not the occupational upgrade of migrants. For women, a similar comparison can be found based on the findings of Paper III, where I show that immigrant women kept the same occupation they had in Sweden, although their wages differed.

The third and final research question deals with the role played by migrant networks on the occupational earnings of Swedish immigrants. Previous research on the effects of migrant networks on economic outcomes has shown ambiguous results. For the Age of Mass Migration, Eriksson (2020) found consistently negative impacts of living in counties with a high share of co-ethnics for Norwegian immigrants in the US. In Paper IV, we argue that the role of migrant networks should be studied with more specific definitions and categorization. In the analysis, migrant networks are defined by the country of origin of the immigrants, and by geographic levels. In terms of country of origin, we define the networks according to cultural and linguistic similarity, in specific, Swedish networks, Scandinavian networks, and Foreign-Born networks, while geographically they are defined at the county and neighborhood levels. We find that although living in counties with a large share of Swedish or Scandinavian immigrants is associated with lower occupational earnings, living close to Swedish immigrants has a positive association with occupational earnings in urban areas. We contribute to the literature by disentangling the role of networks in the assimilation of immigrants.

The findings of these papers present a strong picture of a part of the Swedish emigration experience. Although following neoclassical theory on migration, one would expect individuals from the lowest social classes to disproportionately migrate, however, Dribe et al. (2022) find that migrants were disproportionally drawn from the lower middle social classes. Emigration costs were likely a reason that prevented individuals from the lowest social classes from migrating. Yet, a very large proportion of migrants from those social classes effectively migrated. The findings of this dissertation suggest that the friends-and-family effects were present in all social classes, and likely encouraged migration from those with bigger financial constraints. Additionally, those migrants experienced the highest returns

to migration, although emigrants from all social classes could expect a positive return to migration given the relatively higher real wages in the US compared to Sweden.

Moreover, migrant networks were at the heart of the Swedish emigration experience. Chain migration mechanisms encouraged and facilitated emigration, not only with financial support but also by spreading reliable information to potential migrants. Unlike contemporary settings, where information about potential destinations for emigration is more readily available, during the Age of Mass Migration, the information coming from previous migrants was vital, particularly to embarking on a one-way trip across the Atlantic. The information from previous migrants did not only affect the individuals receiving the letters but worked at a community level, likely encouraging individuals who otherwise would not have known about the opportunities in the US.

Previous migrants could provide more reliable and timely information about the specific conditions individuals could expect, which was more likely to encourage migration than knowing macro-level information about wage differentials. Individuals would not realize the potential returns they could experience if they migrated, if it was not for the information from previous migrants, particularly if it came from individuals of the same background and social class, considering the heterogeneity of the returns. Although a high return to migration was expected since so many individuals emigrated, and only relatively few returned, in this dissertation I highlight that the returns were likely much higher for women than for men, a feature rarely discussed in the academic literature. The servant crisis in the US, and the weekly contracts provided an opportunity for female immigrants to work in other houses if they were not satisfied with the living conditions, wages, or tasks.

Occupational mobility was not the primary factor behind the returns to migration. However, it is important to discuss that occupational scores may not fully capture significant variations in wage distribution within occupations in the US. This is particularly relevant if Swedish immigrants worked in occupations where wages varied greatly depending on geographical location or industry. It is likely that other immigrant groups among the old immigrant groups had similar experiences, consistent with the findings of Abramitzky et al. (2012). During the period I study, the rates of return to migration should be considered as representing the benefit of emigration to the US, but also the benefit of emigrating to urban areas, since the majority of immigrants came from rural areas in Sweden and emigrated to cities in the US.

Research identifying the occupational mobility of immigrants from other countries is scarce. In the case of women, I explore this in detail by looking at the case of domestic workers, I show the great variation in wages according to region, particularly in big cities like Chicago. It is unclear if, for other immigrant women working in domestic service in the US, the returns to migration were as high as for

the Swedes, considering that the counterfactual of staying in Sweden was to live in dire conditions. Furthermore, Swedes could also enjoy the benefits of having a high reputation in the US.

Furthermore, the presence of migrant networks encouraging migration led immigrants to live close to each other in the US, and those migrant networks represented social capital that helped migrants increase their occupational earnings compared to those who might not have had a migrant network in the same area. Moreover, since emigration was encouraged the most by siblings of the same gender, we argue that this is likely because they knew more about the expected opportunities in the labor market, which can explain the large number of women migrating to work in domestic service.

