

ASSIMILATION OF US FEMALE IMMIGRANTS: A COHORT APPROACH

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Abstract

This paper explores changes in labor market conditions, specifically labor force participation and employment rates among US female immigrants from 1970 to 2019. Our analysis reveals two interesting findings. First, there is a cohort effect in the labor market conditions of female immigrants, with more recent immigrants having relatively lower labor force participation rates and employment rates than earlier cohorts at entry. Second, there is an acceleration in assimilation, with the more recent cohort of female immigrants assimilating faster than the earlier cohort in the labor market; assimilation is steepest for female immigrants arriving in 2005-2011. These patterns persist after accounting for education, marital status, children, country of origin, and state of residence, indicating that composition alone does not drive the results. Our findings imply that early, targeted investments in US -specific human capital may pay off such as recognition of foreign credentials and experience, English language acquisition, and access to affordable childcare can reduce initial barriers, while place-based support in new-destination states may further accelerate labor force attachment and employment. Overall, despite larger initial shortfalls at arrivals, recent cohorts close gaps more quickly than earlier cohorts, underscoring the importance of policies that ease entry and facilitate rapid integration.

Keywords: Female immigrants; Labor market assimilation; Cohort analysis; Labor force participation; Employment outcomes.

Introduction

The United States (US) is undoubtedly the epicenter of immigration in the world, where economic prospects attract immigrants. Since the implementation of the 1965 Immigration and Nationality Act (INA)¹, the number of individuals who have immigrated to the US has increased more than fourfold. According to the Pew Research Center, immigrants accounted for 13.1% of the US population in 2013, almost triple the share of 4.8% in 1970. Of primary interest to policymakers is whether immigrants in the US successfully integrate into the American society over time. However, the existing body of literature on economic assimilation, while large, has focused mainly on the experience of immigrant men (Chiswick, 1978, 1980; Borjas, 1982, 1985, 1995, 2015).

¹ The Immigration and Nationality Act of 1965 is a federal law which was passed by US Congress to obliterate the de facto discrimination against Eastern and Southern Europeans, Asians, and other non-Northwestern European ethnic groups from American immigrant policy. The Act gave priority to relatives and children of US citizens and legal permanent residents, professionals and other specialized skilled workers and refugees. Additionally, the Act maintained aggregate immigration limits, but provisions were made to exempt immediate relatives of US citizens from this restriction.

Despite the economic contribution and the burgeoning size of female immigrants transitioning into the US workforce, we know little of their labor market performance. In recent times, immigrant women from the Philippines, El Salvador, Vietnam, the Dominican Republic, and Colombia have a higher labor force participation rate than US-born women². The few essential first-generation studies that investigated the assimilation of women found that, in general, there is positive assimilation on labor force participation and hours worked (Long, 1980; Reimers, 1985; Baker and Benjamin, 1994; Duleep and Sanders, 1993).

This study focuses on how the labor force participation and employment outcomes of immigrant women change with their duration in the US and whether that change has evolved across cohorts. This study is essential for two reasons. First, the rate of immigrants in the US has been and continues to grow steadily, forming a significant share of the US population. There is ample evidence to suggest that immigrant women face various challenges in the job market, including limited opportunities for high-status positions, lower pay, and barriers to realizing the full returns of their education (Takaki, 1987; Wilkinson et al., 2006). Some studies conducted in the US have also indicated that women who are black, Hispanic, or immigrants are disproportionately represented in low-paying and low-status clerical or service jobs relative to their US-born counterparts (Takaki, 1987; Schoeni, 1998; Hondagneu-Sotelo, 1999; Wilkinson et al., 2006). Second, different country of origins might matter due to differences in culture, especially as it relates to female labor force participation and employment (Blau et al., 2011). We build on Schoeni (1998) and Funkhouser et al. (1998), who found that all the previous cross-sectional studies on women's labor force participation overstated the true assimilation rate. Thus, the cohort strategy results in lower assimilation estimates, although the effects are still substantial.

We contribute to the literature by updating the existing picture of assimilation to the very recent cohorts by adding nearly three decades of information to the data. This update is important because the nature of migration to the US has changed substantially over time (especially in the 20th century), notably with an initial movement away from European toward Latin American immigrants and recently an increase in Indian, East Asian, and African immigrants. These immigrant women might have different experiences in the US. Therefore, updating the literature will give policymakers a historical view and the current picture of the initial gap and the rate of economic assimilation of recently arriving immigrants. Suppose there is a persistent slowdown in the economic assimilation of recent immigrants relative to older cohorts. In that case, it may point to source country characteristics or recent immigrants facing more difficulties, discrimination, or barriers to participation in the labor market, which

² Visit <https://www.americanimmigrationcouncil.org/research/immigrant-women-and-girls-united-states> for more details.

would justify an effort to identify the causes of such deterioration. On the other hand, if recent immigrants are rapidly assimilating towards the economic status of natives, then we can invoke that individuals immigrating to the US for economic purposes have strong incentives to allocate a significant portion of their investment toward accumulating US - specific human capital skills.

Using the 1970-2019 US Integrated Public Use Microdata Series (IPUMS), this paper finds that the more recent cohorts have had larger initial gaps than earlier cohorts in the US labor market outcomes. However, the relationships between labor market outcome gaps and years since migration have changed between earlier and more recent cohorts. Although these more recent cohorts started with significant initial gaps, they experienced steep convergence rates with years since migration. The 2005-2011 cohort experienced the fastest assimilation rate in labor force participation and employment outcome with time since migration in the US compared to the 1975-79 cohort.

The next sections review the relevant literature, detail our cohort-based identification, and present evidence (Tables 2 – 5) showing that initial entry gaps coincide with steeper post-entry convergence for more recent cohorts – the core claim we return to in the conclusion.

Literature Review

The existing body of the literature, while large, has focused mainly on the experience of immigrant men. Chiswick (1978) examined the differences in the earnings experiences of US native and immigrant white men using the 1970 decennial. In general, Chiswick (1978) documents that during the initial post-migration period, white immigrant men have lower earnings relative to white native men. However, this earnings disadvantage dissipated, and after roughly 10 – 15 years in the labor market, white immigrant men earnings equate and eventually surpass the earnings of white native men. Complementing Chiswick's study and focusing on a subset of immigrants, Borjas (1982) measured the extent of differences in the rate of economic mobility among various male Hispanic immigrant groups. Borjas (1982) findings indicate that the earnings of Hispanic immigrant as a single group is positively correlated with years since immigration and there are major differences in the rate of economic mobility of various Hispanic groups. Other studies using cross-sectional analyses, including Carliner (1980) and DeFreitas (1980), essentially confirm the pattern of immigrant earnings during the post-migration period and the earnings differential among immigrant groups.

Borjas (1985) discusses the limitations in the cross-sectional analysis, that is, these analyses confound assimilation impact with possible "quality" differentials among immigrant cohorts (Borjas, 1994, 1995; Schoeni, 1998; Smith, 2004). A single cross-

sectional analysis inherently has an issue of not being able to separately control for an immigrant's year of arrival and their duration in the US. Immigrants from the same country arriving in the US at different periods may have heterogeneous skills and abilities, which affect their earning distribution. For example, Cuban immigrants who arrived in the second half of the 1960s earned 17 percent higher wage rates than those who arrived in the 1970s; and those who arrived prior to the Cuban revolution earned about 40 – 45 percent higher wage rates according to Borjas (1982). Borjas (1985) overcomes this problem by incorporating the cohort effect in his study of immigrants' earnings with multiple cross-sectional data. When we abstract from the incidence of emigration, the cohort approach pools the information in all cross-sections and allows for the comparison of different cohorts of immigrants with natives. This approach allows a comparison of the initial gap and the evolution of their earnings relative to a group of natives with similar age and education. Instead of the rapid growth reported in single cross-sectional studies, the author found that the cohort analysis predicts relatively slow earnings growth rates for most immigrant groups. More recent work by Borjas (2015) shows that there are male cohort effects in immigrants' entry wages with more recent cohorts having relatively lower entry wages and lower wage growth.

