

# Immigrant Earnings Assimilation, 1981–2021

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Immigrants and the U.S. Economy

National Bureau of Economic Research Conference

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The forthcoming working paper on which this presentation is based has not been subject to CBO's regular review and editing process. The views expressed here should not be interpreted as CBO's. The agency expects to publish the working paper in spring 2026.

For information about the event, see <https://tinyurl.com/sc9cu8pj>.

# Motivation and Research Questions

The assimilation of immigrants into the labor market has important implications for the economy, the federal budget, and projections of Social Security's finances.

In the forthcoming working paper, we use a longitudinal dataset covering the 1981–2021 period to:

1. Describe trends in immigration and emigration,
2. Estimate earnings assimilation over a 20-year period of tenure in the United States,
3. Examine differences in the rate of assimilation across arrival cohorts and sex,
4. Estimate earnings assimilation of eventual emigrants, and
5. Examine how earnings upon arrival and earnings growth vary by arrival cohort and country of birth.

# Selective Emigration

Estimates of earnings assimilation are often confounded by the possibility of selective emigration.

Immigrants who remain in the United States tend to have higher earnings than those who leave.

Schwabish (2011), Lubotsky (2007, 2011), Abramitzky and colleagues (2014), Akee and Jones (2024)

See Jonathan A. Schwabish, “Identifying Rates of Emigration in the United States Using Administrative Earnings Records,” *International Journal of Population Research*, vol. 2011, article 546201 (2011), <https://doi.org/10.1155/2011/546201>; Darren Lubotsky, “Chutes or Ladders? A Longitudinal Analysis of Immigrant Earnings,” *Journal of Political Economy*, vol. 115, no. 5 (October 2007), pp. 820–867, <https://doi.org/10.1086/522871>, and “The Effect of Changes in the U.S. Wage Structure on Recent Immigrants’ Earnings,” *Review of Economics and Statistics*, vol. 93, no. 1 (February 2011), pp. 59–71, [https://doi.org/10.1162/REST\\_a\\_00094](https://doi.org/10.1162/REST_a_00094); Ran Abramitzky, Leah Platt Boustan, and Katherine Eriksson, “A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration,” *Journal of Political Economy*, vol. 122, no. 3 (June 2014), pp. 467–506, <https://doi.org/10.1086/675805>; and Randall Akee and Maggie R. Jones, “Return Migration Decisions and Declining Earnings: Immigrants in Linked Survey and Administrative Data,” *Journal of Human Resources* (2024), <https://doi.org/10.3368/jhr.0722-12457R2>.

# Research on Emigration and Earnings Growth

Because immigrants who stay in the United States tend to have higher earnings, using cross-sectional data tends to overestimate the rate of earnings assimilation among immigrants.

Hu (2000), Lubotsky (2007), Abramitzky and colleagues (2014)

To overcome those barriers, researchers have linked cross-sectional survey data to administrative earnings history.

Duleep and Dowhan (2002, 2008), Lubotsky (2007, 2011)

That approach yields a complete panel data set for those immigrants who have survived and stayed in the country until the year in which they were surveyed.

It does not measure a complete arrival cohort because some people may have left before the year of the survey. Sample sizes also are generally small, limiting the ability to analyze subpopulations.

See Wei-Yin Hu, "Immigrant Earnings Assimilation: Estimates From Longitudinal Data," *American Economic Review*, vol. 90, no. 2 (May 2000), pp. 368–372, <https://doi.org/10.1257/aer.90.2.368>; Darren Lubotsky, "Chutes or Ladders? A Longitudinal Analysis of Immigrant Earnings," *Journal of Political Economy*, vol. 115, no. 5 (October 2007), pp. 820–867, <https://doi.org/10.1086/522871>, and "The Effect of Changes in the U.S. Wage Structure on Recent Immigrants' Earnings," *Review of Economics and Statistics*, vol. 93, no. 1 (February 2011), pp. 59–71, [https://doi.org/10.1162/REST\\_a\\_00094](https://doi.org/10.1162/REST_a_00094); Ran Abramitzky, Leah Platt Boustan, and Katherine Eriksson, "A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration," *Journal of Political Economy*, vol. 122, no. 3 (June 2014), pp. 467–506, <https://doi.org/10.1086/675805>; and Harriet Orcutt Duleep and Daniel J. Dowhan, "Insights From Longitudinal Data on the Earnings Growth of U.S. Foreign-Born Men," *Demography*, vol. 39, no. 3 (August 2002), pp. 485–506, <https://doi.org/10.1353/dem.2002.0026>, and "Research on Immigrant Earnings," *Social Security Bulletin*, vol. 68, no. 1 (2008), pp. 31–43, [www.ssa.gov/policy/docs/ssb/v68n1/v68n1p31.html](http://www.ssa.gov/policy/docs/ssb/v68n1/v68n1p31.html).

# Contribution

Using the Social Security Administration's Continuous Work History Sample (CWHS), we:

- Estimate earnings assimilation over a long period (up to 20 years after arrival),
- Examine how trends in assimilation have evolved for arrival cohorts from 1981 to 2010,
- Examine the earnings assimilation of emigrants before their departure, and
- Examine variation in earnings by arrival cohort and country of origin.

This work builds on existing research by Akee and Jones (2024) and Rho and Sanders (2021), who also use complete longitudinal data but are limited to fewer arrival cohorts and a shorter sample period.

