Assimilation for Whom? Immigrant Men's Working Life and Earnings Growth

Abstract

Since the Immigration Act of 1965, millions of immigrants have moved to the U.S in hopes of better economic opportunities. At the same time, one in three immigrants eventually leave the U.S., oftentimes following unsuccessful economic integration. Past research on immigrants' economic incorporation have been optimistic: they often found significant earnings growth among immigrants using linked data between national surveys and Social Security earnings records. However, a downside of this approach is that individuals in the sample are highly selected, excluding short-term immigrants and those who move in and out of the U.S. labor force. Research using this approach also had relatively small sample sizes and could not examine heterogeneities in immigrants' trajectories by country of origin. Using Social Security earnings histories of a complete cohort of foreign-born men who arrived in 1978, I seek to explicitly examine the earnings of those who experienced exits from the labor force while also describing the earnings trajectories of immigrants from different origins. My research shows that previous research failed to account for immigrants with lower earnings by excluding those who exit the labor force. After incorporating these exits, I show that immigrants' economic assimilation nearly disappears. In addition, I show that the earnings progression of the "average immigrant" fails to represent any specific immigrant group. Specifically, assimilation seems to occur only for those who had relatively higher earnings to begin with, and for those from a few countries / regions concentrated in Africa and Asia.

Introduction

People often move to a different country in expectation of better earnings, whether the specific goal is to maximize individual earnings or to minimize family income risks (Harris and Todaro 1970; Stark and Bloom 1985; Todaro and Maruszko 1987). What actually happens after they move? In the United States, there has been rising curiosity about whether immigrants steadily climb up the economic ladder and "make it" to the middle class, or face obstacles to achieving the American dream (Clark 2003; Hochschild 1996; Park 1997). Research on the topic has found that while immigrants arrive in the U.S. with lower earnings than the native-born, they gradually catch up over time: at least part of the nativity gap in earnings is closed after one or two decades (Duleep and Dowhan 2002; Hu 2000; Lubotsky 2007).

However, immigrants leave the U.S. labor force, temporarily or permanently, for various reasons, which complicates the results of prior studies. One in three foreign-born individuals who come to the U.S. eventually leave the country (Duleep 1994; Warren and Kraly 1985). Moreover, just like native-born individuals, foreign-born individuals who stay in the country can experience non-employment and early retirement due to various reasons (Pryor and Schaffer 2000). There is a disconnection between stories of immigrants' earnings assimilation and stories of individuals' absence from the labor market. On the one hand, research on earnings assimilation has treated exits from the labor force, especially those due to emigration, as a source of bias. They seek ways to eliminate such bias by identifying only the progress of immigrants for whom the complication does not exist. On the other hand, demographic research recognizes that immigration and emigration are both deliberate choices that people make, and aims at estimating the rate at which foreign-born individuals emigrate. These studies consider the role of immigrants' socioeconomic status before emigration (Van Hook and Zhang 2011), but do not

examine their long-term earnings trajectories. As a result, we know little about how earnings assimilation and exits from the labor force together shape immigrants' economic progression in the United States.

This article seeks to move beyond the conventional focus on assimilation and mobility, the vertical dimension of immigrants' economic integration, and incorporate a horizontal dimension that has been overlooked: their temporary and permanent exits from the U.S. labor force. I have two main research questions. First, are immigrants with lower earnings more likely to exit the U.S. formal labor force than those with higher earnings? Second, what does the overall immigrant earnings progression look like when we keep the individuals that left the labor force / the U.S.? In doing so, I also pay specific attention to heterogeneities by immigrants' country of origin.

Previous research

In this article, I use the terms "immigrants" and "foreign-born individuals" interchangeably to refer to those born outside the U.S. who come to live and work here. Since the Immigration Act of 1965, the immigrant population in the U.S. has experienced significant growth in both absolute numbers and as a share of the total population (Camarota and Zeigler 2016). While there are diverse mechanisms behind migration behaviors, post-1965 immigrants often moved to the U.S. in hope of better earnings, especially in the 1970s and 80s (Garip 2012). Immigrants were especially attracted by the idea of America being the land of freedom and opportunities, or the American Dream, where everyone can climb up the economic ladder with hard work (Clark 2003).

An important way of measuring the progress of immigrants is to examine their earnings growth. Efforts to understand U.S. immigrants' earnings patterns first took place in the late 70s

and early 80s. Using the 1970 census, Chiswick (1978, 1982) found that although immigrants arrive in the U.S. with lower earnings than the native-born, their self-reported earnings catch up after them being in the U.S. for 10 to 15 years, and even exceed that of the U.S.-born after 15 years. Since the data were cross-sectional, the underlying assumption of Chiswick's statements was that the initial earnings and earnings trajectory of later cohorts would be identical to that of earlier cohorts. This assumption turned out to be far from the reality, as Borjas (1985) soon showed using both the 1970 and 1980 censuses: later cohorts of immigrants start with substantially lower initial earnings than earlier cohorts. Borjas' study stresses that cross-sectional studies greatly overestimated immigrants' earnings growth within cohorts, and again overestimated immigrants' growth relative to the U.S-born.

While cross-sectional studies provided groundbreaking understanding of immigrants' earnings progress, they face an important challenge: individuals are lost between censuses, and if being lost is correlated with earnings, then estimates of immigrant earnings are biased. This issue can only be understood and quantified using longitudinal data, and better measured when earnings are recorded rather than self-reported. Such data only became available relatively recently through the Social Security Administration. In the past two decades, there have been various efforts to identify immigrants' earnings trajectories using SSA earnings records linked with other data sources. At the center of the debate is the degree to which selective outmigration biases the estimates of immigrants' earnings growth. Below, I first review articles that identified immigrants' earnings trajectories and how foreign-born individuals' exit from the U.S. have been treated as a source of bias. I then review articles that focused on understanding factors that drive labor force exits.

Exits as a source of bias

In the past two decades, the main goal of research on immigrant earnings has been to quantify biases in estimates due to selective emigration in cross-sectional estimates. There are two main limitations in the multiple census approach with regard to selective emigration. First, immigrants are lost in between censuses due to permanent emigration, and such emigration can be selective based on earnings (Hu 2000). Second, temporary emigration (leaving the country and coming back later) can also be a source of bias if individuals who experience such events have lower earnings (Lubotsky 2007). This is further complicated by the fact that individuals often have different interpretations of the question "when did you first come to the United States?" (Redstone and Massey 2004).

Compared with the cross-sectional approach, research using longitudinal data yields more accurate estimates of immigrants' earnings because the same individuals are followed over time. Of all the longitudinal earnings data available, earnings data from the Social Security Administration has been the most preferred source because the SSA has annual records of all individuals' earnings in the formal labor force up to the taxable maximum. While the SSA earnings records have the advantage of being complete, there are very few variables in the data, allowing little room for multivariate analyses. Therefore, a common practice has been to link SSA data with a large survey, such as the Health and Retirement Study (HRS) and the Current Population Survey (CPS). Most notably, Hu (2000) used linked data from the HRS and SSA earnings records and showed that estimates of immigrants' earnings growth using multiple censuses were upwardly biased. Lubotsky (2007) used linked data from the SIPP, the CPS and SSA data, and estimated that research based on cross-sectional data overestimate the speed of immigrants' earnings assimilation by about 50%. He found that according to longitudinal data,

the immigrant-native gap in earnings closes by 10-15 percent by immigrants' 20th year in the United States.

All of the abovementioned studies, together with other related studies of immigrants' earnings and occupational trajectories (See also: Duleep & Dowhan, 2002; Toussaint-Comeau, 2006), considered immigrants' emigration from the U.S. as a source of bias. Emigration is not the only way one may leave the formal U.S. labor force. Individuals may also have temporary or permanent zero earnings due to non-employment, or working off-the-books. In previous research, these kinds of exits have also been thought of as noise.

While using longitudinal data reduces these biases, many scholars acknowledged that it does not eliminate the biases altogether. This is because individuals who are followed longitudinally can still experience temporary and permanent exits from the labor force. Therefore, a common practice is to include only individuals who had non-zero earnings throughout the period of observation (Duleep & Dowhan, 2002), or exclude those that had less than 5 years of earnings above a certain dollar amount (Villarreal and Tamborini 2018). In fact, even without intentionally leaving out part of the population, researchers have automatically chosen to focus only on long-term immigrants by using SSA data linked with survey data. The earliest wave of the HRS was collected in the early 90s; the earliest wave of the CPS that collected information on migration was in 1994 (Duleep and Dowhan 2002; Lubotsky 2007); and the typical waves of the SIPP used for data linking are 1990, 1991, 1993, and 1994 (Lubotsky 2007; Villarreal and Tamborini 2018). All individuals would have to be present in the U.S. in these years to be in the linked data, even though their earnings records, traced back to as early as is available, are used to estimate their earnings trajectories. This means that the probability of capturing short-term immigrants is much lower than that of capturing long-term immigrants, the

probability of capturing immigrants who move in and out of the U.S. is much lower than that of capturing immigrants who consistently work in the U.S., and the probability of capturing any immigrant who worked in the U.S. and left before the survey year is zero. In sum, sampling in previous research has favored long-term immigrants who are consistently in the United States.