Unlike the relatively large empirical investigations of the assimilation patterns of immigrant men, the empirical investigations of assimilation patterns of immigrant women are small. The essential first-generation studies that investigated the assimilation of women (Long, 1980; Reimers, 1985; Duleep and Sanders, 1993; Baker and Benjamin, 1994) found that, in general, there is positive assimilation on labor force participation and hours worked. While studies have documented positive earnings assimilation for both immigrant males and females, Chiswick (1978) and Long (1980) indicate that the pattern of earnings differentials vary by sex and time. Similarly, Field-Hendrey and Balkan (1991) studies the earnings-experience profiles of female immigrants and native-born women. For the initial gap, female immigrants earned 14.4 percent lower wages than similar native women in the 1970 US Census and 3.3 percent lower for the 1980 US Census. However, this wage gap experienced by all female immigrants' convergences to native women's wages after about ten years of stay in the US. This finding suggests that female immigrants may initially have lower earnings than native women, but as years since migration and experience increase, these female immigrants eventually catch up. In contrast to Chiswick (1978) and Field-Hendrey and Balkan (1991), Long (1980) found that female immigrants have relatively higher earnings when they arrive in the US, but their earnings advantage over the native born diminishes with time until they have been in the US for about 24 years.

Similar to the studies on male immigrants' assimilation, Schoeni (1998) also argues that relying on a single year of cross-sectional data may overstate the female immigrants' assimilation. The author presented the first study on immigrant women using the cohort approach to analyze labor market assimilation. Employing 1970, 1980,

and the 1990 US Census data, the author, found lower estimates of assimilation for women's labor force participation. Funkhouser et al. (1998) noted that employment rates of immigrant women increase sharply as they transition from their initial five years of duration in the US to the next five years. In addition, the authors found that immigrant women employment rates change relatively little after approximately 10 years of duration in the US. While utilizing the cohort approach to study female immigrant labor force assimilation in the US, researchers explored the impact of several variables including source country characteristics, family characteristics, human capital, and proficiency of the English language.

The US and usual immigrant source countries tend to differ regarding the division of labor by gender. More traditional division of labor by gender is observed in some immigrant source countries than the US. To examine the impact of gender roles in immigrant source countries on immigrant women's labor market assimilation profile in the US, Blau et al. (2011) utilize a sample of married immigrant women from the 1980-2000 US. Censuses and source countries gender role characteristics such as female relative to male labor force participation and women's completed fertility. The authors provide evidence that immigrant women from countries with high female labor supply work more than those from countries with low female labor supply. During the first years following entry into the US, both groups of immigrant women work less than native women, however, over time they assimilate to their counterparts. This finding contradicts Funkhouser (2008) result that was derived using the 1980 and 1990 US Censuses. The author found that source countries characteristics are related to employment levels, however, they are not correlated with the relative change of employment rates for females.

Another labor market assimilation variable that is often examined is the English language ability of immigrants. The ability of immigrants to fluently speak English is vital to the smooth transition into the US labor market. According to Carliner (2000) immigrants who have intentions to reside in the US have the incentive to invest in learning the language before or after their arrival. In general, studies on immigrants' language abilities tend to highlight that years since migration, age at migration, heterogeneity in language skills by country of birth, and education have a significant impact on the language acquisition of immigrants (Veltman, 1988; Portes and Schauffler, 1994; Chiswick, 1991; Chiswick and Miller, 1992; Dustmann, 1994; Carliner, 2000). Using cohort analysis and the observation that the acquisition of English language abilities of immigrants is a continuous process, Funkhouser (2008) provides evidence that language ability does not explain the change in immigrant women's relative employment rates as duration in the US increases.

Antecol (2000) suggests a positive correlation between source country female labor force participation rates and US labor force participation of immigrant women. This result was particularly evident for first-generation immigrant women implying a

transfer of cultural factors that affect the labor market participation in the host country. Blau (1991) also investigates the fertility behavior of first-generation immigrant women in the US, particularly those from the Middle East, Asia, Latin America, and the Caribbean, where fertility rates are high. The study finds that country of origin characteristics positively and significantly determined immigrant women's fertility behavior in the 1970 and 1980 US Census. This correlation was strong, especially for immigrants who had married before arriving in the US. Fernández and Fogli (2006) and Fernández and Fogli (2009) extend the analysis of Blau (1991) by studying second-generation American women to mitigate the usual issues associated with immigration, such as selection and the possible disrupted and delayed fertility behavior. Using historical values of female labor force participation and total fertility rate in the parents' source country, the authors find these variables positively explain second-generation American women's work and fertility outcomes. This result was statistically significant even after controlling for various characteristics of a woman, indicating that the culture of the American woman's country of ancestry is related to her labor market performance. Other studies have also argued the negative relationship between fertility and female labor market outcomes (Brewster and Rindfuss, 2000; Dye, 2008; Chiu and Rastogi, 2008).

In Canada, Baker and Benjamin (1997) provides empirical evidence of how migrant husbands and their wives interact in the labor market. Using data from the Canadian Survey of Consumer Finances (SCF), the author finds that upon entry, the labor force participation rate for immigrant women is higher than comparable natives. However, this initial advantage declines over time. According to Baker and Benjamin (1997), this divergence away from native labor supply is because immigrant women tend to find employment shortly after arrival in jobs that offer relatively high initial wages (but less wage growth rate) to finance their spouse's human capital investment in the host country. These women eventually exit the labor market once their spouse's investment returns become higher, indicating that family investment strategy may play an essential role in immigrant women's labor market assimilation profiles. In a similar study, Cobb-Clark and Crossley (2004) uses the Longitudinal Survey of Immigrants to Australia (LSIA) data to analyze the labor market behavior of the spouse of the principal applicant who applied for admission to Australia. When the applicant's spouse is a woman, she works more hours upon arrival than immigrant women in nontraditional households.

Exploring comparative immigration studies, Reitz (1998) conducted an extensive study on immigrants' earnings in Australia, the US, and Canada. Compared with native women, the study reveals that immigrant women in the US performed poorly than in Canada or Australia. While Reitz (1998) found that educational attainment explains more of the observed differences in earnings between these two groups, Antecol et al. (2002) attribute the income gap between immigrant and native women to differences in

country of origin. Their study found that the income gap disadvantage substantially reduces when one removes Latin American immigrants from the US analysis. This outcome is because Latin American women immigrants in the US have relatively lower educational attainment and linguistic ability than other immigrant women. In essence, the findings of US women immigrant performing poorly than their counterparts in the Canadian or Australian labor market are due to the higher educational attainment and linguistic abilities of immigrant women in the latter countries.