# Overview of Results

## Emigration

For both men and women, a greater share of foreign-born people who arrived in the early 2000s emigrated within 10 years of arrival than those who arrived in the 1980s.

- About 20 percent of foreign-born people with a Social Security number (SSN) who arrived between 1978 and 1987 emigrated within 10 years.
- That share is about 30 percent for cohorts arriving between 2005 and 2010.

With a greater share of an arrival cohort remaining in the United States 10 years after arrival, women are less likely to emigrate than men.

# Overview of Results (continued)

## Earnings Assimilation

Permanent migrants reach parity with native-born workers earlier for males (8 years) than for females (19 years).

- We define parity as when the log earnings differential between foreign- and native-born workers equals zero.

Among men, earnings assimilation has been faster for arrival cohorts in the late 1990s and early 2000s than for those in the 1980s and early 1990s.

Among women, earnings assimilation is about the same across arrival cohorts examined here.

Compared with native-born workers, emigrants of both sexes have lower earnings before leaving than permanent migrants.

Earnings assimilation varies markedly by country of origin.

- Earnings differential upon arrival has shrunk for migrants from India.

# Road Map

Data and Sample

Immigration Trends

Emigration Trends

Earnings Assimilation

Earnings Assimilation, by Arrival Cohort and Sex

Earnings Assimilation of Emigrants, by Length of Stay and Sex

Earnings Upon Arrival and Earnings Growth, by Country of Origin, Arrival Cohort, and Sex

Conclusions



# **Data and Sample**

# Data

We use the CWHS, an administrative data set obtained from the Social Security Administration.

The data contain longitudinal information on earnings over the 1981–2021 period as well information on age, sex, and country of birth.

Those data are shared with CBO for the purposes of generating long-run projections of Social Security. How immigrants' earnings evolve is an important component of those projections.

# Foreign-Born Population in the CWHS

Our data is a 1 percent sample of all individuals with an SSN.

The foreign-born population in the data includes people with work authorization, naturalized citizens, and other immigrants working legally in the United States.

It does not include people working in the informal labor market. It could include some people working with a fraudulent SSN or people who were issued an SSN while working under a temporary immigration status but continued working and reporting earnings after that status expired.

- The Social Security Administration estimates that the number of such immigrants present in its administrative files is small (Goss and colleagues 2013).

# Sample

We restrict the sample to:

- Native-born people ages 25–65
- Foreign-born people who arrived over the 1981–2010 period and were ages 25–45 at arrival

The sample includes about 500,000 foreign-born people and about 4 million native-born people.

We use the year of SSN issuance as a proxy for the year of arrival. The first year of arrival in our analysis is defined as the first full year after SSN issuance (to avoid a partial year of earnings).

# Characteristics of the Sample

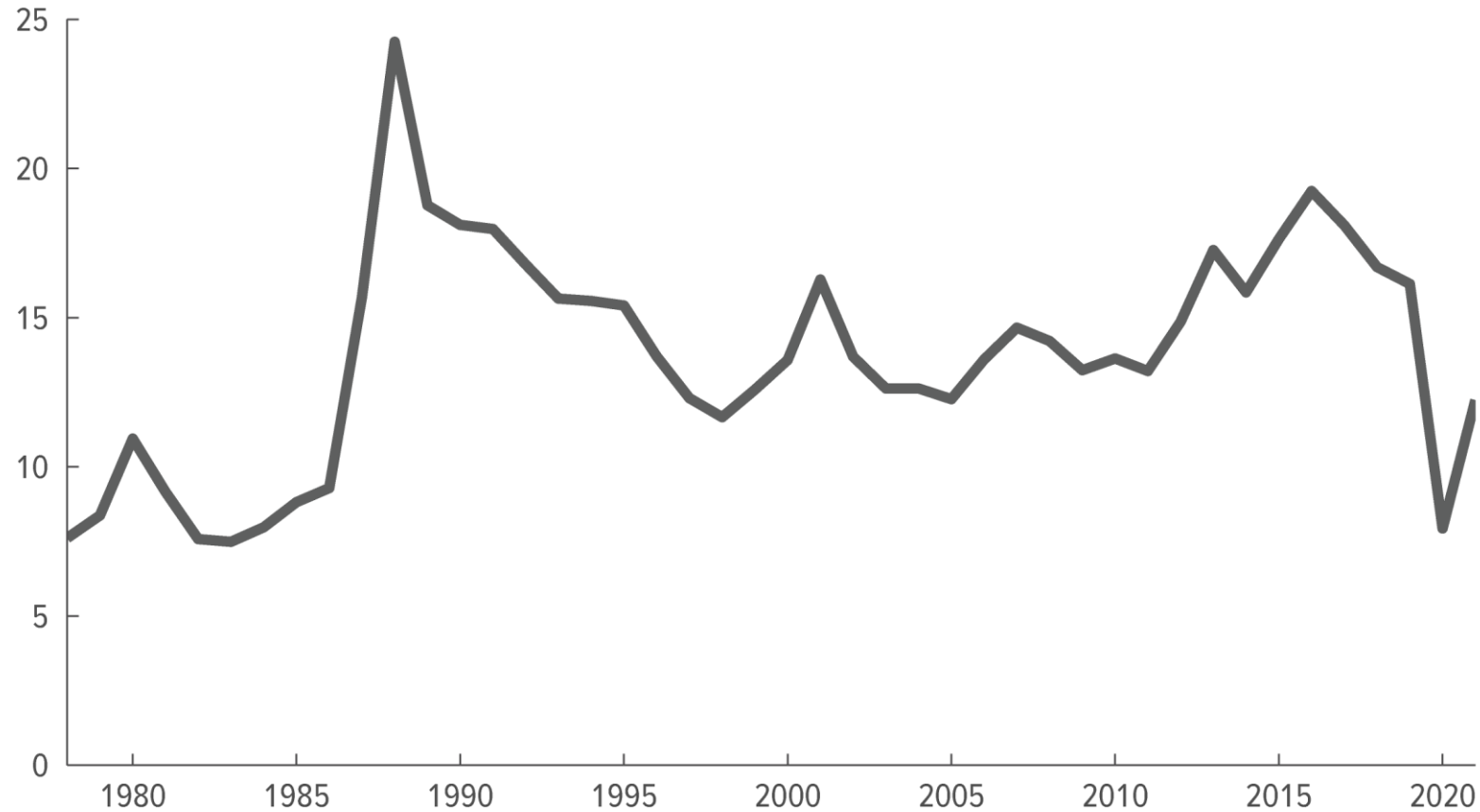
	1981	2010
<u>Foreign-born people</u>		
Age	41.1	42.7
Average annual earnings (2021 dollars)	22,500	29,200
Female (percent)	46.2	48.8
Country of origin (percent):		
Mexico	17.2	13.6
India	2.9	7.8
China	1.8	6.2
Observations	45,100	101,100
<u>Native-born people</u>		
Age	43.3	45.3
Average annual earnings (2021 dollars)	30,600	37,800
Female (percent)	48.9	48.9
Observations	1,153,900	1,480,600