There are fair reasons to think of any kind of exits from the labor force as sources of bias. From a policy perspective, long-term immigrants are the ones that stay in the U.S. and become parents of second-generation immigrants; they have a more long-term presence in the U.S. economy, and therefore make a more consistent contribution. From a methodological perspective, focusing only on immigrants who have continuous earnings allows the identification of clean trajectories. However, such an approach also puts a strong limit on the study population and omits the stories of millions of people. Furthermore, the approach is self-contradicting. If the ultimate goal in estimating immigrants' earnings progression is to see whether immigrants fulfill their expectations, then eliminating a population who potentially left the labor force due to low earnings would leave only the relatively successful cases. While the earnings trajectories of the selected individuals are somewhat correctly estimated, the estimates still deviate from the whole population of immigrants who ever came to the United States. Recent work on health and aging has found that the "average trajectory" of individuals' health does not match the reality of how individuals health unfolds (Engelman and Jackson 2017) , and that simply leaving it to statistic models to treat missing can still lead to biases in estimates (Jackson, Engelman, and Bandeen-Roche 2017). A similar argument can be made in the case of earnings progression: the "average trajectory" of individuals' earnings may not represent the reality of immigrants' earnings progression, and simply leaving out some individuals that are out of the labor force does not return bias-free estimates.

Exits as a subject of interest

In this section, I review studies that examined exits from the labor market, which shed light on the often excluded populations in studies of immigrants' earnings.

While foreign-born individuals, just like the U.S.-born, may exit the labor force for various reasons, the most well-studied type of exit is emigration. Guided by neoclassical economic theories of migration, foreign-born workers are hypothesized to emigrate when the purpose of their migration – to achieve higher earnings – is not fulfilled (Van Hook and Zhang 2011). Consistent with this hypothesis, studies have found that immigrants tend to leave the host country following relatively unsuccessful careers (Van Hook and Zhang 2011; Lindstrom and Massey 1994; Reagan and Olsen 2000), and that economic opportunities in immigrants' region of origin can also influence their decisions to stay (Lindstrom 1996). However, the relationship between immigrants' socioeconomic status and their likelihood to emigrate may not be as simple as monotonic. Specifically, studies have found a positive effect of having a college degree on emigration (Borjas and Bratsberg 1996; Reagan and Olsen 2000). Non-economic factors can also be drivers of emigration. Poor health, for example, is known to be a predictor of foreign-born individuals' return migration, especially at older ages (Markides and Eschbach 2005; Turra and Elo 2008). Having a less established social network in the host country is also hypothesized as a reason for emigration, which is reflected in the much higher rates of emigration among immigrants who have been in the U.S. for fewer years (Borjas and Bratsberg 1996; DaVanzo 1983; Van Hook et al. 2006; Reagan and Olsen 2000).

In most studies of foreign-born populations' emigration, there is no distinction between temporary and permanent emigration. In reality, however, most migrants make multiple moves in between the host country, their home country, and (occasionally) a third country before

settling down (Treas and Gubernskaya 2015). This is at least true in the case of Mexico-U.S. migration. There is evidence that migration flows from Mexico to the U.S. display cyclic patterns, and increased border enforcement disturbs these cycles by raising the cost of migration (Massey, Pren, and Durand 2016; Riosmena 2004). It is unclear whether the same set of factors predict permanent and temporary emigration.

In addition to temporary and permanent emigration from the U.S., immigrants can also temporarily and permanently leave the formal labor force, but not the country. They may exit the formal labor force if they become not employed, of if they start to work "off the books". Such exits are less understood. In general, individuals' exits from the labor force are most often linked to socioeconomic disadvantages, such as poor health and low earnings. Regardless of nativity, men who are not in the labor force are more likely to have serious health issues (Krueger 2017), and this population likely has low earnings if they were in the labor force (Luft 1975).

The role of country of origin

To fully understand immigrants' economic integration in the U.S., it is important to consider the factors that may predict their progress. While immigrants' educational attainment, occupation, race/ethnicity can all play a role (Akresh 2008; Hu 2000; Villarreal and Tamborini 2018), their country of origin can predict these factors and contains other important information, such as the cost of migration (Borjas 1983; Duleep and Dowhan 2008; Jasso and Rosenzweig 1986). Immigrants' initial earnings differ largely by country of origin (Duleep and Dowhan 2008). The economic conditions of origin countries and immigrants' travelling costs can also be influential on immigrants' earnings in the U.S. (Jasso and Rosenzweig 1986). Since initial earnings are inversely correlated with earnings growth, country of origin is also an important predictor of the speed of earnings growth (Duleep and Regets 1996). Consistent with this, the

impact of country of origin on immigrants' dollar earnings diminishes as immigrants stay in the U.S. for longer (Duleep, Liu, and Regets 2014). Patterns of emigration also vary largely by country of origin. U.S. immigrants are more likely to return to rich countries and to countries that are closer to the United States (Borjas and Bratsberg 1996; Jasso and Rosenzweig 1982).

However, I am unaware of any research that explicitly examined immigrants' long-term earnings progression by country of origin. Previous research, often focusing on heterogeneity by cohort (Borjas 1985; Duleep and Dowhan 2002; Lubotsky 2007), by age at migration (Toussaint-Comeau 2006), by education (Villarreal and Tamborini 2018), and visa status (Akresh 2008; Cortes 2004) often highlighted that country of origin can also be an important predictor, but there are not enough observations of immigrants from each country. In this article, I explicitly set out to investigate how immigrants' long-term earnings progressions may differ by countries of origin.

Data and methods

I use social security earnings data for all male immigrants who obtained an SSN in 1978 who were aged 26~40 (n=80,113), and study how immigrants' earnings and employment status changed every five years[1] until they reach their mid-sixties. While a total of 100,500 male immigrants aged 26~40 gained an SSN in 1978, I exclude those who had zero earnings in all of the quinquennial years (n=20,387) to focus on those who were active in the U.S. labor market at least at one point.[2] In order to compare immigrants' earnings progression with that of the U.S.-

[1] While I have data on all individuals' annual earnings, I decided to only follow them at five-year intervals for the sake of brevity. As shown in my analysis later, patterns at five-year intervals are quite smooth, which I take as evidence for non-significant fluctuations within intervals.

[2] There are many reasons why an individual may have zero earnings in all years, or all quinquennial years after gaining an SSN. A large number of these individuals might have gained an SSN, worked in the U.S. for a short amount of time (less than a year), and left the country. Some were deceased; some were or became disabled; some have income from something other than work; some worked "off the books;" and a few could have obtained two SSNs and were working under the other SSN.

born, I also follow a sample cohort of U.S.-born individuals aged 26-40 in 1978 (n=215,614). I choose to focus on those who entered the labor market in 1978 for two reasons. First, 1978 was the year when the SSA began receiving data for all earnings and not just earnings covered by the Social Security Program; it was also the first year when data were reported to the SSA annually, rather than quarterly. In other words, data after 1978 are more consistent and covers a wider range of earnings. Second, starting in 1978 means that by 2017 (the year when this project began), the youngest individuals in my data (born in 1952) would be at least 65 years old. Since 65 is the standard full retirement age in the United States, tracking individuals until this point allows me to observe most individuals until the end of their working life. In addition, 65 is the age at which individuals, if in the U.S. and have worked for enough years, are eligible for Medicare. The SSA has data on individuals' enrollment status. Therefore, a scan of all individuals' statuses in 2017 can allow me to separate those who are definitely in the U.S. in 2017 from those who have likely emigrated.

All individuals are divided into three groups by age: 26~30, 31~35, and 36~40 in 1978. I divide individuals into groups in order to allow finer comparisons with age-specific U.S. earnings tertiles. Then, I track the youngest group of individuals from 1979 to 2014, the middle group from 1979 to 2009, and the oldest group from 1979 to 2004. In other words, I track all three groups until they are aged 62 to 67 years old. By tracking, I mean checking on individuals every five years (i.e. in 1979, 1984, 1989, 1994, 1999, 2004, etc.) to observe their transitions into different earnings category in the next five years (explained later in this section). I start my tracking in 1979 rather than in 1978 because immigrants may gain an SSN at various times in 1978, and 1979 would be their actual first full year in the U.S. labor market.

This paper primarily aims to understand immigrants' long-term earnings integration in the United States while directly taking into account exits from the labor market and emigration. Specifically, I study the share of individuals in different earnings states over time, and the transition probabilities of individuals into labor force exits conditioning on their earnings. I divide individuals' earnings into six exhaustive categories: bottom, middle, and top tertile earnings, temporary exits, permanent exits, and emigration.

Bottom, middle, and top tertile earnings

In order to make comparisons between immigrants and the U.S.-born, between immigrant sub-groups, and over time, I measure and follow individuals' relative position on the U.S. earnings distribution rather than their absolute earnings. I categorize individuals' earnings into age-, period-specific tertiles.[3] These are results from comparing an individual's age-, period-specific annual earnings with age- and period-specific tertile earnings of the U.S. population of men. For instance, to determine the earnings progress men aged 26~30 in 1979, I compare their annual earnings with the bottom, middle, and top tertile earnings on the earnings distribution of the entire U.S. population aged 26~30 in 1979. They are then coded to have bottom, middle, or top tertile earnings.

To distinguish non-employment from having low earnings, individuals with zero dollars of earnings in any particular year are coded differently. Depending on whether they have earnings in any years after that year, and whether individuals have status known to the SSA in 2017, individuals are then coded as having a "temporary exit" or a "permanent exit" from the U.S. formal labor force, or having permanently emigrated from the country.