Focusing only on the US and Canada, Wilkinson et al. (2006) explores how the different stages of the settlement in the host country could affect the labor market experiences of immigrant women. The empirical evidence suggests that the total income received from wages and salaries is much lower for immigrant women than native-born women upon arrival. Nevertheless, the incomes of long-term (more than ten years) immigrant women achieve near convergence with native-born women after seven to ten years. Additionally, the returns on education for immigrant women begin to approach those of Canadian- and US-native women. However, this returns to education for immigrants was still lower than comparable native women even after a decade of residence in the host country. The authors documented the same pattern with occupational status, indicating that immigrant women, on average, take up jobs that have lower returns than native women even after accounting for education and other factors. Similarly, Chiu and Rastogi (2008) and Schoeni (1998) argue that educational status predicts labor force participation and employment and may differ between natives and immigrants. Funkhouser (2008) provides further evidence that the change in employment rates relative to natives is larger for immigrants with more education than for immigrants with less education.

Taken together, the literature suggests that both cohort composition and host country context can shape assimilation profiles. We therefore adopt a cohort strategy with sensitivity checks to separate initial gaps from assimilation and to test whether composition and geography account for the patterns we document in this study.

Empirical Evidence on Aging and Cohort Effects

This study relies on data from the US Census Integrated Public Use Microdata Series (IPUMS) (Ruggles et al., 2020)³. We use available decennial Census data between 1970 and 2000, as well as the pooled 2009 to 2011(which we refer to as 2010) and the 2019 American Community Surveys (ACS) samples. Following Schoeni (1998), Funkhouser et al. (1998), and Chiu and Rastogi (2008), we restrict our sample to females from ages 25 - 63 years who are civilians and living in one of the 50 US states and Washington DC⁴. In this study, a respondent is classified as an "immigrant"

³ Data are available for download at <https://usa.ipums.org/usa>

⁴ This age group is selected to prevent the contamination of differential school leaving age and retirement across immigrants and natives.

if she is either a noncitizen or a naturalized citizen. All other persons are classified as “natives”. We delete immigrants who refused to declare their country of birth or do not know their date of entry from the sample.

Source Country Pattern

We first document patterns revealed by the data over the past five decades. Table 1 presents the averages for the top ten sending countries in terms of immigrants in the US by the census years. Prior to the 1980s, the majority of female immigrants to the US came from Europe and South America. Several factors, including political and economic reasons, drove this trend. For example, there was an influx of Cuban population in the US between 1960 and 1970 as thousands of Cubans fled to seek asylum in the US⁵. Additionally, US immigration policies at the time favored immigrants from Europe, and many European countries had longstanding ties to the US. However, by the end of the 20th century, the source countries of immigrants to the US began to shift, with increasing numbers of immigrants coming from Asia and Latin America. For example, the 1980s and the 1990s were periods when Mexican female immigrants had the highest share of female immigrants in the US. Recently, the source countries and regions of immigrants to the US have been more diverse than ever. Between the 2000 and 2010 surveys, the top ten countries of origin for female immigrants to the US included India, Vietnam, and Africa. By 2019, female immigrants from Other USSR/Russia made up part of the top ten sending countries to the US.

Table 1

Top 10 Sending Countries and Regions by Survey Year

Birthplace	1970 (%)	Birthplace	1980 (%)	Birthplace	1990 (%)
Germany	11.57	Mexico	16.68	Mexico	21.63
Canada	11.42	Germany	7.85	West Indies	7.35
Mexico	9.71	Canada	6.04	Central America	6.66
Italy	6.89	West Indies	5.95	South America	6.31
England	6.64	Cuba	5.18	Philippines	6.09
Cuba	6.10	South America	5.14	China	5.21
South America	5.14	Philippines	4.79	Germany	4.36
Poland	3.50	Italy	4.28	Korea	3.82
West Indies	3.39	England	4.28	Cuba	3.71
Ireland	2.54	China	3.99	Canada	3.47
Birthplace	2000 (%)	Birthplace	2010 (%)	Birthplace	2019 (%)
Mexico	27.96	Mexico	29.28	Mexico	25.38
West Indies	7.72	Central America	7.86	Central America	8.39
Central America	7.18	South America	7.42	India	8.15
South America	6.76	West Indies	7.18	South America	7.93
Philippines	5.45	India	6.09	West Indies	7.28
China	5.28	China	5.56	China	6.59
India	4.44	Philippines	5.31	Africa	5.51
Vietnam	3.55	Africa	3.76	Philippines	5.03
Korea	3.33	Vietnam	3.31	Vietnam	3.12
Africa	2.64	Korea	3.05	Other USSR/Russia	2.82

⁵ See <https://journals.openedition.org/plc/464?lang=en>

Estimation and Result

We focus on two labor market outcomes: labor force participation and employment status. The labor force participation measures if an individual is currently in the labor force (i.e., employed or unemployed) or out of the labor force. Employment status measures if the respondent is employed or unemployed but in the labor force. We study both the labor force participation and employment status of respondents because labor force participation is an indicator of the first stage of transition to the labor market, and therefore will help us understand the labor market attachment decisions of female immigrants over the years. On the other hand, employment indicates success in finding a job, given that the respondent decides to participate in the labor force. An increase in labor force participation could result from an increase in the number of people employed, unemployed, or both. Therefore, the employment variable will capture the success rate of female immigrants in finding a job in the host country.

Equation 1 represents the initial estimation of the labor force participation rate for each of the census cross sections:

$$LFPR_{\ell\tau} = \phi_{\tau} + X_{\ell\tau}\beta_{\tau} + \varepsilon_{\ell\tau} \quad (1)$$

$LFPR_{\ell\tau}$ is a dummy variable that identifies whether person ℓ was in the labor force in cross section τ . X is a third-order polynomial for the individual's age; and ϕ_{τ} is a vector of fixed effects representing each immigrant cohort in the particular cross section τ (with the native fixed effect being omitted from the regression); and $\varepsilon_{\ell\tau}$ is the error term.

Similarly, equation 2 estimates the second dependent variable, employment status:

$$EMP_{\ell\tau} = \phi_{\tau} + X_{\ell\tau}\beta_{\tau} + \varepsilon_{\ell\tau} \quad (2)$$

$EMP_{\ell\tau}$ is a dummy variable that identifies whether an individual ℓ was employed in cross section τ . We are therefore constructing the $EMP_{\ell\tau}$ as the probability of being employed for this group. The rest of the variables have the same definition as in equation (1). This model contains only individuals in the labor force prior to the census year.

Table 2 reports the estimated cohort fixed effects. An examination of these age-adjusted labor force participation gaps reveals two interesting findings. First, the more recent cohorts have relatively lower labor market participation rates than earlier cohorts (up to 2000). For example, let us consider, the general trend in the labor market gap between the more recent cohort of immigrants and natives in each cross section. In the 1970 Census, the immigrants that arrived over the 1965-69 period were 2.5 percentage

points more likely to be in the labor force than comparably aged natives. This cohort of immigrants had a positive initial gap in the probability of entering the labor force. They outperformed natives in the labor market attachment upon their arrival—however, the picture changed after a decade. In 1980, the most recent wave of immigrants was 11.8 percentage points less likely to join the labor force than natives in the same survey year. By 2000, this labor market entry disadvantage had grown to 25.2 percentage points. By 2010, however, the long-run trend in level cohort effects seems to have contracted a little, and the latest wave of immigrants was 22.9 percentage points less likely to join the US labor force than natives. The labor market entry disadvantage shrank further in 2019 to 19 percentage points. The initial labor force participation gaps relative to natives are also shown in figure 1.