# **Immigration Trends**

# Issuances of Social Security Numbers, Total

Social Security numbers issued (thousands)

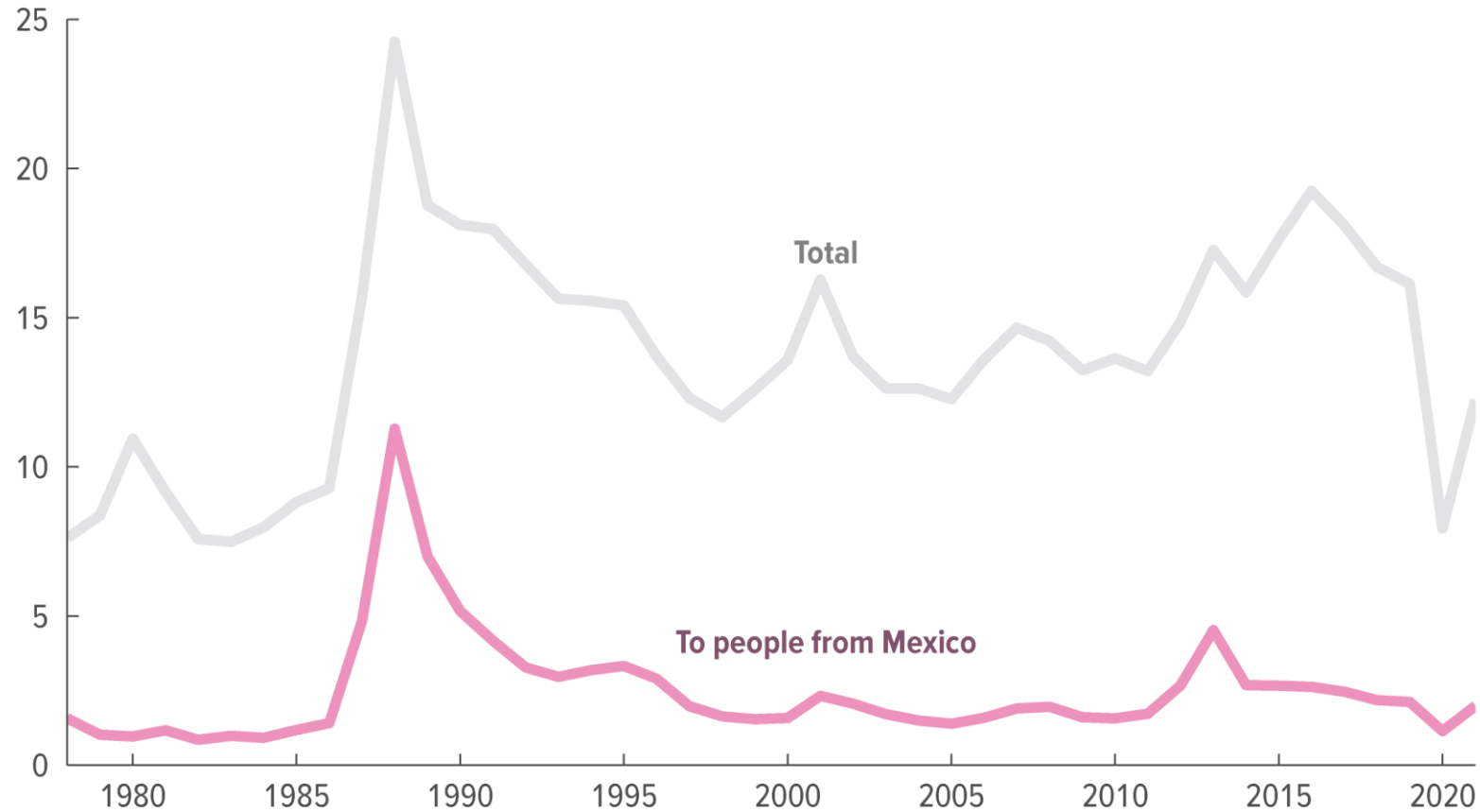


The large spike in issuances of SSNs in the late 1980s is associated with the Immigration Reform and Control Act (IRCA).