[3] I divide the earnings distribution into tertiles rather than into finer categories mostly for the sake of simplicity, but it is also because the SSA data has a cap at the taxable maximum. This cap is typically around the fourth quartile on the earnings distribution.

Temporary Exit

If an individual has zero dollars of earnings in a particular year, but non-zero earnings in a later year, then the person is coded as having a "temporary exit" from the U.S. formal labor force in that year. "Temporary exit" means while the person is not in the U.S. formal labor force in a year, the exit is only temporary and they eventually return to the U.S. formal labor force for at least a year. This state captures temporary out-migration from the U.S. and temporary non-employment in the formal labor force.

Permanent Exit

If an individual has zero dollars of earnings in a particular year, and zero earnings in all following years, then their status is further determined by whether they have known status to the SSA in 2017. Known status includes the following: enrolled in Medicare; denied social security benefits; died; no qualification for Medicare; miscellaneous, but had been entitled to benefits (details available upon request). Some of these individuals may be incarcerated (Eberstadt 2017). Deaths are not listed as a separate category because while the SSA knows about some deaths (especially after 65), it does not have a complete record of deaths (Hill and Rosenwaike 2001). If an individual's status is known to the SSA in 2017, then they are coded as having permanently exited the U.S. formal labor force, but likely having stayed in the country.

Emigration

If an individual has permanently exited the labor force in a particular year, but the SSA has no record of them in 2017, then they are coded as having likely emigrated from the United States. It is possible that some individuals who did not emigrate from the U.S. are also included in this category: particularly those who gained an SSN, worked legally, and then started working off-the-books. Therefore, this paper likely overstates the scope of emigration. Since most

undocumented immigrants in the U.S. are from Mexico (Bean, Telles, and Lowell 1987), however, the number for immigrants from all other countries/areas should be less affected.

All possible transitions between the six earnings categories are shown in Figure 1. Transitions between bottom, middle, top tertile earnings and temporary earnings are always possible, while permanent exit and emigration are absorbing states, which means transitions out of these states are impossible.

One unique contribution of this paper is that I also examine the degree to which immigrants' labor force participation and earnings progression varies across countries of origin. I examined the specific cases of immigrants from the top 20 sending countries and areas (by population) in 1978. I first tabulated the average years immigrants were employed (adding together individuals in the three tertiles), and in temporary and permanent exits, by country of origin. I then tabulated the share of individuals in different earnings states over time by country of origin, and identified some similarities between countries. Table 1 is a list of the top 20 countries and the number of individuals aged 26-30 in the cohort. Together, individuals from the top 20 countries consist of 70% of the entire cohort of foreign-born men who gained an SSN in 1978.

Throughout this article, results are only displayed for the youngest group (those aged 26-30 in 1978). This is purely for the sake of brevity: with three age groups, the number of graphs would triple, but the patterns of the 31-35 and 36-40 groups are very similar to the 26-30 group (results available upon request). Table 2 is a description of foreign- and U.S.-born men's earnings states in 1979. As can be seen, the proportion of individuals in the three earnings tertiles are nearly identical across age groups.

Results

Who experiences temporary exits?

Figure 2 shows the probability of temporarily exiting the labor force for foreign- and U.S.-born men over time. It demonstrates several findings. First, temporary exit from the formal labor force is closely related to earnings. For both immigrants and the U.S.-born, those in the bottom tertile are at higher risks of temporarily leaving the labor market relative to those in the middle and top tertile. This could be because those with the lowest earnings are more likely to experience periods of unemployment and non-employment. Those in the middle and top tertiles have nearly identical patterns of temporary exits. Second, earnings predict temporary exit more strongly for immigrants than for the U.S.-born. While the patterns for those in the bottom tertile are similar by nativity, immigrants in the middle and top tertile are overall more likely to experience temporary exits than the U.S.-born. Third, the association between temporary exits, nativity and earnings seems to change over time. For U.S.-born men, patterns of temporary exits for individuals with different levels of earnings converge over time: while earnings is a strong predictor of temporary exits at the beginning of the observation period, or in individuals' late twenties / early thirties, the gap in temporary exits between those in the top and bottom tertile almost disappears by the 35th year, or around the end of individuals' careers. For immigrant men, patterns remain somewhat consistent over time.

In summary, immigrant men with low earnings are the most likely to experience temporary exits; U.S.-born men with earnings in the middle and top tertiles are the least likely to experience temporary exits. All individuals are more likely to temporarily leave the U.S. labor force at the beginning of their careers.

Who experiences permanent exits?

Figure 3 shows the probability of permanently exiting the labor force for foreign- and U.S.-born men over time. Similar to patterns of temporary exits, permanent exits are associated with individuals' earnings, nativity, and time in the labor force.

First, permanent exits from the U.S. formal labor force are overall more common among those in the bottom earnings tertile. This makes sense for several potential reasons: individuals with the lowest earnings are more likely to experience long-term non-employment; the lowest earners can be exposed to a set of socioeconomic disadvantages, putting them at higher risks of disability and death. Second, lower earnings is a slightly stronger predictor of permanent exits among the U.S.-born than among the foreign-born. It is evident among the U.S.-born that the probability of permanently leaving the formal U.S. labor force decreases with earnings; among immigrants, the differences by earnings are less pronounced. Third, time plays a role in the association between permanent exits, nativity and earnings. U.S.-born men have monotonically increasing probabilities of permanently leaving the labor force over time; this is also true for foreign-born men in the middle and bottom tertiles. For immigrants with high earnings, however, permanent exits are relatively high at both the beginning and the end of the observation period. In fact, at the very beginning of the observation period, those in the top tertile are even more likely to permanently drop out than those in the bottom tertile. However, this needs to be interpreted with caution since the difference is very small (only about 4%). Overall, it makes sense that the probabilities of permanently leaving the labor force increase with time: individuals get older and start to retire.

In summary, the probability of being permanently out of the labor force rises with time and decreases with earnings. Patterns do not seem to differ very much by nativity.

Who emigrates?

One of the most debated issues in the literature is whether and how foreign-born individuals' earnings are associated with their likelihood of emigrating from the United States. Figure 4 contributes to this debate by directly plotting the proportion of immigrants (likely) emigrating by their earnings tertile over time.

I find that decisions to leave the United States are indeed correlated with earnings. However, the actual correlation depends on the amount of time immigrants have already stayed in the United States. Emigration from the U.S. that occurs right after migration is the least correlated with earnings: those in the top and bottom tertile are equally likely to permanently out-migrate five years after their arrival in the U.S. After the fifth year, patterns are more stratified by earnings: those with the lowest earnings are overall the most likely to leave the United States. It is worth noting, however, that the probability of leaving does not decrease with earnings in a linear fashion. Those in the middle and top tertile have essentially identical probabilities of emigration after their tenth year in the U.S. labor force, while those in the bottom tertile are at slightly higher risks of emigrating.

Previous work has found that immigrants are the most likely to return home right after they migrate to the United States (Borjas and Bratsberg 1996; Duleep 1994). I find the same for the 1978 cohort: the probability of emigration is the highest five years after immigrants' arrival. About one in seven immigrant men in the top and bottom tertile, and about one in ten men in the middle tertile, have left by the fifth year. This is much lower than previously estimated (Borjas and Bratsberg 1996), likely because temporary exits are counted separately from permanent emigration in my data. In addition, I find that the probability of emigration sharply decreases

with time; after being in the U.S. for 20 years, the probability of leaving becomes very close to zero.

It is important to reemphasize that the "emigration" category may include individuals who did not actually leave the U.S. The individuals who "emigrated" by the fifth year, for example, may include immigrants who came to the U.S. on a visa and became undocumented through visa overstay. However, the number of individuals who transitioned into undocumented status should be small. The majority of undocumented immigrants in the U.S. are originally from Mexico (Bean et al. 1987), and Mexican immigrants take up 17% of the population of the 1978 migration cohort of men (Table 1). As I will show later, the proportion of Mexican immigrants who have permanently "emigrated" from the U.S. is about 20% at the end of the observation period. Even if all 20% are actually visa overstayers, they are only 3% of the whole population. Therefore, it is safe to assume that most of the immigrants in the "Emigration / unknown" category are emigrants.

The probability of "emigrating" for the U.S.-born men is nearly zero at all times, which is reassuring given what we know about the emigration rates of the native-born (Schachter 2006).

Immigrants' earnings progression

Figure 5 displays ways in which the share of individuals in different earnings states changes over time. The right-hand side of Figure 5 displays the earnings progression of U.S.-born men. At the beginning of the observation, about 30% of the population occupied each earnings tertile. Over time, the relative share of U.S.-born men in the three earnings tertiles remained about the same. This is as expected because the tertiles are calculated based on earnings of the entire U.S. population, and the U.S. population is mostly constituted of individuals born in the U.S. While the relative share of individuals in different earnings tertiles

remained the same, the overall share of individuals with any earnings gradually shrunk, as the share of individuals who have permanently left the U.S. labor force gradually expanded. The share of individuals experiencing temporary exits steadily declined over time, and the share of individuals in the emigration / unknown category remained close to zero over time.