In this regard, another important aspect of the Swedish immigration experience is the geographical location in the US. Both men and women tended to locate themselves in urban areas in the Midwest and Northeast, with women more heavily migrating to big cities. The findings of this dissertation point out that the chain migration process led to Swedish immigrants locating in similar areas, and many times different areas than other Scandinavian or immigrant groups. This characteristic would have an impact on the labor market performance of Swedish immigrants compared to others.

In urban areas specifically, there were more possibilities for occupational upgrade with the help of networks. It is likely that those who emigrated to places close to other Swedes did so because of information obtained through chain migration. Swedes were quick to assimilate and learn the language, becoming an immigrant group with a reputation of being diligent workers, a characteristic they could benefit from in the labor market. For women, networks helped by spreading information about which houses had a demand for domestic workers and by providing references to potential employers. Although I do not look at the role of migrant networks on female immigrants' labor market outcomes specifically, I argue that the results were similar or even more important for women. I reach this conclusion by considering the larger importance of networks for women, and the help they received once in the big cities to find better employers.

The impact of these huge migration flows on the stayers should also be discussed. The change in views as well as the information received about living conditions in the US impacted not only the emigration probabilities but also the feelings of the stayers, particularly those who could not migrate but desired to. Studies have found that political and social change happened as a result of the large emigration flows (Karadja & Prawitz, 2019; Knudsen, 2024). There was likely an unsatisfied demand for emigration, particularly for women, as they depended more on the help of previous emigrants to effectively emigrate.

Towards the end of the period covered in this dissertation, politicians in Sweden began to see emigration to the US as a major problem, as they realized young men

and women were migrating even though the living conditions in Sweden had greatly improved compared to the years of the peak migration in the 1880s (Carlsson, 1976). Against the backdrop of growing prosperity, individuals likely eventually benefited from staying in the country, as opportunities were becoming available for men and women, and society was going through political transformation. The high rates of return to migration that I find represent two points in time, but they likely decreased rather rapidly considering the improving economic conditions in Sweden. The fact that Sweden never reached the immigration quotas established in 1921 in the US provides a sign that conditions at home were improving and the returns to migration had decreased to a point where it was not worth the costs of emigrating. The pull from chain migration decreased, and the importance of migrant networks to improve occupational earnings was likely not so important over time, as Swedish immigrants integrated well into the labor markets, and any penalty seen in aggregate terms disappeared during the second generation.

The findings of this dissertation contribute to the literature on the economics of migration, with a focus on economic outcomes. Future research could delve deeper into the mechanisms of assimilation for Swedish immigrants, such as the impact of geographic location. Exploring additional outcomes like fertility or marriage could also offer a more comprehensive understanding of the migration experience. Moreover, examining the experiences of other immigrant groups would provide a broader context, highlighting both the similarities and unique aspects of the Swedish migration experience.

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Roots Across the Atlantic

The migration of large populations has had significant importance on historical and contemporary societies. Since mass migration is a multifaceted phenomenon that significantly impacts both places of origin and destination, shaping the lives of those directly and indirectly involved, it has drawn extensive research attention. Much of the economic history literature has focused on the Age of Mass Migration, particularly European emigration to the New World. Early studies primarily used aggregate data to explore migration dynamics concerning, the determinants of migration and the assimilation of immigrants in the receiving society. However, aggregate data many times can fall short of explaining migration dynamics because it does not show the differences between groups of migrants. However, recent research utilizing micro-level data s enabled new research questions to be asked.

This dissertation contributes to the existing literature by exploring the migration of Swedish immigrants to the US during the peak years of emigration. It utilizes newly digitized micro-level data and record-linking techniques to trace individuals from their parental households in Sweden to adulthood, whether they remained in Sweden or emigrated to the US. By comparing Swedish migrants with stayers of similar backgrounds, the research offers insights into the potential outcomes that male and female immigrants might have experienced had they remained in Sweden. Sweden, one of the countries with the highest sending country to the US, underwent significant transformation during this period, offering a valuable context for study.

The dissertation specifically focuses on how family migration patterns affect the risks of emigration, as well as how was economic assimilation of immigrants. In four papers, this dissertation provides a view of key aspects of the Swedish emigration experience. Although the importance of family and friends encouraging migration was known, this dissertation shows evidence of how siblings, and even extended kin, who emigrated, increased the likelihood of relatives migrating. In addition, this study shows that both men and women benefitted greatly from the migration decision, with potentially even higher gains for women who worked in domestic service. Finally, it shows how migrant networks could have positive effects on the economic assimilation of recently arrived immigrants.

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