The large drop in 2020 occurred during the COVID-19 pandemic.

# Issuances of Social Security Numbers to People From Mexico

Social Security numbers issued (thousands)



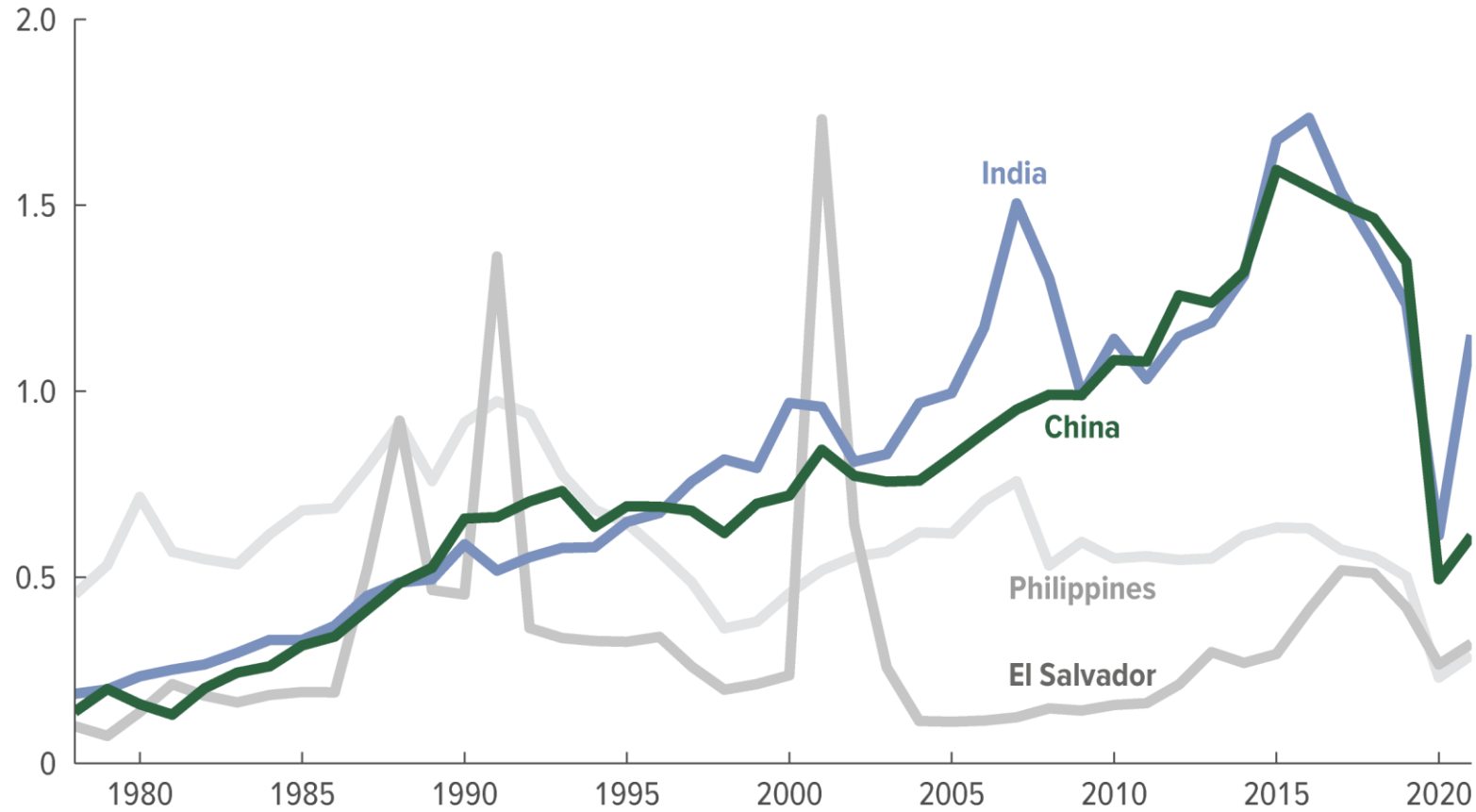
Mexico is the largest sending country.

The increase in total issuances due to IRCA in the late 1980s is largely among people from Mexico.

The increase in 2012–2013 coincides with the 2012 establishment of Deferred Action for Childhood Arrivals (DACA).