The left-hand side of Figure 5 shows the earnings progression of immigrants. Consistent with previous research, foreign-born individuals enter the U.S. labor force with some disadvantages in earnings relative to the U.S.-born: about 60% of the population had bottom tertile earnings at the beginning of the observation period, while only about 20% of the population had middle and top tertile earnings. If immigrants experience earnings assimilation and catch up with the U.S.-born over time, one should expect that the share of individuals in the middle and top tertiles should increase over time. However, this was not quite the case for the 1978 cohort of immigrant men. While the share of individuals in the bottom tertile decreased over time, the share of individuals in the middle and top tertiles remained about the same; the only exception to this was a slight increase in the share of immigrants in the middle and top tertiles in the first five years. The share of individuals experiencing temporary exits declined over time; the share of immigrants who have emigrated from the U.S. increased dramatically in the first decade, and leveled off after that; the share of immigrants experiencing permanent exits increased slowly over time, accelerating as individuals approached standard retirement age. At the end of the observation period, individuals were 62-66 years old. About 20% of the population emigrated; about 30% permanently exited the labor force, most of whom did so after turning 50 years old; and about half were still working, with an even share of the population in each earnings tertile.

In general, examining the share of individuals in different earnings states does not reveal a clear story of immigrants' earnings assimilation. Instead, the major difference by nativity is that immigrants leave the formal U.S. labor force at a much faster pace than the U.S.-born, mostly driven by emigration.

Does country of origin matter?

A natural question flows from Figure 5. Is the graph of all immigrants a good representation of those from different countries and areas of origin?

Before examining the heterogeneity in foreign-born men's earnings progression, I first tabulate the average number of years immigrants spent (out of the 35 years between 1979 and 2017) being employed (i.e. having non-zero earnings) versus being temporarily and permanently out of the formal labor force, and being permanently out of the country. The goal of this is to use a clear-cut measure to compare employment behavior across immigrant subgroups. The results show stark differences across countries/areas of origin (Figure 6). The average number of years foreign-born men were employed ranges from 11.8 years (Japanese immigrants) to 28.3 years (Indian immigrants). Temporary exits seem much more common among those migrating from Dominican Republic and Mexico, who spent an average of 6.4 and 5.1 years outside the U.S. labor force only to come back later. Permanent exits from the labor force are more common among the U.S.-born than among immigrants: on average, foreign-born men spend about 3.6 years out of the labor force, compared with 5.2 years for the native-born. In fact, only three immigrant populations spend more years permanently out of the labor force than the U.S.-born: those from Japan, Portugal, and Dominican Republic. Overall, Figure 6 shows that country of origin plays an important role in shaping immigrants' employment behavior in the United States.

In previous studies that only focused on immigrants who stayed in the U.S. for at least a decade, those from Canada, Japan, Germany and Poland have likely been underrepresented.

Figure 7 is similar to Figure 5 and compares the share of individuals in different earnings states over time, but for all top 20 sending countries/areas. Patterns are very heterogeneous across countries/areas of origin. I identify four groups based on the commonalities between countries/areas. Table 3 is a comparison of the four groups on some basic characteristics. Group 1 includes immigrants that can be characterized as "high earners, early leavers". These immigrants, perhaps not surprisingly, were mostly from economically developed countries, including Germany, Canada, the United Kingdom, and Japan. Less than 30% of the population arrived with earnings in the bottom tertile, and more than 30% of the population arrived with earnings in the top tertile. In other words, many of these immigrants landed in the U.S. labor force already at the top of the economic ladder. Their stay in the U.S. tend to be quite short-term, as many had already permanently emigrated by the end of the fifth year; at age 62-66 (the end of the 35-year observation period), less than 70% were still in the United States.

Immigrants in Group 2 and 3 have completely different trajectories than the high-earning individuals in Group 1. These two groups of immigrants both have relatively low earnings upon arrival: about 70% of them had initial earnings in the bottom tertile, and barely any had initial earnings in the top tertile. Group 2 and 3, however, have very different progressions over time. Those in Group 2 experienced significant stagnation in their earnings growth. Over time, the share of individuals in the top and middle tertiles hardly expanded, and the share of individuals in the bottom tertile shrunk as more leave the labor force permanently. Group 2 is also marked with the highest levels of temporary exits of all four groups, consistently so over time. Perhaps

uncoincidentally, individuals in this group were from three countries that are geographically close to the United States: Dominican Republican, Mexico, and Haiti.

In contrast to Group 2, individuals in Group 3 display very high levels of upward mobility. The share of individuals in the middle and top tertiles expanded over time, especially between the fifth and the 20th year after arrival. At the same time, there are also a large share of leavers: about 20% of the population had already permanently left the U.S. by the fifth year. By the time individuals were aged 62-66, only less than three-fourth of the immigrants were still in the U.S. Overall, Group 3 displays the most optimistic picture of immigrant assimilation, much like a typical description of the American Dream: with persistence, those at the bottom of the earnings distribution can move up and become part of the middle (or even upper) class. There are only two countries in this group: Iran and Nigeria.

Finally, Group 4 includes immigrants who tend to also arrive with lower levels of earnings (40-50% in the bottom tertile upon arrival; those from China being the only exception) and experience moderate levels of upward mobility. There was some expansion in the share of individuals in the middle and top tertiles, but not as dramatic as it was for those in Group 3. Another major characteristic of individuals in this group is that their permanent exits from the U.S. labor force are rather delayed: by the 20th year, at least 70% of the population were still active in the labor force. This is especially pronounced in the cases of India, where three in four men who arrived in 1978 were still in the labor force in 2017. In addition, individuals in this group, together with those in Group 2, have a relatively small share of individuals emigrating from the U.S. Over 90% of the individuals from India, Russia (the U.S.S.R. at the time), the Philippines, Jamaica, and China were still in the U.S. when they were 62-66 years old.

Three immigrant populations did not belong in any of the four groups: those from Italy, Poland, and Taiwan. Foreign-born men from Italy and Poland displayed patterns similar to each other, where individuals arrived with various levels of earnings, experienced early exits from the labor force, and did not display clear patterns of upward mobility. Those from Taiwan presented a rather distinct case: one in four immigrants were in temporary exit at the beginning of the observation. This means a sizable share of men from Taiwan came to the U.S. in 1978 and gained an SSN, but did not start working in the labor force until later.

Together, Figure 6 and 7 shows that country of origin plays a significant role in immigrants' earnings progressions in the United States. Immigrants from different countries/areas start with different earnings profiles (e.g. Group 1 vs. Group 3). Even when they start with relatively similar profiles, their earnings progression can unfold in very different ways (Group 2 vs. Group 3).

Summary and discussion

In previous work on immigrants' earnings, exits from the labor force (emigration in particular) have been considered as a source of bias. A common practice has been to leave out a fraction of the population, intentionally or unintentionally, and study only those who consistently remained in the U.S. labor force for a few decades. This research shows that leaving out part of the population can result in leaving out immigrants with lower earnings (Figure 2, 3 and 4), and immigrants from certain countries/areas of origin (Figure 6). When exits from the labor force are taken into account, it is much harder to see a story of immigrants' earnings growth: instead, the story of immigrants' economic integration is more about them leaving than staying and thriving (Figure 5). Accounting for temporary and permanent labor market exits highlights the complexities inherent in translating the American Dream into economic reality.

This research also highlights the important role of country of origin in shaping immigrants' earnings progression. While the experience of all immigrants to the U.S. in 1978 can be summarized in some way (Figure 5), it does not represent the particular case of immigrants from any country of origin. In fact, the top five origins of immigrants -- Mexico, Iran, India, Taiwan, and Japan, who make up for 35% of all men in the cohort -- are in five distinct groups when it comes to earnings progression patterns (Figure 7). The stories of individuals from different origins can be completely different, if not opposite from one another. Some came from economically developed countries with a short-term job in the U.S. (e.g. British and Japanese), while others came with much lower socioeconomic capital, aiming to work in the U.S. for a long time (e.g. Filipinos). Among those who likely came with a hope to improve their earnings, many have moderate success (e.g. Egyptians, Russians), some have great success (Iranians and Nigerians), while some experience much stagnation on their way to the middle class (e.g. Haitians). While immigrants from Mexico and the Caribbean tend to be in and out of the U.S. labor force, those from further away (e.g. India and the Philippines) tend to stick around once they have made the move.

This study has several limitations. First, by directly using SSA earnings records, I cannot account for some important predictors of earnings, such as race/ethnicity, educational attainment and occupation. These factors have been covered in previous work (Hu 2000; Lubotsky 2007; Villarreal and Tamborini 2018). The data I use lack detailed demographic information but have the benefit of full population sampling, which allows me to assess differences by country of origin. Second, I could not include female immigrants in this study. This is purely due to data limitations (unfortunately, data on women are not available to me at this point). Previous research on immigrant earnings has almost completely excluded women from the analysis, since

immigrant women may have more selective labor force participation than native-born women (Duleep and Dowhan 2002; Lubotsky 2007; Villarreal and Tamborini 2018). However, this is exactly a reason why it is important to understand the case of women and the degree to which they experience different challenges in their integration into the U.S. economy.