For this study, we define the rate of labor force assimilation as the rate at which the gap between immigrants and natives labor force participation rate (or the labor force participation probability) converges with years since migration. In addition to the cohort effects in the labor force participation rate at the cross-sectional levels, the age-adjusted labor market gaps reported in table 2 suggest the second interesting finding: there seems to have been a change in the trend in or after 1990. Specifically, after a decade of arriving in the US the immigrants who arrived after 1989 experienced a far higher labor force assimilation than earlier arrivals and the most recent arrivals. In other words, the data suggest two patterns. First, the initial gaps of recent cohorts are greater than earlier cohorts in terms of labor force participation rate. Second, the rate of growth of immigrant labor market participation is higher for the more recent cohorts than the earlier cohort. Figure 1 also shows the assimilation graphically by illustrating the labor force participation gaps by cohort and years since migration (Panel A), while Panel B illustrates the relative convergence rate across cohorts by comparing their labor force participation rates at different years since migration normalized by their initial labor force participation rate gaps.

We assume that a change in the business cycle is independent of immigrants' relative labor force participation⁶. Empirically, we absorb aggregate shocks with survey-year fixed effects in the pooled models and later allow state effects to vary by survey year, mitigating the risk that cyclical conditions confound our estimates. The cohort effects in the rate of labor force assimilation can then be detected by "tracking" a specific cohort across censuses. For example, consider the cohort that entered the US between 1985 and 1989. This group's relative labor force participation rate improved from a disadvantage of 19.7 percentage points at the time of entry in 1990 to 12 percentage points in 2000 –a growth rate of just 7.7 percentage points over their first

⁶ It is important to recognize that the operating assumption may be problematic. Specifically for the 2010 Census, immigrants may be more vulnerable than natives to the effects of the 2007-2009 recession. This economic shakeup might impact marginally attached immigrant workers and discourage immigrant workers more than natives. As a result, the average immigrant's propensity to join the labor force participation might be lower relative to natives.

decade in the country. After another ten years (from 2000 to 2010), there is an 11.4 percentage points improvement in the labor market disadvantage.

In contrast, the cohort that entered the country between 1990 and 1994 was 15.2 percentage points less likely to join the labor force than natives in the 2000 Census. This disadvantage improved by 12.2 percentage points in the 2010 Census. The rate of labor force assimilation increased by an outstanding 19.2 percentage points for the 1995-1999 cohort from the 2000 to 2010 Census sample. Even though the 1995-1999 arrivals had the highest disadvantage (in the 2000 Census) in the labor force attachment, they assimilated more quickly with years since migration than their counterpart who arrived before the 1990s. We see a similar pattern for cohorts that also arrived in the early to late 2000s.

Table 2

Age-Adjusted Labor Force Participation Rate of Immigrant Cohorts Relative to Natives, by Census Cross Section

COHORT	1970	1980	1990	2000	2010	2019
1950-59 arrivals	0.007*** (0.000)	0.006*** (0.001)	0.075*** (0.004)	...	...	...
1960-64 arrivals	0.029*** (0.000)	0.021*** (0.001)	-0.009*** (0.001)	0.052*** (0.005)	...	...
1965-69 arrivals	0.025*** (0.000)	0.044*** (0.000)	0.005*** (0.001)	-0.004 (0.002)	...	...
1970-74 arrivals	...	0.012*** (0.000)	-0.019*** (0.000)	-0.051*** (0.001)	0.026*** (0.002)	...
1975-79 arrivals	...	-0.118*** (0.000)	-0.035*** (0.000)	-0.072*** (0.001)	0.033*** (0.002)	...
1980-84 arrivals	...	...	-0.075*** (0.000)	-0.090*** (0.001)	0.010*** (0.002)	0.002 (0.005)
1985-89 arrivals	...	...	-0.197*** (0.000)	-0.120*** (0.001)	-0.006** (0.002)	0.032*** (0.004)
1990-94 arrivals	...	...	...	-0.152*** (0.000)	-0.030*** (0.002)	0.012** (0.004)
1995-99 arrivals	...	...	...	-0.252*** (0.001)	-0.060*** (0.001)	-0.022*** (0.003)
2000-04 arrivals	...	...	...	...	-0.229*** (0.001)	-0.075*** (0.001)
2005-11 arrivals	...	...	...	...	-0.229*** (0.001)	-0.075*** (0.001)
2012-19 arrivals	...	...	...	...	...	-0.190*** (0.001)
Observations	1,183,640	2,356,412	2,810,920	3,202,936	2,056,883	674,373
R-squared	0.004	0.012	0.022	0.024	0.019	0.021

Notes: The output presented above are calculated from regressions that are estimated separately for each cross section, which are identified by the year displayed in the column heading. The dependent variable identifies each individual's probability of participating in the labor force, and the explanatory variables include the respondent's age (introduced as a third-order polynomial). The regressions also include a fixed effect for the immigrant cohort that arrived in the US prior to 1950 (not shown in the table). The reference group is comprised of native-born respondents such that the coefficients in each column represent a separate cohort's probability of participating in the labor force relative to native-born respondents in that census (or survey) year. The "2010" cross section is generated from the pooled 2009-11 American Community Surveys (ACS) while the "2019" cross section is generated from the 2019 ACS. Robust standard errors in parentheses are clustered at the cohort level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