# Issuances of Social Security Numbers to People From India and China

Social Security numbers issued (thousands)

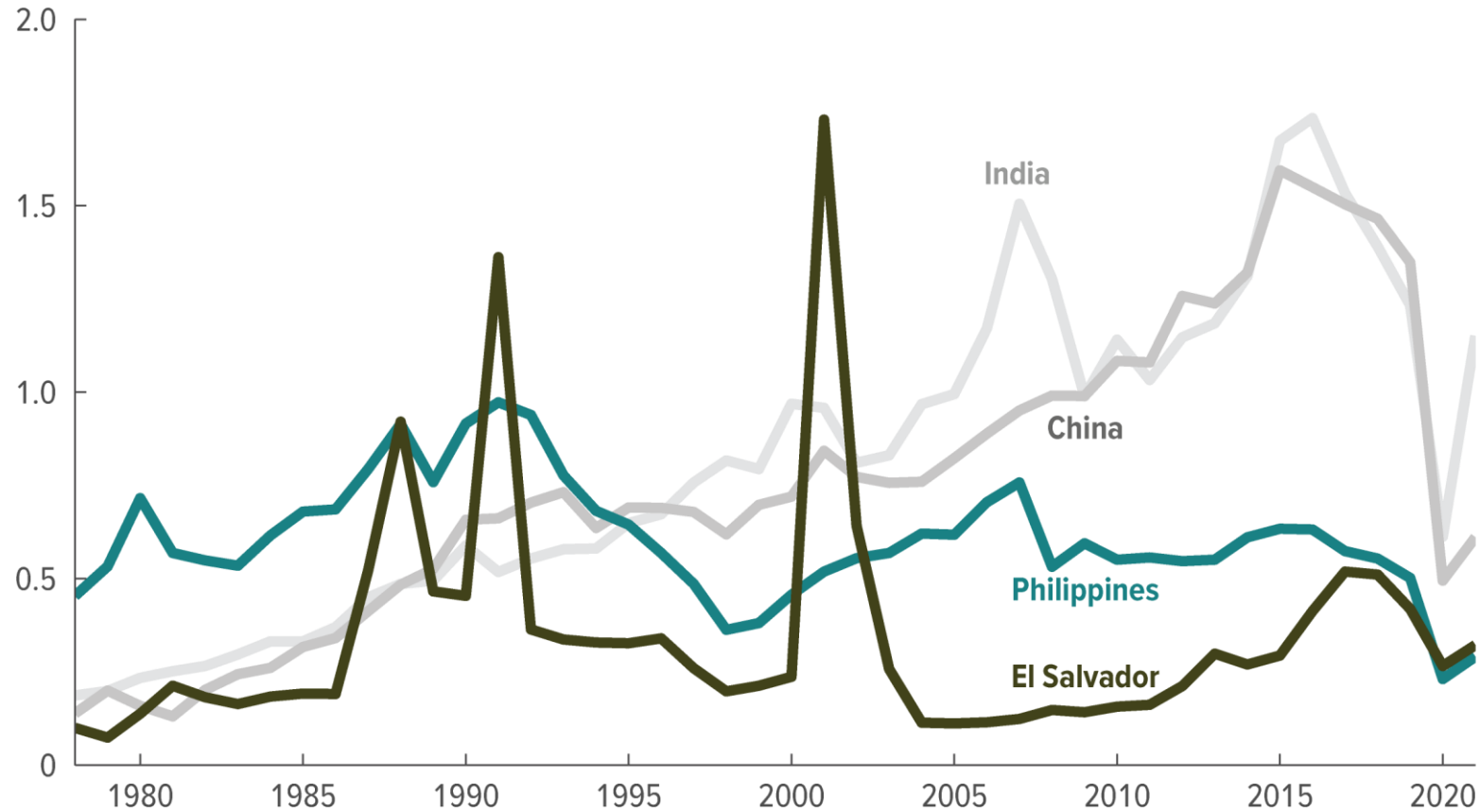


Immigration from India and China has risen steadily over time.

Immigration from those countries declined sharply during the pandemic.

# Issuances of Social Security Numbers to People From the Philippines and El Salvador

Social Security numbers issued (thousands)



The Philippines is the second-largest sending country in the 1980s and stays in the top five through the end of the sample period.

Immigration from El Salvador shows significant spikes as a result of:

- IRCA (late 1980s)
- Establishment of Temporary Protected Status (TPS) for El Salvador (Immigration Act of 1990)
- Natural disasters, particularly an earthquake in 2001