This study has focused on the case of foreign-born men in 1978, a cohort for which previous research has found clear signs of earnings assimilation (Hu 2000; Lubotsky 2007). There are several reasons why I may fail to replicate evidence of earnings assimilation in this study, one of which is that I only observe inter-tertile changes in individuals' earnings. Most importantly, however, my results are different because many individuals omitted from previous studies were intentionally retained in my analysis: short-term workers and workers that go in and out of the labor force. Longitudinal studies of immigrant earnings tend to yield more conservative estimates of immigrants' earnings growth than cross-sectional ones; this study shows that when we truly follow all foreign-born individuals who ever worked in the U.S., there may be even less evidence of the American Dream. The story, however, is actually much more complex: the U.S. immigrant population is a mix of individuals from various origins, with various starting points, and completely different progressions over time. Scholars and policy makers should keep in mind that "the average immigrant" fails to represent any specific immigrant in reality.

References:

Akresh, Ilana Redstone. 2008. “Occupational Trajectories of Legal U.S. Immigrants: Downgrading and Recovery.” *Population and Development Review* 34(3):435–56.

Bean, Frank D., Edward E. Telles, and B. Lindsay Lowell. 1987. “Undocumented Migration to the United States : Perceptions and Evidence.” *Population and Development Review* 13(4):671–90.

Borjas, George J. 1983. “Self-Selection and the Earnings of Immigrants.” *The American Economic Review* 77(4):531–53.

Borjas, George J. 1985. “Assimilation, Changes in Cohort Quality, and the Earnings of Immigrants.” *Journal of Labor Economics* 3(4):463–89.

Borjas, George J. and Bernt Bratsberg. 1996. “Who Leaves? The Outmigration of the Foreign-Born.” *The Review of Economics and Statistics* 78(1):165–76.

Camarota, Steven and Karen Zeigler. 2016. *Immigrants in the United States: A Profile of the Foreign-Born Using 2014 and 2015 Census Bureau Data*. Center for Immigration Studies.

Chiswick, Barry R. 1978. “The Effect of Americanization on the Earnings of Foreign-Born Men.” *Journal of Political Economy* 86(5):897–921.

Chiswick, Barry R. 1982. “The Economic Progress of Immigrants: Some Apparently Universal Patterns.” Pp. 119–58 in *The gateway: U.S. immigration issues and policies.*, edited by B. R. Chiswick. Washington, D.C.: American Enterprise Institute for Public Policy Research.

Clark, William A. V. 2003. *Immigrants and the American Dream: Remaking the Middle Class*. New York, N.Y.: Guilford Press.

Cortes, Kalena E. 2004. “Are Refugees Different from Economic Immigrants? Some Empirical Evidence on the Heterogeneity of Immigrant Groups in the United States.” *Review of Economics and Statistics* 86(2):465–80.

DaVanzo, Julie. 1983. “Repeat Migration in the United States: Who Moves Back and Who Moves On?” *The Review of Economics and Statistics* 65(4):552–59.

Duleep, Harriet Orcutt. 1994. “Social Security and the Emigration of Immigrants.” *Social Security Bulletin* 57(1):37–52.

Duleep, Harriet Orcutt and Daniel J. Dowhan. 2002. “Insights from Longitudinal Data on the Earnings Growth of U.S. Foreign-Born Men.” *Demography* 39(3):485–506.

Duleep, Harriet Orcutt and Daniel J. Dowhan. 2008. “Research on Immigrant Earnings.” *Social Security Bulletin* 68(1):31–50.

Duleep, Harriet Orcutt, Xingfei Liu, and Mark Regets. 2014. *Country of Origin and Immigrant Earnings, 1960-2000: A Human Capital Investment Perspective*. IZA Discussion Paper No.8628.

Duleep, Harriet Orcutt and Mark Regets. 1996. "Earnings Convergence: Does It Matter Where Immigrants Come From or Why?" *The Canadian Journal of Economics* 29(Special Issue : Part 1):S130–34.

Eberstadt, Nicholas. 2017. "Where Did All the Men Go? The Rise of the Unworking." *Milken Institute Review, Quarter* 2.

Engelman, Michal and Heide Jackson. 2017. *Gradual Change or Punctuated Equilibrium? Reconsidering Patterns of Health in Later-Life*. CDE Working Paper No.2017-01.

Garip, Filiz. 2012. "Discovering Diverse Mechanisms of Migration: The Mexico–US Stream 1970–2000." *Population and Development Review* 38(3):393–433.

Harris, John R. and Michael P. Todaro. 1970. "Migration, Unemployment and Development: A Two-Sector Analysis." *The American Economic Review* 60(1):126–42.

Hill, Mark E. and Ira Rosenwaike. 2001. "The Social Security Administration's Death Master File: The Completeness of Death Reporting at Older Ages." *Social Security Bulletin* 64(1):45–51.

Hochschild, Jennifer L. 1996. *Facing up to the American Dream: Race, Class, and the Soul of the Nation*. Princeton, N.J.: Princeton University Press.

Van Hook, Jennifer and Weiwei Zhang. 2011. "Who Stays? Who Goes? Selective Emigration among the Foreign-Born." *Population Research and Policy Review* 30(1):1–24.

Van Hook, Jennifer, Weiwei Zhang, Frank D. Bean, and Jeffrey Passel. 2006. "Foreign-Born Emigration: A New Approach and Estimates Based on Matched CPS Files." *Demography* 43(2):361–82.

Hu, Wei Yin. 2000. "Immigrant Earnings Assimilation: Estimates from Longitudinal Data." *American Economic Review* 90(2):368–72.

Jackson, Heide, Michal Engelman, and Karen Bandeen-Roche. 2017. "Robust Respondents and Lost Limitations: The Implications of Nonrandom Missingness for the Estimation of Health Trajectories." *Journal of Aging and Health* 1–24.

Jasso, Guillermina and Mark R. Rosenzweig. 1982. "Estimating the Emigration Rates of Legal Immigrants Using Administrative and Survey Data: The 1971 Cohort of Immigrants to the United States." *Demography* 19(3):279–90.

Jasso, Guillermina and Mark R. Rosenzweig. 1986. "What's in a Name? Country-of-Origin Influences on the Earnings of Immigrants in the United States." *Research in Human Capital and Development* 4:75–106.

Krueger, Alan. 2017. “Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate.” *Brookings Papers on Economic Activity* 2017(2):1–81.

Lindstrom, David P. 1996. “Economic Opportunity in Mexico and Return Migration from the United States.” *Demography* 33(3):357–74.

Lindstrom, David P. and Douglas S. Massey. 1994. “Selective Emigration, Cohort Quality, and Models of Immigrant Assimilation.” *Social Science Research* 23(4):315–49.

Lubotsky, Darren H. 2007. “Chutes or Ladders? A Longitudinal Analysis of Immigrant Earnings.” *Journal of Political Economy* 115(5):820–67.

Luft, Harold S. 1975. “The Impact of Poor Health on Earnings.” *The Review of Economics and Statistics* 57(1):43–57.

Markides, Kyriakos S. and Karl Eschbach. 2005. “Aging, Migration, and Mortality: Current Status of Research on the Hispanic Paradox.” *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 60(Special Issue 2):S68–75.

Massey, Douglas S., Karen A. Pren, and Jorge Durand. 2016. “Why Border Enforcement Backfired.” *American Journal of Sociology* 121(5):1557–1600.

Park, Kyeyoung. 1997. *The Korean American Dream: Immigrants and Small Business in New York City*. Ithaca, N.Y.: Cornell University Press.

Pryor, Frederic L. and David L. Schaffer. 2000. *Who’s Not Working and Why: Employment, Cognitive Skills, Wages, and the Changing US Labor Market*. Cambridge, U.K.: Cambridge University Press.

Reagan, Patricia B. and Randall J. Olsen. 2000. “You Can Go Home Again: Evidence from Longitudinal Data.” *Demography* 37(3):339–50.

Redstone, Ilana and Douglas S. Massey. 2004. “Coming to Stay: An Analysis of the US Census Question on Immigrants’ Year of Arrival.” *Demography* 41(4):721–38.

Riosmena, Fernando. 2004. “Return versus Settlement among Undocumented Mexican Migrants, 1980 to 1996.” Pp. 265–80 in *Crossing the border: Research from the Mexican migration project*, edited by J. Durand and D. S. Massey. New York, N.Y.: Russell Sage Foundation.

Schachter, Jason P. 2006. “Estimation of Emigration from the United States Using International Data Sources.” Pp. 4–7 in *United Nations Expert Group Meeting on measuring international migration: Concepts and methods*. New York, N.Y.: United Nations Secretariat, Department of Economic and SocialAffairs, Statistics Division.

Stark, Oded and David E. Bloom. 1985. “The New Economics of Labor Migration.” *The American Economic Review* 75(2):173–78.

Todaro, Michael P. and Lydia Maruszko. 1987. “Illegal Migration and US Immigration Reform: A Conceptual Framework.” *Population and Development Review* 13(1):101–14.

Toussaint-Comeau, Maude. 2006. “The Occupational Assimilation of Hispanic Immigrants in the U.S.: Evidence from Panel Data.” *International Migration Review* 40(3):508–36.

Treas, Judith and Zoya Gubernskaya. 2015. “Immigration, Aging, and the Life Course.” Pp. 143–61 in *Handbook of Aging and the Social Sciences*, edited by K. Ferraro and L. George. Academic Press.

Turra, Cassio M. and Irma T. Elo. 2008. “The Impact of Salmon Bias on the Hispanic Mortality Advantage: New Evidence from Social Security Data.” *Population Research and Policy Review* 27(5):515–30.