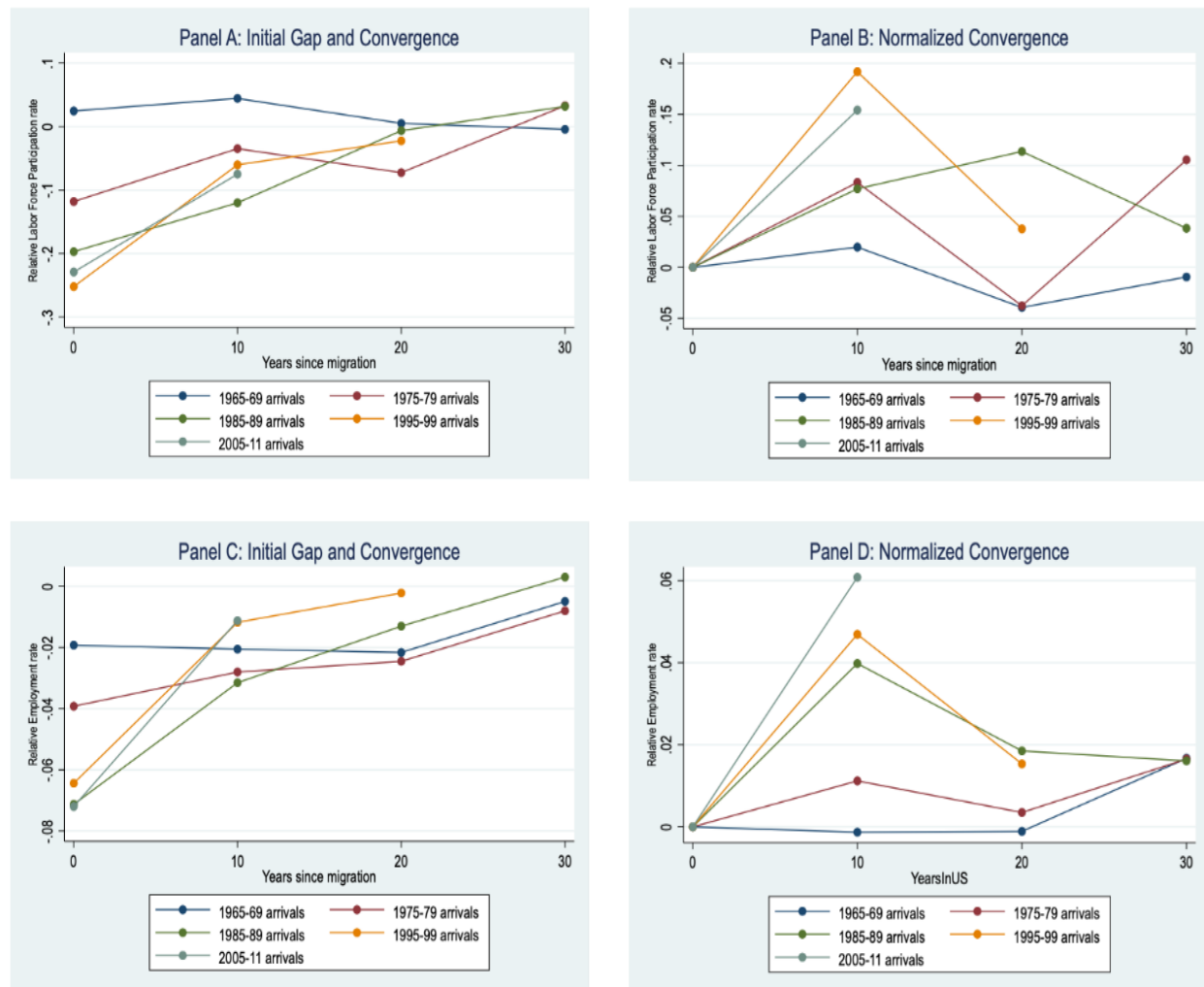


Figure 1: Aging Profile for the Relative Labor Force Participation and Employment Rate of Immigrants, by Cohort.

Note: Panels A and B are the age-adjusted initial gap and convergence for the relative labor force participation rate of immigrant cohorts obtained from the data reported in table 2. The dependent variable identifies each individual's probability of participating in the labor force, and the explanatory variables include the respondent's age (introduced as a third-order polynomial). The reference group is comprised of native-born respondents such that the coefficients on the cohort fixed effects represent each cohort's probability of participating in the labor force relative to native-born in a given survey year, which are used to construct the data points in the upper panel graphs. In Panel B, the relative labor force participation rate for each cohort is normalized to zero at the time of the entry. Panels C and D are the age-adjusted initial gap and convergence for the relative employment rate of immigrant cohorts obtained from the data reported in table 3. The dependent variable identifies each individual's probability of being employed, and the explanatory variables include the respondent's

age (introduced as a third-order polynomial). The reference group is comprised of native-born respondents such that the coefficients on the cohort fixed effects represent each cohort's probability of being employed relative to native-born in a given survey year, which are used to construct the data points in the lower panel graphs. In Panel D, the relative employment rate for each cohort is normalized to zero at the time of the entry.

We present the estimation of equation 2 in table 3. This table reports the estimated cohort fixed effects for the employment rate (or employment probability) of the individual. An examination of these age-adjusted employment rate gaps equally reveals two interesting findings. First, the more recent cohorts have relatively lower employment rates than earlier cohorts (through to 1990). Let us consider, for example, the trend in the employment probability gap between the more recent cohort of immigrants and natives in each cross section.

In the 1970 Census, the immigrants that arrived over the 1965-69 period were 1.9 percentage points less likely to be employed than comparably aged natives. This cohort of immigrants had a negative initial gap in the probability of being employed. This negative initial gap worsens for the new cohort that enters the country. In 1980, the most recent immigrant wave was 3.9 percentage points less likely to be employed than natives. By 1990, this disadvantage had grown to 7.1 percentage points before contracting to 6.4 percentage points in 2000. By 2010, however, the long-run trend in level cohort effects seems to have resurfaced, but this was short-lived as the latest wave of immigrants in 2019 saw a marginal improvement in their employment entry gap (for example, the cohort that arrived between 2012 and 2019 were only 3.4 percentage points less likely to be employed compared to the 2005 and 2011 cohort who were 7.2 percentage points less likely to be employed than natives).

As presented in table 2, table 3 similarly suggests a faster assimilation rate of the recent cohort in terms of getting employed than earlier cohorts. Suppose again that changes in aggregate economic conditions do not affect the relative employment rate of immigrant⁷. The cohort effects in the rate of employment assimilation can then be detected by "tracking" a specific cohort across censuses. Consider, for instance, the cohort that entered the country between 1985 and 1989. This group's relative job uptake rate improved from a disadvantage of 7.1 percentage points at the time of entry in 1990 to 3.1 percentage points in 2000 – a growth rate of just 3.9 percentage points over a decade in the US. After another ten years, the assimilation rate fell to 1.85 percentage points. In contrast, the cohort that entered the country between 1995 to 1999 was 6.4 percentage points less likely to be employed than natives in the 2000

⁷ Again, the operating assumption may be problematic. Specifically for the 2010 Census, immigrants may be more vulnerable than natives to the effects of the 2007-2009 recession. Employment rates may be lower for immigrants than natives, especially in industries like construction and hospitality, which were hit hard by the recession. As a result, the cyclical unemployment rates might differ for the immigrants and natives.

Census. This initial disadvantage improved by 4.69 percentage points after just ten years in the US. Additionally, the cohort that entered the country between 2005 and 2011 was 7.2 percentage points less likely to be employed than comparably aged natives upon entry. This entry disadvantage improved by about 6.1 percent after just ten years in the US. To put things in perspective, even though the latest arriving cohort (in the 2010 Census) suffered the most from an entry employment disadvantage, they experienced the fastest assimilation in the labor market after just ten years in the US.

Table 3

Age-Adjusted Employment Rate of Immigrant Cohorts Relative to Natives, by Census Cross Section

COHORT	1970	1980	1990	2000	2010	2019
1950-59 arrivals	-0.011*** (0.000)	-0.010*** (0.000)	-0.002*** (0.000)	...	...	...
1960-64 arrivals	-0.016*** (0.000)	-0.016*** (0.000)	-0.016*** (0.001)	0.005*** (0.000)	...	...
1965-69 arrivals	-0.019*** (0.000)	-0.021*** (0.000)	-0.022*** (0.001)	-0.005*** (0.000)	...	...
1970-74 arrivals	...	-0.023*** (0.000)	-0.029*** (0.000)	-0.023*** (0.000)	0.005*** (0.000)	...
1975-79 arrivals	...	-0.039*** (0.000)	-0.028*** (0.000)	-0.025*** (0.000)	-0.008*** (0.001)	...
1980-84 arrivals	...	...	-0.037*** (0.000)	-0.031*** (0.000)	-0.003*** (0.001)	0.004*** (0.000)
1985-89 arrivals	...	...	-0.071*** (0.000)	-0.032*** (0.000)	-0.013** (0.001)	0.003*** (0.000)
1990-94 arrivals	...	...	...	-0.036*** (0.000)	-0.015*** (0.000)	0.003*** (0.000)
1995-99 arrivals	...	...	...	-0.064*** (0.000)	-0.017*** (0.000)	-0.002*** (0.000)
2000-04 arrivals	...	...	...	...	-0.023*** (0.000)	-0.004*** (0.000)
2005-11 arrivals	...	...	...	...	-0.072*** (0.000)	-0.011*** (0.000)
2012-19 arrivals	...	...	...	...	...	-0.034*** (0.000)
Observations	588,772	1,456,100	2,038,825	2,331,031	1,558,120	518,719
R-squared	0.001	0.002	0.004	0.005	0.003	0.002