# **Emigration Trends**

# Example: Imputation of Emigration

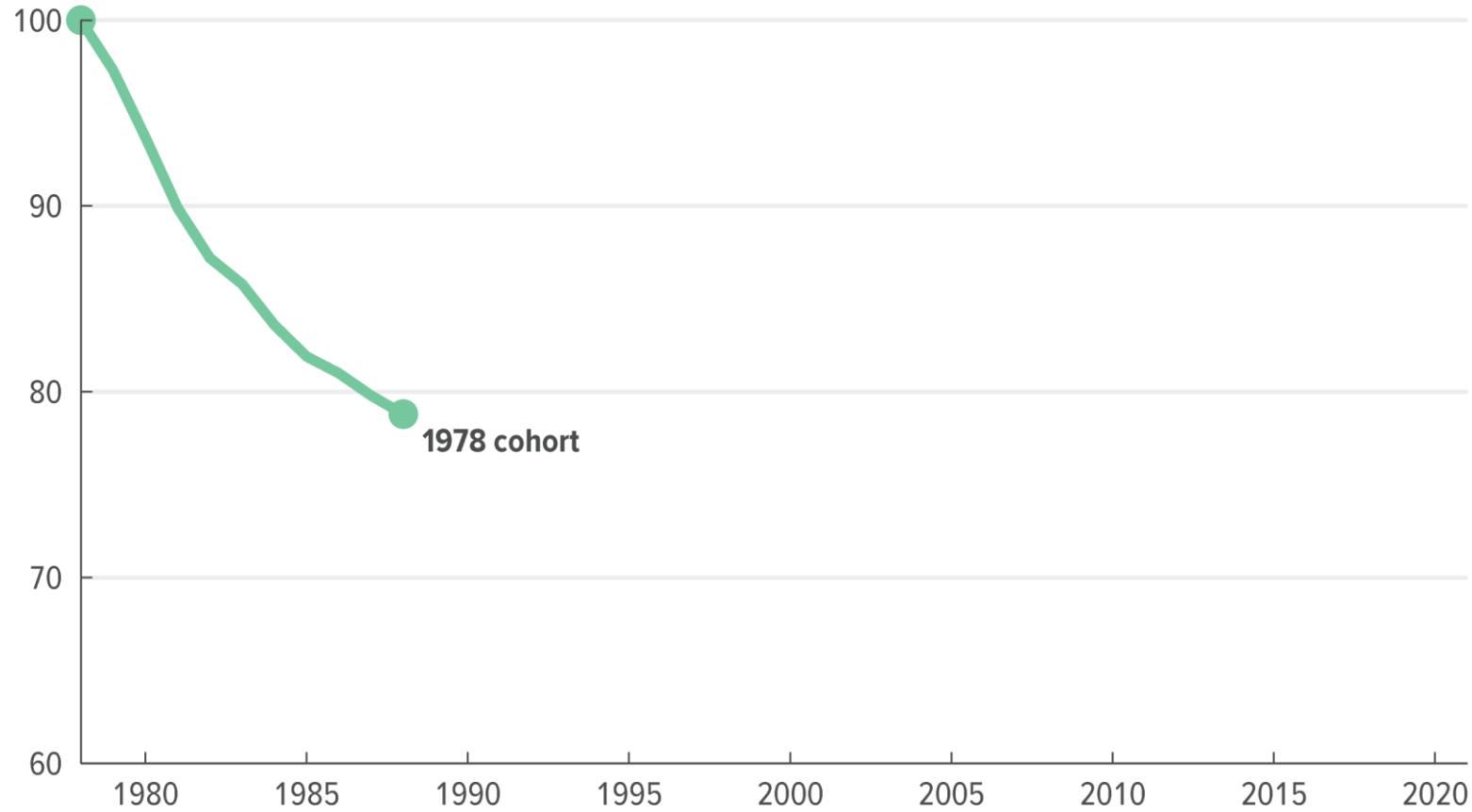
Example for the 2015 Arrival Cohort

Year	Presence of positive earnings		
	Person A	Person B	Person C
2015	Y	Y	Y
2016	Y	Y	Y
2017	Y	N	Y
2018	Y	N	Y
2019	Y	Y	N
2020	Y	Y	N
2021	Y	Y	N

- Person A has consecutive earnings from their year of arrival through the end of our sample period.
  - Permanent migrant
  
- Person B has a two-year spell of zero earnings but returns with positive earnings thereafter.
  - Permanent migrant
  
- Person C has positive earnings for four years and then no earnings through the end of our sample period.
  - Emigrant

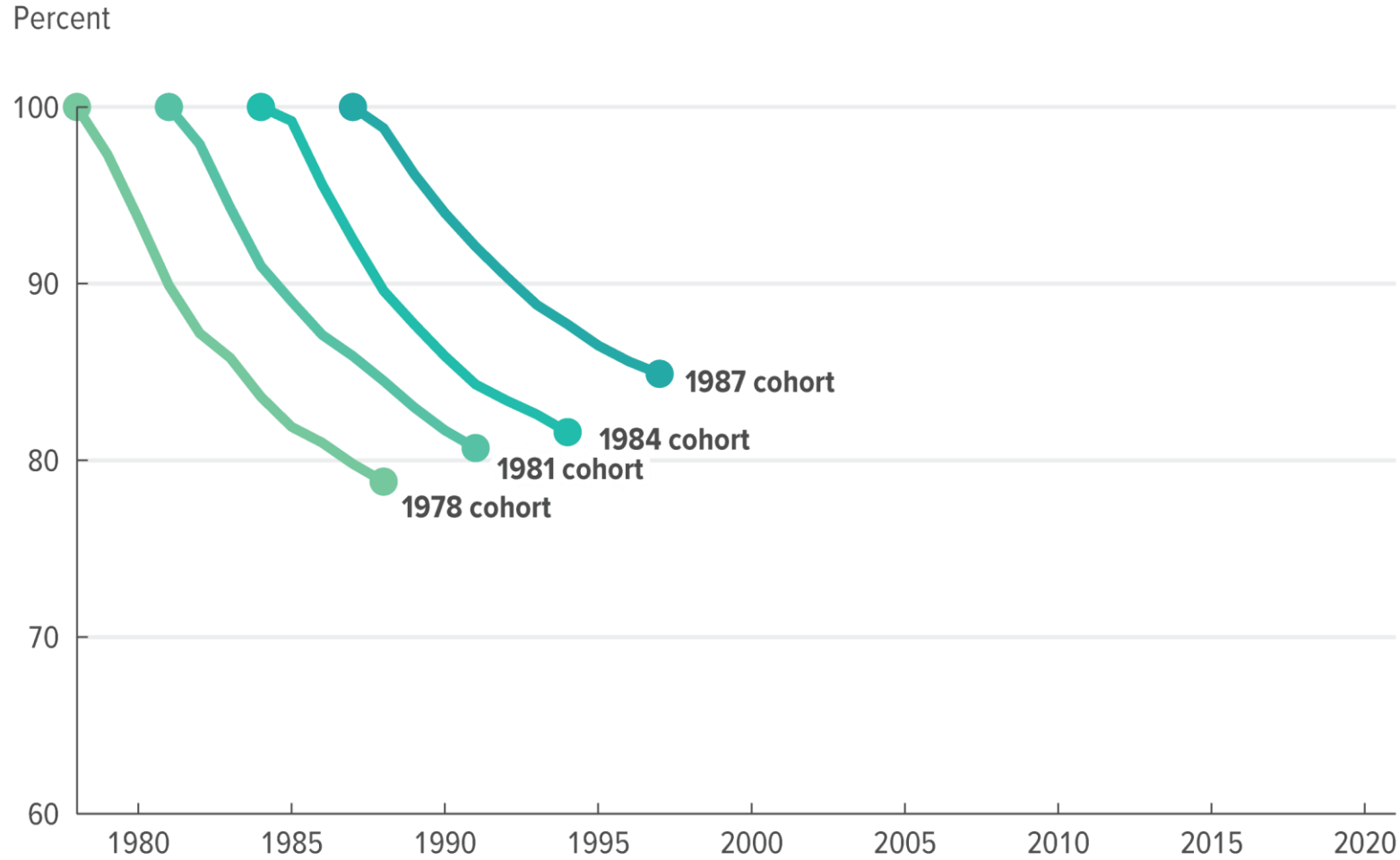
# Percentage of a Cohort Staying up to 10 Years After Arrival, Men