Villarreal, Andrés and Christopher R. Tamborini. 2018. “Immigrants’ Economic Assimilation: Evidence from Longitudinal Earnings Records.” *American Sociological Review* 83(4):686–715.

Warren, Robert and Ellen Percy Kraly. 1985. *The Elusive Exodus: Emigration from the United States*. Washington, D.C.: Population Reference Bureau.

Figure 1. Possible transitions between six earnings states

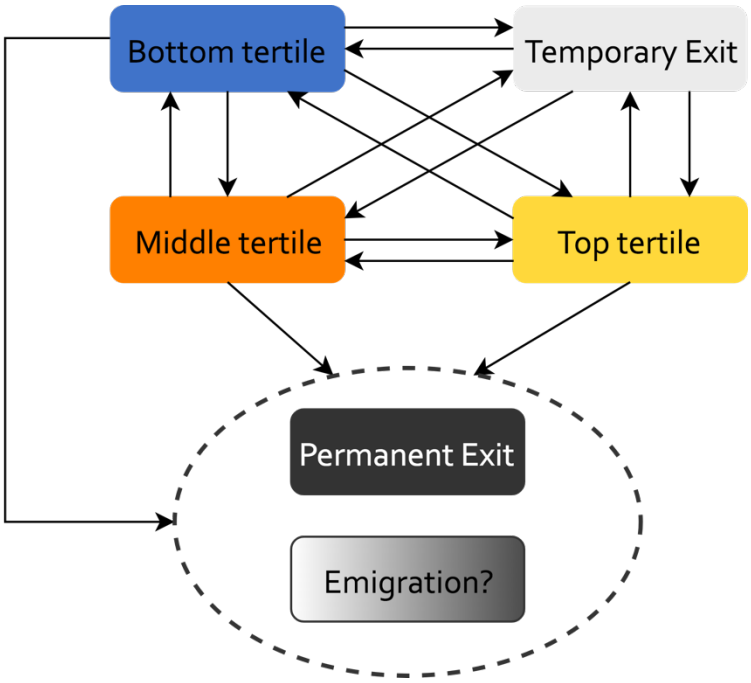


Table 1. Population sizes of immigrants from the top 20 sending countries/areas in 1978 (aged 26-30)

	Population Size	Proportion of all immigrants in the cohort
Mexico	7,247	0.17
Iran	2,640	0.06
India	1,825	0.04
Taiwan	1,752	0.04
Japan	1,575	0.04
Dominican Republic	1,544	0.04
The Philippines	1,527	0.04
South Korea	1,449	0.03
The United Kingdom	1,292	0.03
China	1,047	0.03
Poland	1,040	0.02
Haiti	968	0.02
Canada	962	0.02
Jamaica	846	0.02
Nigeria	805	0.02
Russia (the U.S.S.R.)	653	0.02
Portugal	600	0.01
Egypt	473	0.01
Italy	468	0.01
Germany	372	0.01
Total	29,085	0.70

Table 2. Descriptive statistics of the population of foreign-born men and the sample of U.S.-born men in 1979, by age group in 1978

	Foreign-born			U.S.-born		
	26~30	31~35	36~40	26~30	31~35	36~40
Initial earnings tertile						
Bottom Tertile	0.57	0.58	0.59	0.30	0.30	0.30
Middle Tertile	0.18	0.14	0.12	0.30	0.30	0.31
Top Tertile	0.10	0.13	0.14	0.31	0.31	0.31
Temporary Exit	0.15	0.15	0.15	0.09	0.09	0.09
Permanent Exit	0	0	0	0	0	0
Emigration/Unknown	0	0	0	0	0	0
N	41,680	23,899	14,534	86,913	72,362	56,339

Figure 2. Probability of temporarily exiting the labor force over time, Foreign- vs. U.S.-born men

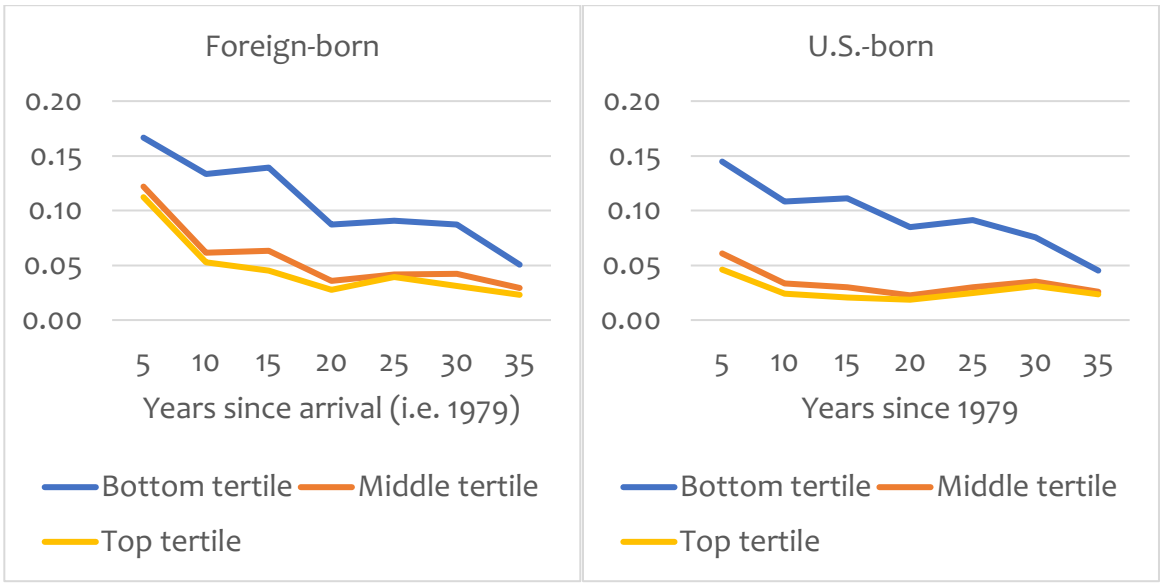


Figure 3. Probability of permanently exiting the labor force over time, Foreign- vs. U.S.-born men

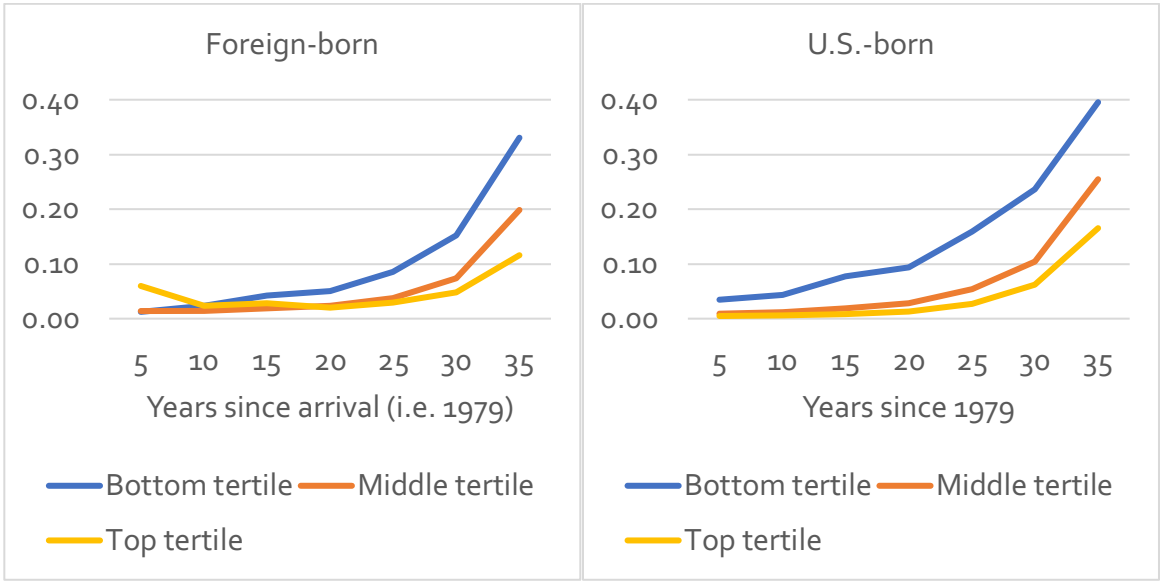


Figure 4. Probability of (likely) emigrating permanently over time, Foreign- vs. U.S.-born men