Notes: The output presented above are calculated from regressions that are estimated separately for each cross section, which are identified by the year displayed in the column heading. The dependent variable identifies each individual's probability of being employed, and the explanatory variables include the respondent's age (introduced as a third-order polynomial). The regressions also include a fixed effect for the immigrant cohort that arrived in the US prior to 1950 (not shown in the table). The reference group is comprised of native-born respondents such that the coefficients in each column represent a separate cohort's probability of being employed relative to native-born respondents in that census (or survey) year. The "2010" cross section is generated from the pooled 2009-11 American Community Surveys (ACS) while the "2019" cross section is generated from the 2019 ACS. Robust standard errors in parentheses are clustered at the cohort level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Our data provide evidence of cohort effects on immigrants' labor market outcomes in terms of both initial gaps and growth rates. However, Borjas (1985) argues that isolating the impact of aging and cohort effects can be methodologically challenging.

Proper identification requires panel data where an individual can be observed over time. Borjas (1985) argues that an alternative approach is using a number of randomly drawn cross sections so that the average member of a specific cohort can be “tracked” across survey years. We follow Borjas (1985) identification strategy by pooling the available cross-sectional data for immigrants and natives. The immigrant labor market outcome function is presented below:

$$Y_{\ell\tau} = X_{\ell\tau}\varphi_i + \alpha y_{\ell\tau} + \beta C_{\ell} + \theta(y_{\ell\tau}C_{\ell}) + \gamma_i \pi_{\ell\tau} + \varepsilon_{\ell\tau} \quad (3)$$

and the native labor market outcome function takes the form:

$$Y_{\ell\tau} = X_{\ell\tau}\varphi_n + \gamma_n \pi_{\ell\tau} + \varepsilon_{\ell\tau} \quad (4)$$

where $Y_{\ell\tau}$ is the vector containing labor force participation and employment status outcomes; $X_{\ell\tau}$ is a third order polynomial for the age of each respondent, $y_{\ell\tau}$ is a third-order polynomial that identifies the number of years that the immigrants have stayed in the US; C_{ℓ} is a vector of dummy variables identifying each immigrant cohort; and $y_{\ell\tau}C_{\ell}$ measures the linear combination of cohort-specific and duration in the US trend; and $\pi_{\ell\tau}$ is a dummy variable indicating survey fixed effects. The parameter α measures the value of acquiring an additional year of US experience and represents an aging effect. Our estimated parameters of interest, β and θ , capture the labor market outcome gap of a specific cohort at arrival, and the assimilation rate (or average growth) of that specific cohort over time in the US, respectively. The estimated coefficient γ_i and γ_n give the impact of changes in macroeconomic conditions on immigrant and native labor market outcomes, respectively, and measure the period effect.

It is established in the literature that parameters measuring the aging, cohort, and period effects in equation (3) are not independently identified. The issue of identification arises due to the following identity:

$$y_{\ell\tau} \equiv T_1 + \pi_{\ell\tau}(T_2 - T_1) - C_{\ell} \quad (5)$$

Equation (5) shows that we cannot separately identify the parameters capturing aging ($y_{\ell\tau}$), cohort (C_{ℓ}), and period effects ($\pi_{\ell\tau}$) in the model because they are perfectly collinear. To identify the parameters, we follow Borjas (1985) and make the assumption that the period effects are the same for natives and immigrants:

$$\gamma_i = \gamma_n \quad (6)$$

In other words, macroeconomic trends should equally impact natives and immigrants in the same way. We can think about this restriction as the period effect for immigrants, γ_i , is exogenous to the immigrant-specific labor participation outcomes.

The empirical analyses reported below are related to the framework suggested by equation (3). The regression stacks data from the six cross-sections available between 1970 and 2019 so that the period effects are measured by the vector of fixed effects indicating the cross section from which an individual is drawn. Model 1 of table 4 presents the initial gaps in labor force participation and duration in the US. This model allows us to compare each successive cohort's initial labor market gap with the 1975-79 arriving cohort. All regressions include immigrant fixed effect and the respondent's age (introduced as a third-order polynomial) fully interacted with a variable indicating if the person is foreign-or-native-born (immigrant fixed effect). We present selected coefficients from the regression model for brevity and to conveniently illustrate the direction of the cohort effects. The estimation suggests that compared to the 1975-79 cohort, later successive immigrant cohorts experienced a larger initial entry disadvantage in labor force participation.

Model 1 shows that the 1965-69 arriving cohort had an initial entry advantage over the 1975-79 cohort in labor force participation. However, successive immigrant cohorts arriving after the 1975-79 cohort experienced a relatively worse initial gap. For example, the 1985-89 cohort was 4.3 percentage points less likely to join the labor force than the 1975-79 cohorts after arriving in the US. This relative initial negative gap in labor force participation grew bigger for successive cohorts arriving in the US and narrowed for the latest 2012-2019 arriving cohort. All the coefficients were statistically significant at the 1 percent level. Even though these observations largely align with the earlier findings using the individual cross-sectional data (in table 2) that more recent cohorts have larger negative entry disadvantages in the labor force, we acknowledge here that the estimates in table 2 showed little gap across the survey years. The estimates differ because Model 1 of table 4 assumes a constant assimilation rate across cohorts. Next, the coefficients on the Years Since Migration (YSM) variables predict that, during the first ten years after migration, labor force participation rate increases by roughly 17 percentage points.

Model 2 presents the full model suggested by equation (3). This model allows for both initial gaps and assimilation profiles of respective cohorts. Thus, Model 2 allows assimilation patterns to differ across arrival cohorts. Although the coefficients capturing the initial gaps increased in magnitude, at large, it follows the same pattern as Model 1. Aside from the 1965-69 cohort, the 1985-89 cohort was 9.9 percentage points less likely to be in the labor force than the 1975-79 arriving cohort. This relative initial entry disadvantage in labor force participation persisted for successive cohorts until it contracted marginally for the most recent arriving cohorts in the 2000s. Additionally, the coefficients on the YSM variables predict that, during the first ten years after migration, labor force participation rate increases by 10 percentage points.

The regression equation in Model 2 reveals that the assimilation rate in labor force participation (captured by the interaction between cohort dummies and YSM) increased noticeably with the more recent cohorts. Immigrants who arrived in the late 1980s experienced a 0.5 percentage point increase in the likelihood of participating in the labor force relative to the 1975-79 arriving cohort for each additional year of residence in the US. Additionally, immigrants who arrived in the late 1990s could expect a 0.8 percentage points growth in the likelihood of participating in the labor force for each additional year in the US relative to the 1975-79 cohort. The more recent cohort, the 2005-2011 arrivals, experienced the fastest assimilation in joining the labor force for each passing year. At large, more recent cohorts tend to assimilate faster into the labor force than their earlier cohorts. Quantitatively, the 2005-2011 cohort's participation in the labor force slope is roughly twice the 1985-1989 cohort's (1.1 percentage points versus 0.5 percentage points), indicating an economically meaningful acceleration rather than a statistical artifact.