Percent



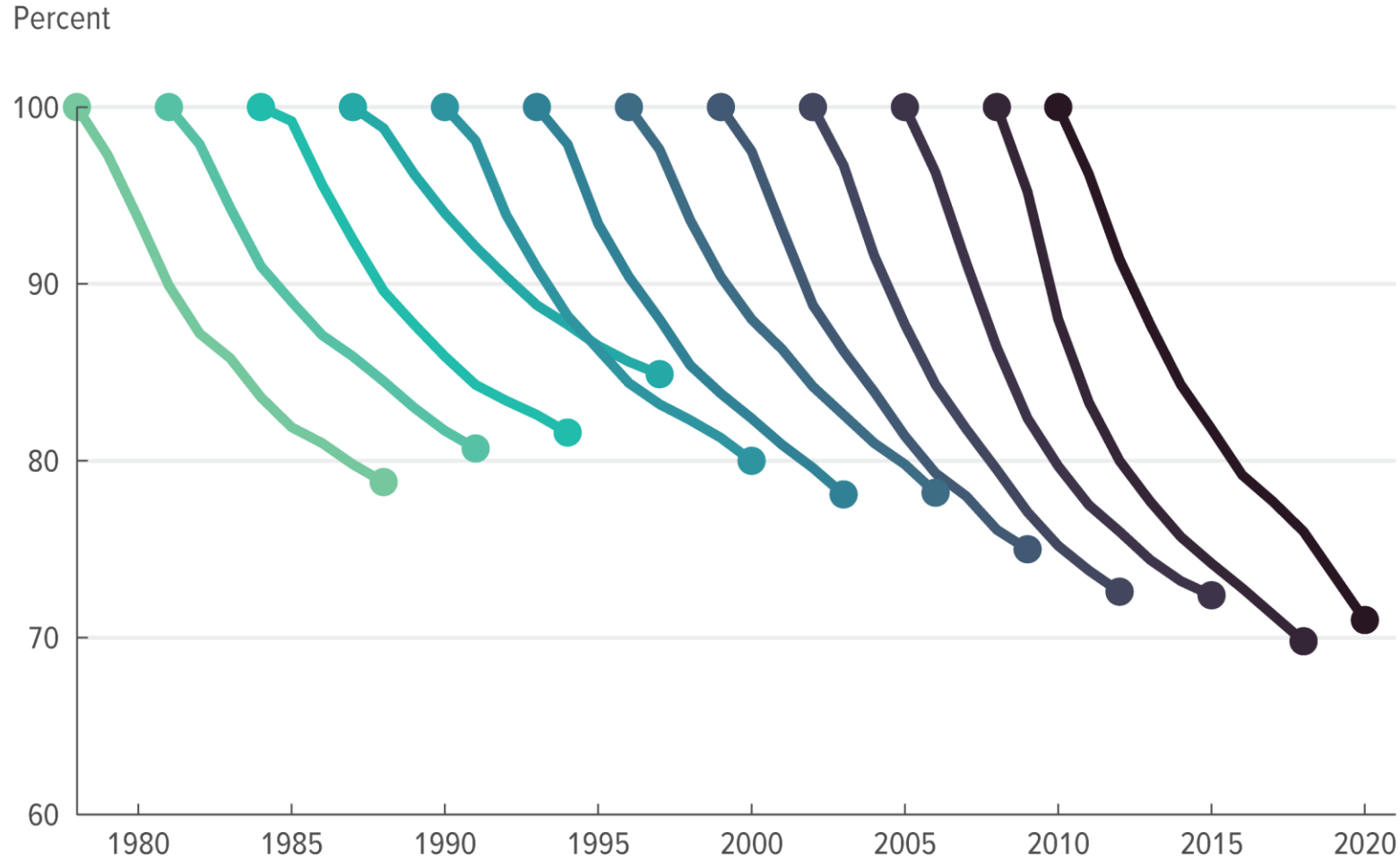
About 80 percent of men who arrived in 1978 stayed in the United States 10 years later.