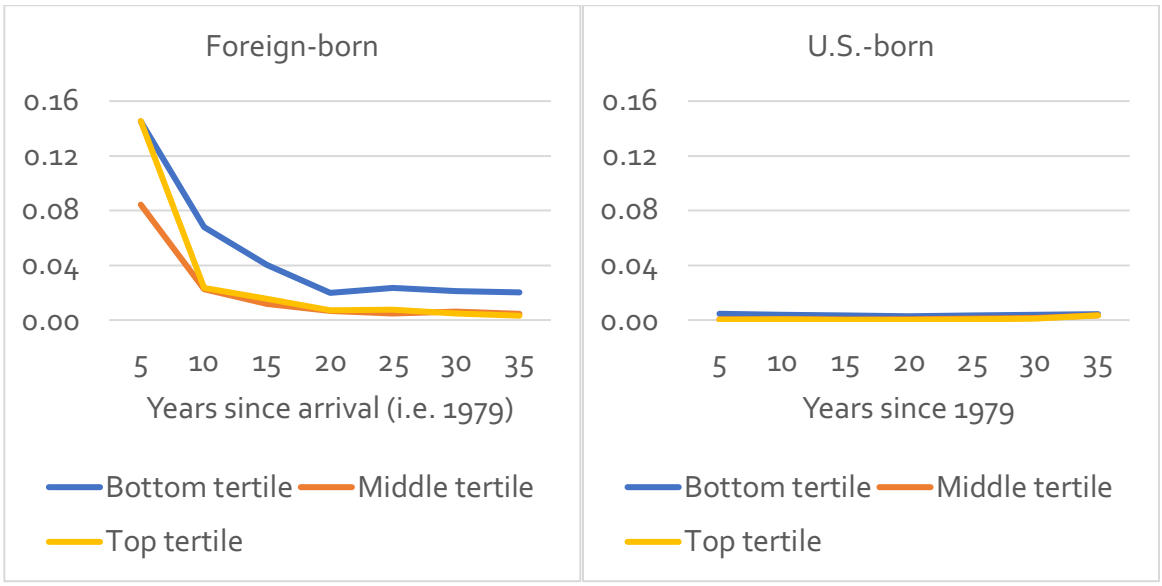


Figure 5. Share of individuals in different states over time, Foreign- vs. U.S. -born men

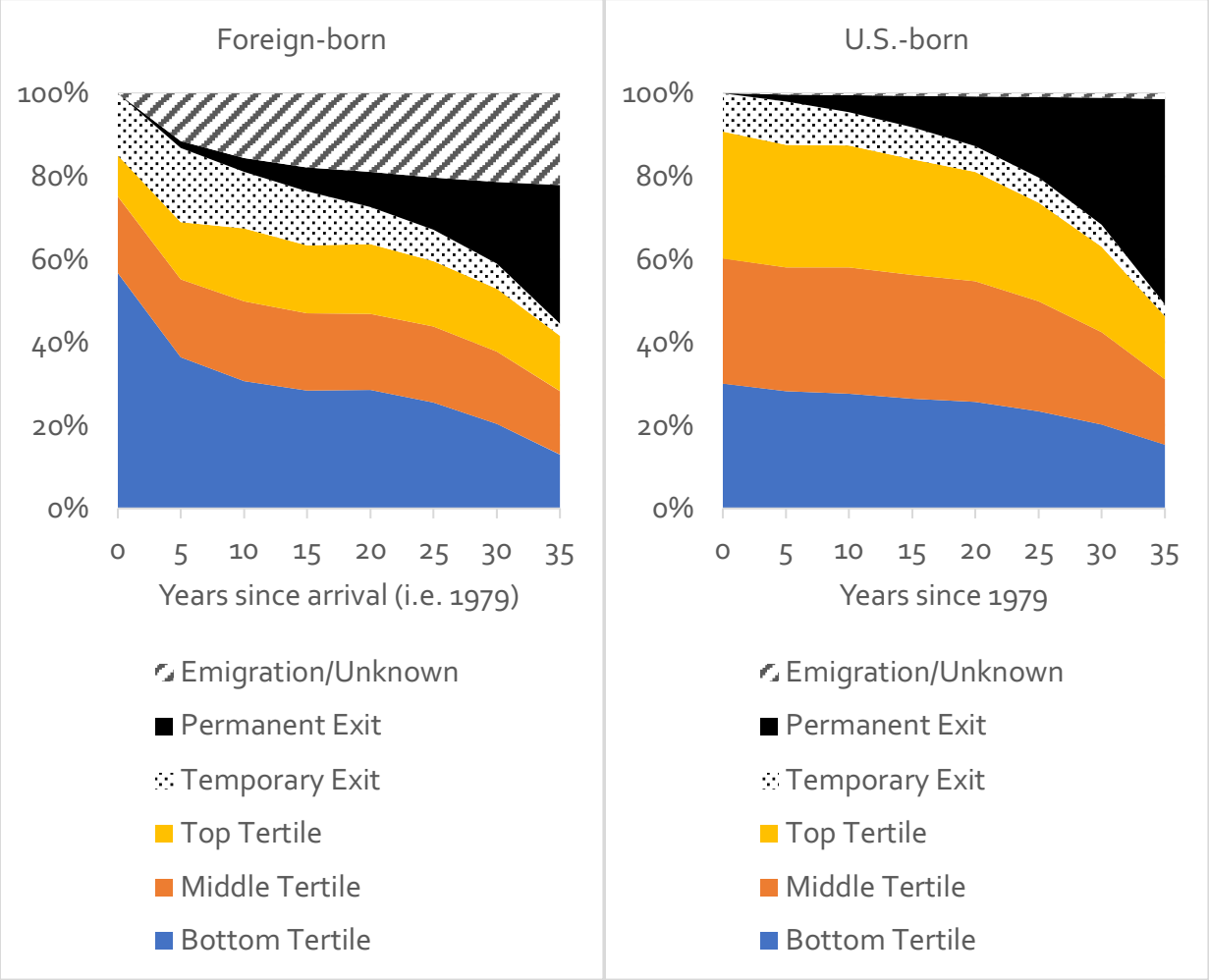


Figure 6. Average years of individuals being employed and experiencing temporary and permanent exits