Table 4*Cohort Effects in Labor Force Participation Levels and Assimilation*

Initial Gaps	Model 1	Model 2
1965-69 arrivals	0.059*** (0.003)	0.124*** (0.002)
1985-89 arrivals	-0.043*** (0.001)	-0.099*** (0.000)
1995-99 arrivals	-0.062*** (0.020)	-0.140*** (0.003)
2005-2011 arrivals	-0.084*** (0.007)	-0.166*** (0.005)
2012-2019 arrivals	-0.071*** (0.010)	-0.146*** (0.010)
YSM	0.033*** (0.007)	0.023*** (0.006)
YSM ² /10	-0.019*** (0.005)	-0.016*** (0.005)
YSM ³ /100	0.003*** (0.001)	0.003*** (0.001)
1965-69 arrivals × YSM		-0.004*** (0.000)
1985-89 arrivals × YSM		0.005*** (0.000)
1995-99 arrivals × YSM		0.008*** (0.000)
2000-2004 arrivals × YSM		0.006*** (0.001)
2005-2011 arrivals × YSM		0.011*** (0.001)
Observations	11,820,848	11,820,848
R-squared	0.049	0.050

Notes: The estimates presented here are obtained from regressions that are ran on the set of pooled cross sections from 1970, 1980, 1990, 2000, 2010, and 2019. All regressions include immigrant fixed effect, the respondent's age (introduced as a third order polynomial) fully interacted with a variable indicating if the person is foreign- or native-born, and the omitted group is comprised of 1975-97 cohort. Robust standard errors in parentheses are clustered at the cohort level. *** p<0.01, ** p<0.05, * p<0.1

We replicate the estimations in table 4 in table 5 by using employment status as our outcome variable. Model 1 presents the initial gaps in employment probability and duration in the US. This model allows us to compare each successive cohort's initial employment gap with the 1975-79 arriving cohort as the omitted group. Also, all regressions include immigrant fixed effect and the respondent's age (introduced as a third-order polynomial) fully interacted with a variable indicating if the person is foreign or native-born (immigrant fixed effect). We present selected coefficients from the regression model for brevity. The estimation suggests that compared to the 1975-79 cohort, the 1965-69 cohort had a 0.6 percentage points initial advantage in the probability of employment. However, we see a reverse in the relative initial gap for later successive immigrant cohorts until the latest wave of immigrants. For instance, the 1985-89 cohort is likely to join the labor force by 1.1 percentage points below those of the 1975-79 cohort. The initial negative gap in the labor force narrowed for the 1995-99 cohort, expanded again for the 2005-2011 cohort, and reversed to a positive gap (initial advantage) for the most recent cohort. The positive value for the latest wave of immigrants demonstrates that the 2012-2019 cohort had 1.6 percentage points initial advantage in employment probability over the 1975-79 cohort. Note also that Model 1 documents that deterioration in employment probability precipitated momentarily around the late 1990s, plunged into further decline in 2005-2011, and stopped declining in 2012-2019, similar to the pattern we saw in table 3. Next, the coefficients on the Years Since Migration (YSM) variables predict that, during the first ten years after migration, employment probability increases by 7 percentage points.

Model 2 allows for both initial employment gaps and assimilation profiles of respective cohorts. We see an increase in the magnitude (in absolute terms) of the initial gap coefficients except for the 2012-2019 cohort with a switch in direction. That is, successive immigrant cohorts arriving after the 1975-79 cohort experienced a larger negative initial gap in employment probability. The coefficients are statistically significant at the 1 percent level. The coefficients capturing duration in the US changes marginally in size but predict that, during the first ten years after migration, employment probability increases by 6 percentage points.

Examining the patterns in the assimilation rate in employment (measured by the interaction between cohort dummies and YSM), we find that the assimilation rate in employment increased noticeably with the more recent cohort. Immigrants who arrived in the late 1980s and 1990s experienced a 0.2 percentage point increase in the probability of getting employed compared to the 1975-79 arriving cohort for each additional year of residence in the US. Additionally, immigrants who arrived in 2005-2011 could expect a 0.6 percentage points growth in the probability of getting employed for each additional year in the US relative to the 1975-79 cohort. The more recent cohort, 2005-2011 arrivals, experienced the fastest assimilation in employment.

In sum, more recent cohorts tend to assimilate faster into getting jobs and making a living than their earlier cohorts.

Table 5*Cohort Effects in Employment Levels and Assimilation*

Initial Gaps	Model 1	Model 2
1965-69 arrivals	0.006*** (0.001)	0.014*** (0.001)
1985-89 arrivals	-0.011*** (0.000)	-0.032*** (0.000)
1995-99 arrivals	-0.001*** (0.001)	-0.023*** (0.001)
2005-2011 arrivals	-0.008*** (0.002)	-0.055*** (0.002)
2012-2019 arrivals	0.016*** (0.003)	-0.013*** (0.005)
YSM	0.014*** (0.004)	0.011*** (0.003)
YSM ² /10	-0.008** (0.002)	-0.006** (0.002)
YSM ³ /100	0.001** (0.000)	0.001** (0.000)
1965-69 arrivals × YSM		-0.001*** (0.000)
1985-89 arrivals × YSM		0.002*** (0.000)
1995-99 arrivals × YSM		0.002*** (0.000)
2005-2011 arrivals × YSM		0.006*** (0.001)
Observations	8,261,456	8,261,456
R-squared	0.008	0.008

Notes: The estimates presented here are obtained from regressions that are ran on the set of pooled cross sections from 1970, 1980, 1990, 2000, 2010, and 2019. All regressions include immigrant fixed effect, the respondent's age (introduced as a third-order polynomial) fully interacted with a variable indicating if the person is foreign- or native-born, and the omitted group is comprised of 1975-79 cohort. Robust standard errors in parentheses are clustered at the cohort level. *** p<0.01, ** p<0.05, * p<0.1.

Changing Composition of the Immigrant Population

What explains the basic pattern in Figure 1? In this section, we explore possible variables that could explain why the rate of labor market outcomes assimilation increased for the more recent immigrant cohorts. We consider factors like educational attainment, marital status, and the presence of children in the household, which may influence labor market decisions. For example, an individual with a higher level of education may fare well in terms of employment and labor force participation and may differ between natives and immigrants (Chiu & Rastogi, 2008). Numerous factors, such as immigration policy, labor demand, and economic motives for immigrating, may result in the concentration of the foreign-born in low and high educational attainment categories.

Model 1 of tables 6 and 7 extend equation (3) by including years of education, marital status, and number of children in the household in our regression. Although the regression model contains the full set of regressors, we report only selected coefficients for brevity in the table and to conveniently track our primary variables of interest, the level and growth cohort differences. Accounting for these variables in our model does not substantially attenuate the shifts in entry labor market status observed across successive immigrant cohorts. Also, the assimilation profiles in tables 6 and 7 are mostly the same compared to tables 4 and 5. Accounting for education, marital status, and the number of children does not explain the basic pattern in initial entry and growth patterns of successive cohorts.

Could compositional changes explain the initial differential gaps and the acceleration in the assimilation rate? Specifically, we explore whether the cohort effects may be explained by the changing national origin mix of immigrants or by changes in the geographic sorting of immigrants across US states. According to Borjas (1985, 2015), the national origin mix of the immigrant workforce is highly associated with the skill composition of immigrant workers. Model 2 of tables 6 and 7 add the country-of-origin fixed effects to the regressions. The regressions continue to reveal the same pattern in the rate of labor market assimilation, even within national origin groups. In other words, the country-of-origin mix does not explain the cohort differences in the rate of assimilation that we presented using the initial data.

The changing assimilation rate could be attributed to immigrants' changing geographic settling patterns across the US. If fewer immigrants are choosing to settle in the typical immigrant-receiving states and states with little history of immigration are seeing a surge in the number of immigrant workers, then this geographic redistribution could potentially impact the labor market outcomes of immigrants. For example, Kandel and Parrado (2005) and Fennelly (2005) suggest that although most immigrants continue to reside in major US cities, rural areas have experienced significant growth in their immigrant population. Kandel and Parrado (2005) argues that the restructuring of major rural industries has opened up more economic opportunities for immigrants, thus enticing waves of immigrants to move to rural areas of the South and Midwest (Hernández - León & Zúñiga, 2003; Fennelly, 2005; Baird et al., 2008).

We account for state fixed effect in Model 3 of tables 6 and 7. Again, accounting for this variable does not alter any of the substantive findings. In other words, the regression continues to reveal an increase in assimilation rate even within national origin groups and geographic settlement areas. Lastly, we allow the state level effect to vary by survey year in Model 4 of tables 6 and 7. We do this because states demographics may change over time, for example, Florida in 2010 may differ from Florida in 1970. At large, our primary findings remain the same. In sum, the human capital, family context, and the changing composition of the immigrant population do not explain the cohort differences in the assimilation rate. Because neither human

capital, family context, country-of-origin fixed effects, nor state fixed effects including time-varying state effects – explain the acceleration, we view improved returns to US-specific human capital, employer learning about immigrant credentials, and expansions in integration infrastructure as plausible mechanisms for future work to test directly.

Table 6

Sensitivity of Estimated Cohort Effect to Compositional Changes in Labor Force Participation

Initial Gaps	Model 1	Model 2	Model 3	Model 4
1965-69 arrivals	0.097*** (0.002)	0.092*** (0.005)	0.091*** (0.005)	0.093*** (0.005)
1985-89 arrivals	-0.101*** (0.000)	-0.103*** (0.001)	-0.103*** (0.001)	-0.096*** (0.001)
1995-99 arrivals	-0.150*** (0.004)	-0.148*** (0.004)	-0.150*** (0.004)	-0.142*** (0.005)
2005-11 arrivals	-0.195*** (0.005)	-0.189*** (0.006)	-0.191*** (0.006)	-0.188*** (0.006)
2012-19 arrivals	-0.188*** (0.011)	-0.186*** (0.012)	-0.188*** (0.012)	-0.185*** (0.012)
YSM	0.026*** (0.006)	0.024*** (0.006)	0.024*** (0.006)	0.025 *** (0.006)
YSM2/10	-0.019*** (0.005)	-0.017*** (0.004)	-0.017*** (0.004)	-0.017*** (0.004)
YSM3/100	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
YSM interacted with 1965-69 arrivals	-0.004*** (0.000)	-0.004*** (0.000)	-0.004*** (0.000)	-0.004*** (0.000)
1985-89 arrivals	0.005*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	0.004*** (0.000)
1995-99 arrivals	0.008*** (0.000)	0.008*** (0.000)	0.008*** (0.000)	0.007*** (0.000)
2005-11 arrivals	0.012*** (0.001)	0.011*** (0.001)	0.011*** (0.001)	0.010 *** (0.001)
Country FE	NO	YES	YES	YES
State FE	NO	NO	YES	YES
State FE × Survey Year	NO	NO	NO	YES
Observations	11,820,848	11,820,848	11,820,848	11,820,848
R-squared	0.103	0.105	0.107	0.108

Notes: The estimates presented here are obtained from regressions that are ran on the set of pooled cross sections from 1970, 1980, 1990, 2000, 2010, and 2019. All regressions include immigrant fixed effect, the respondent's age (introduced as a third-order polynomial) fully interacted with a variable indicating if the person is foreign-or native-born, education (in years), marital status, number of children in household, and the omitted group is the 1975-79 cohort. Robust standard errors in parentheses are clustered at the cohort level. *** p<0.01, ** p<0.05, * p<0.1

Table 7*Sensitivity of Estimated Cohort Effect to Compositional Changes in Employment*

Initial Gaps	Model 1	Model 2	Model 3	Model 4
1965-69 arrivals	0.013*** (0.001)	0.015*** (0.001)	0.015*** (0.001)	0.019*** (0.001)
1985-89 arrivals	-0.033*** (0.000)	-0.032*** (0.000)	-0.032*** (0.000)	-0.030*** (0.001)
1995-99 arrivals	-0.028*** (0.001)	-0.023*** (0.001)	-0.024*** (0.001)	-0.019*** (0.002)
2005-11 arrivals	-0.064*** (0.002)	-0.059*** (0.002)	-0.060*** (0.002)	-0.054*** (0.002)
2012-19 arrivals	-0.028*** (0.005)	-0.023*** (0.005)	-0.024*** (0.005)	-0.020*** (0.006)
YSM	0.010*** (0.003)	0.011*** (0.003)	0.011*** (0.003)	0.011*** (0.003)
YSM ² /10	-0.007** (0.002)	-0.007** (0.002)	-0.007** (0.002)	-0.007** (0.002)
YSM ³ /100	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
YSM interacted with 1965-69 arrivals	-0.000*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
1985-89 arrivals	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
1995-99 arrivals	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
2005-11 arrivals	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)
Country FE	NO	YES	YES	YES
State FE	NO	NO	YES	YES
State FE × Survey Year	NO	NO	NO	YES
Observations	8,261,456	8,261,456	8,261,456	8,261,456
R-squared	0.020	0.021	0.022	0.023

Notes: The estimates presented here are obtained from regressions that are ran on the set of pooled cross sections from 1970, 1980, 1990, 2000, 2010, and 2019. All regressions include immigrant fixed effect, the respondent's age (introduced as a third-order polynomial) fully interacted with a variable indicating if the person is foreign-or native-born, education (in years), marital status, number of children in household, and the omitted group is the 1975-79 cohort. Robust standard errors in parentheses are clustered at the cohort level. *** p<0.01, ** p<0.05, * p<0.1.

Conclusion

This paper uses data from the 1970-2019 US Census Integrated Public Use Microdata (IPUMS) to document and examine the long-run trends in female immigrants' labor market conditions over the past few decades. The paper's main finding is that there are cohort effects in labor market outcomes of female immigrants, with more recent immigrants having relatively lower labor force participation rates and employment rates than earlier cohorts. However, regarding the rate of assimilation in the labor market, the more recent cohort tends to assimilate faster than the earlier cohort. It would be interesting for future researchers to examine the potential mechanism explaining the speed of assimilation in the labor market for more recent cohorts than the earlier cohort. Notwithstanding, our results indicate that the labor market outcomes for female immigrants tend to improve with time in the US, especially

for more recent cohorts. This result in the assimilation trend is encouraging, as it suggests that policies and programs aimed at promoting immigrant integration and employment opportunities may have a positive impact. Our results have policy implications. First, faster recognition of foreign credentials and streamlined licensing can increase labor attachments. Second, pairing adult English instruction with sector-specific training and job placement can shorten time to convergence. Third, childcare and scheduling supports can raise labor force participation. Finally, because sensitivity checks suggest that acceleration is not driven by country-of-origin or geography, integration investments should be made broadly – including new-destination states and rural communities – rather than only in traditional gateways.

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