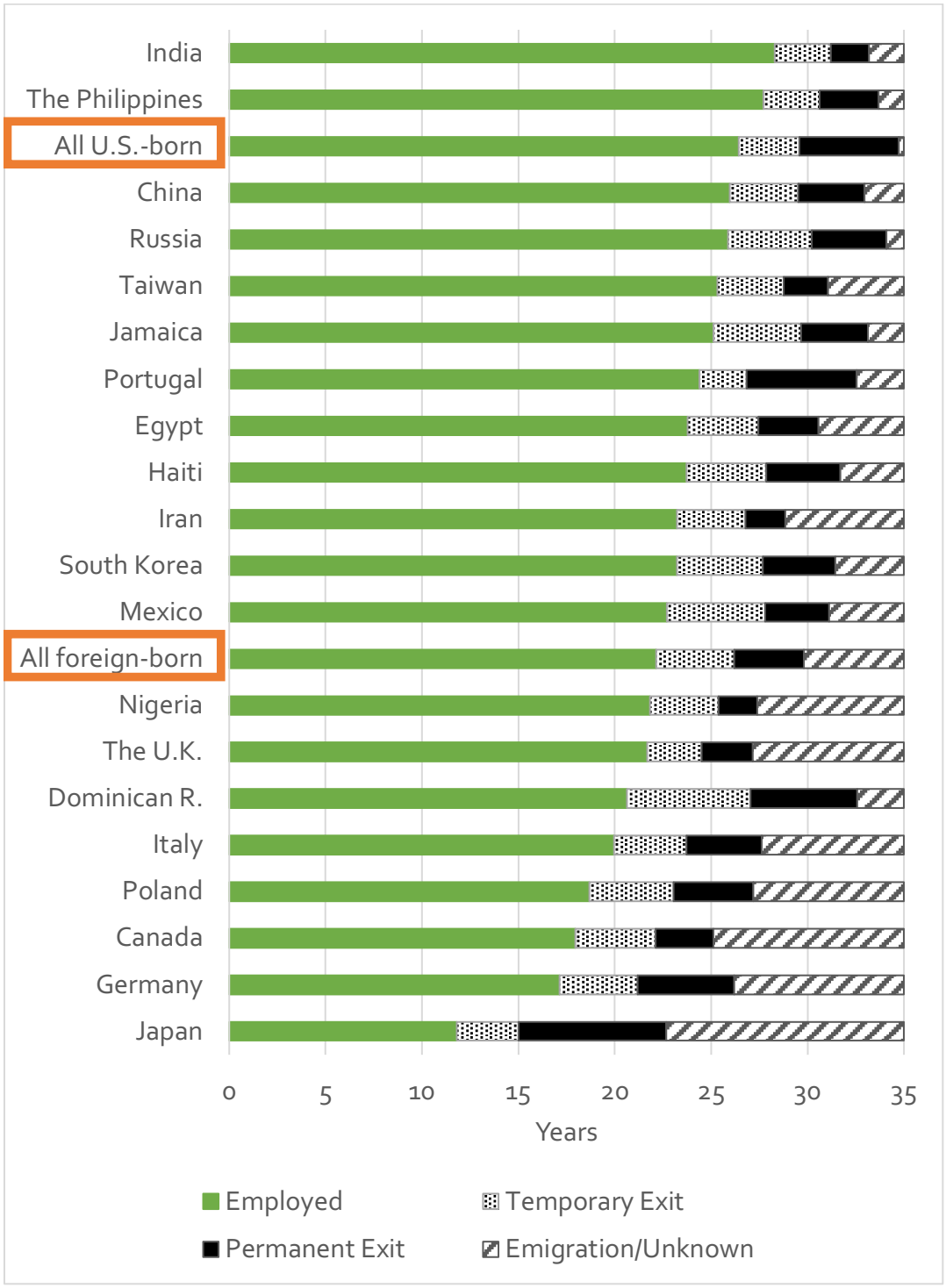
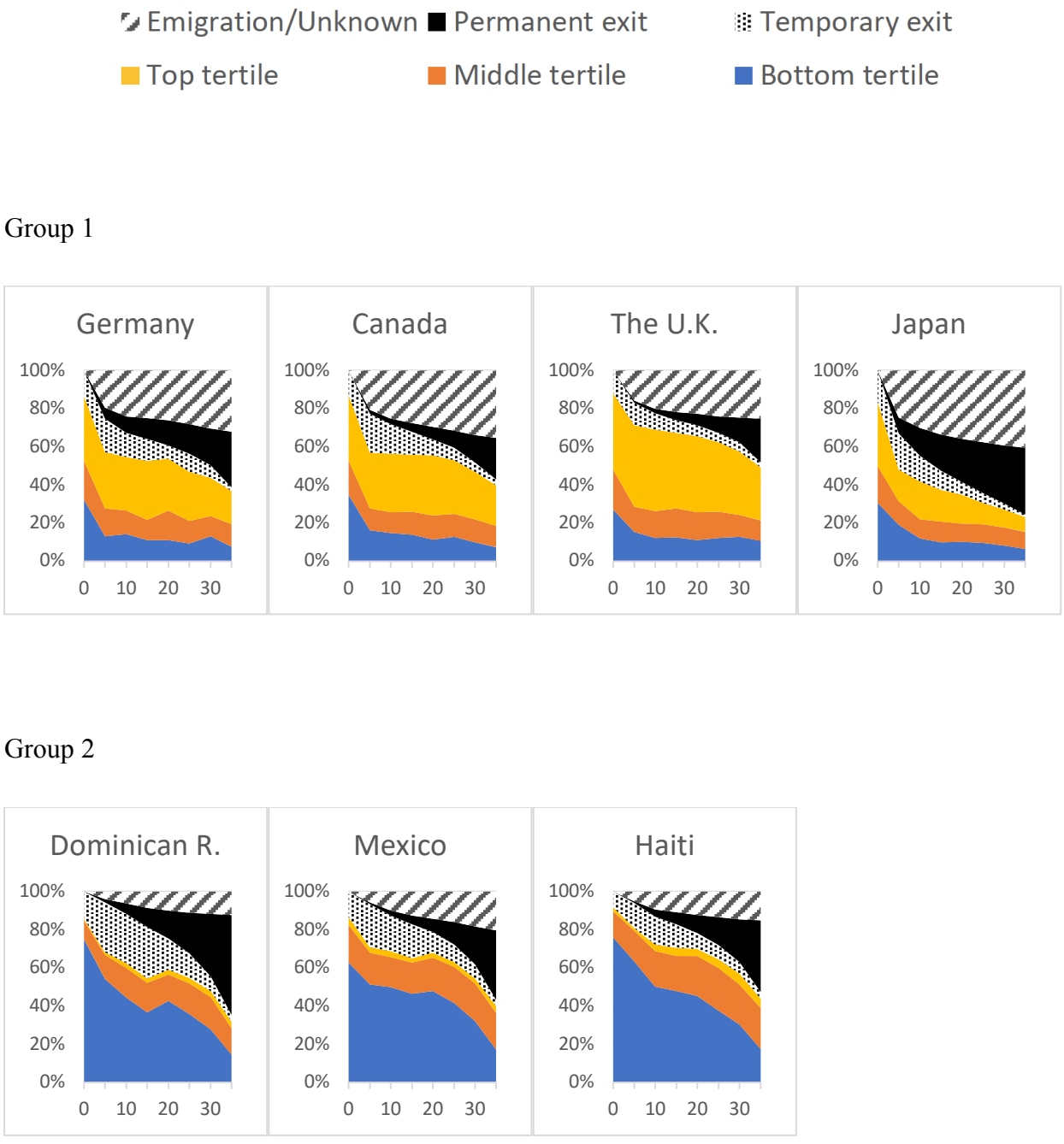
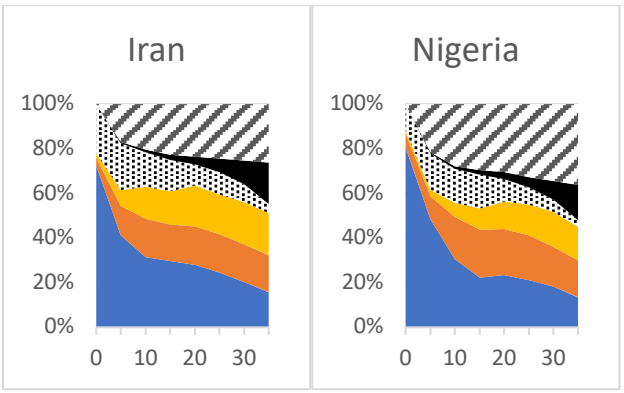


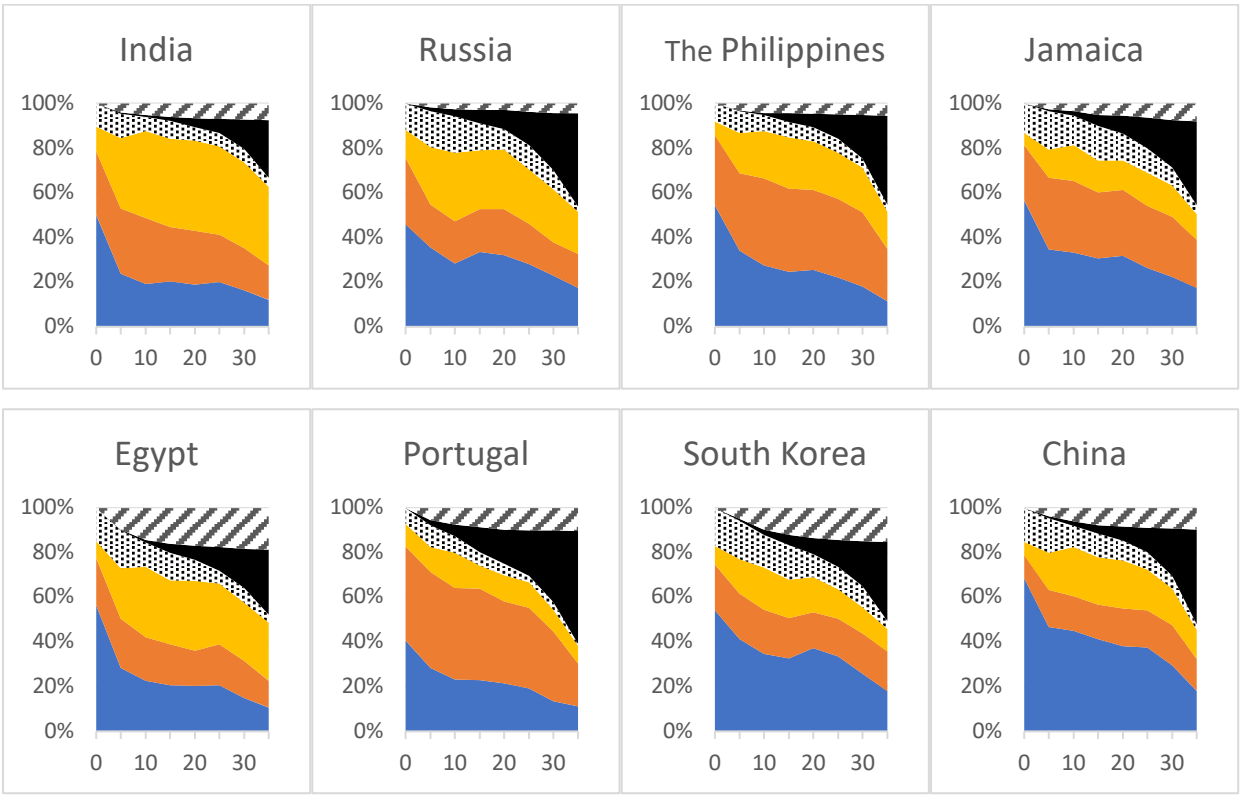
Figure 7. Share of individuals in different earnings states over time, by country of origin (x-axis: years since arrival)



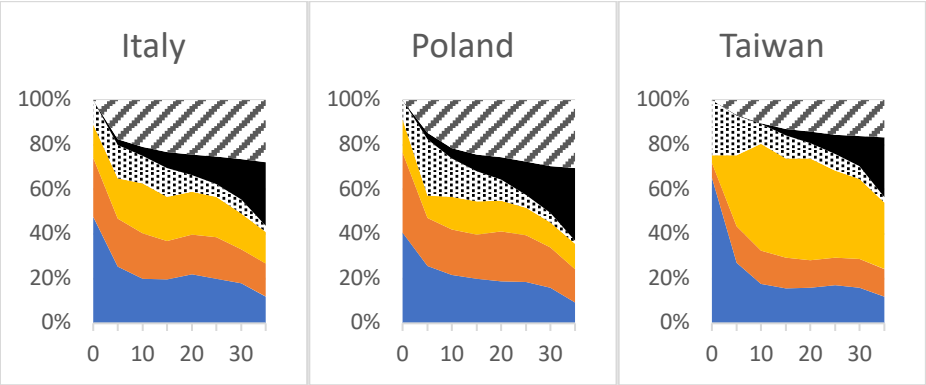
Group 3



Group 4



Ungrouped


Italy
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30

Table 3. Basic description of the four groups in Figure 7

	% Bottom tertile upon arrival	% Top tertile upon arrival	% Emigrated by fifth year	Upward mobility?
Group 1	30% or below	30% or above	20% or above	Low
Group 2	60% or above	3% or below	5% or less	Low
Group 3	65% or above	Almost none	20% or above	Very high
Group 4	40-50%	About 10%	10% or less	Moderate