# Percentage of a Cohort Staying up to 10 Years After Arrival, Men



That share rises to 85 percent for men in the 1987 arrival cohort.

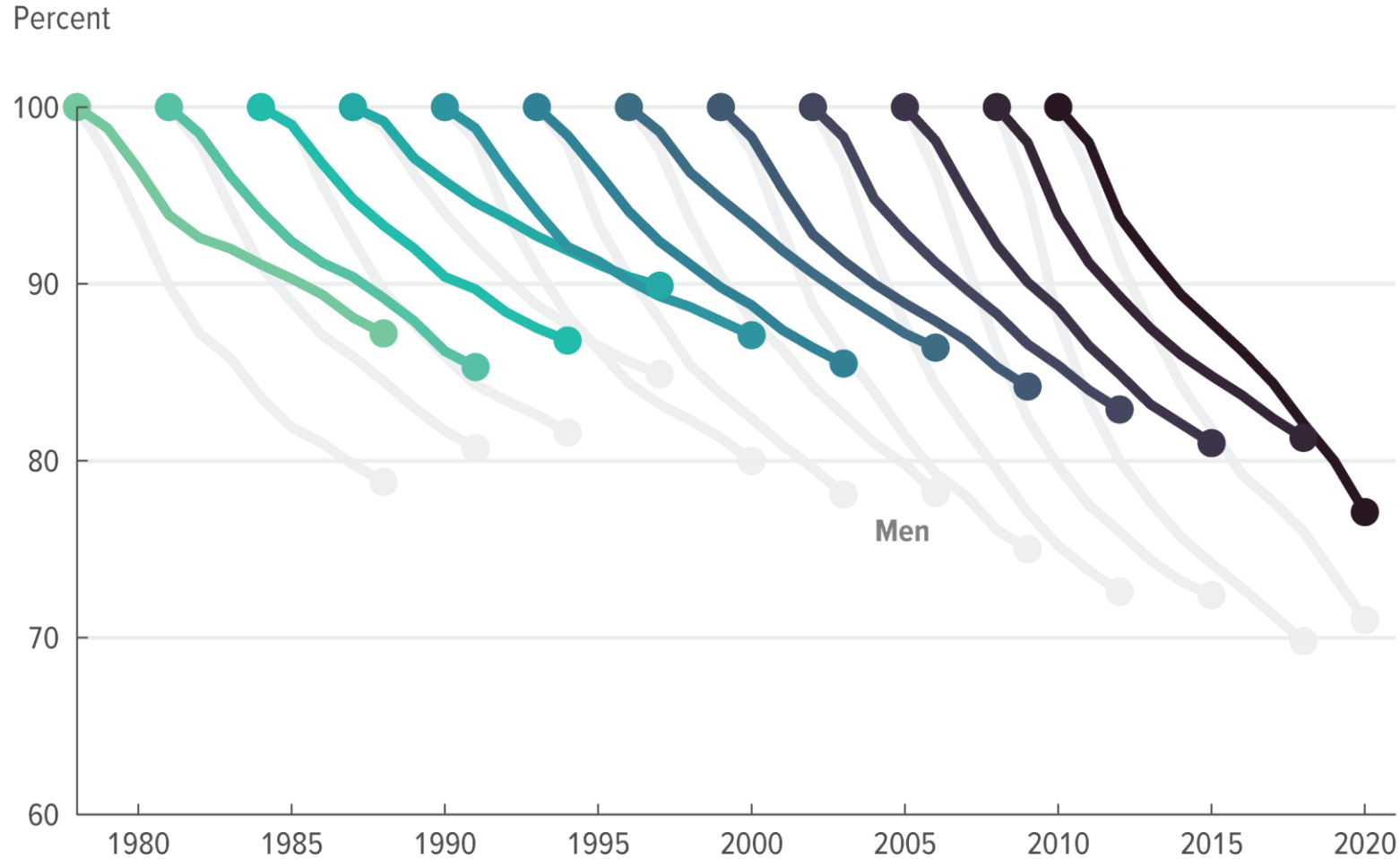
# Percentage of a Cohort Staying up to 10 Years After Arrival, Men



After the 1987 arrival cohort, the share of an arrival cohort that stays 10 years after arrival declines.

About 70 percent of men who arrived in 2010 stayed in the United States 10 years later.

# Percentage of a Cohort Staying up to 10 Years After Arrival, Women



Women who arrived after 1987 also are emigrating at higher rates than previous cohorts.

On average, women from any arrival cohort are less likely to emigrate than men.



# **Earnings Assimilation**

# Estimating Earnings Assimilation

We estimate earnings assimilation by using the following specification:

$$y_{ict} = \sum_{t-c} \gamma_{t-c} + \lambda_c + \theta_{it} + \tau_t + \epsilon_{ict}$$

where  $i$  indexes individuals,  $c$  denotes the arrival cohort, and  $t$  denotes calendar year.

The outcome  $y_{ict}$  is the natural log of earnings, and  $\gamma_{t-c}$  are indicators for years since migration.

We control for cohort fixed effects ( $\lambda_c$ ), age fixed effects ( $\theta_{it}$ ), and year fixed effects ( $\tau_t$ ).

Native-born workers form the omitted group for the years-since-migration variable, so our parameter of interest,  $\gamma_{t-c}$ , is interpreted as the immigrant-native earnings gap in each year after arrival, conditional on the fixed effects.

## Types of Migrants

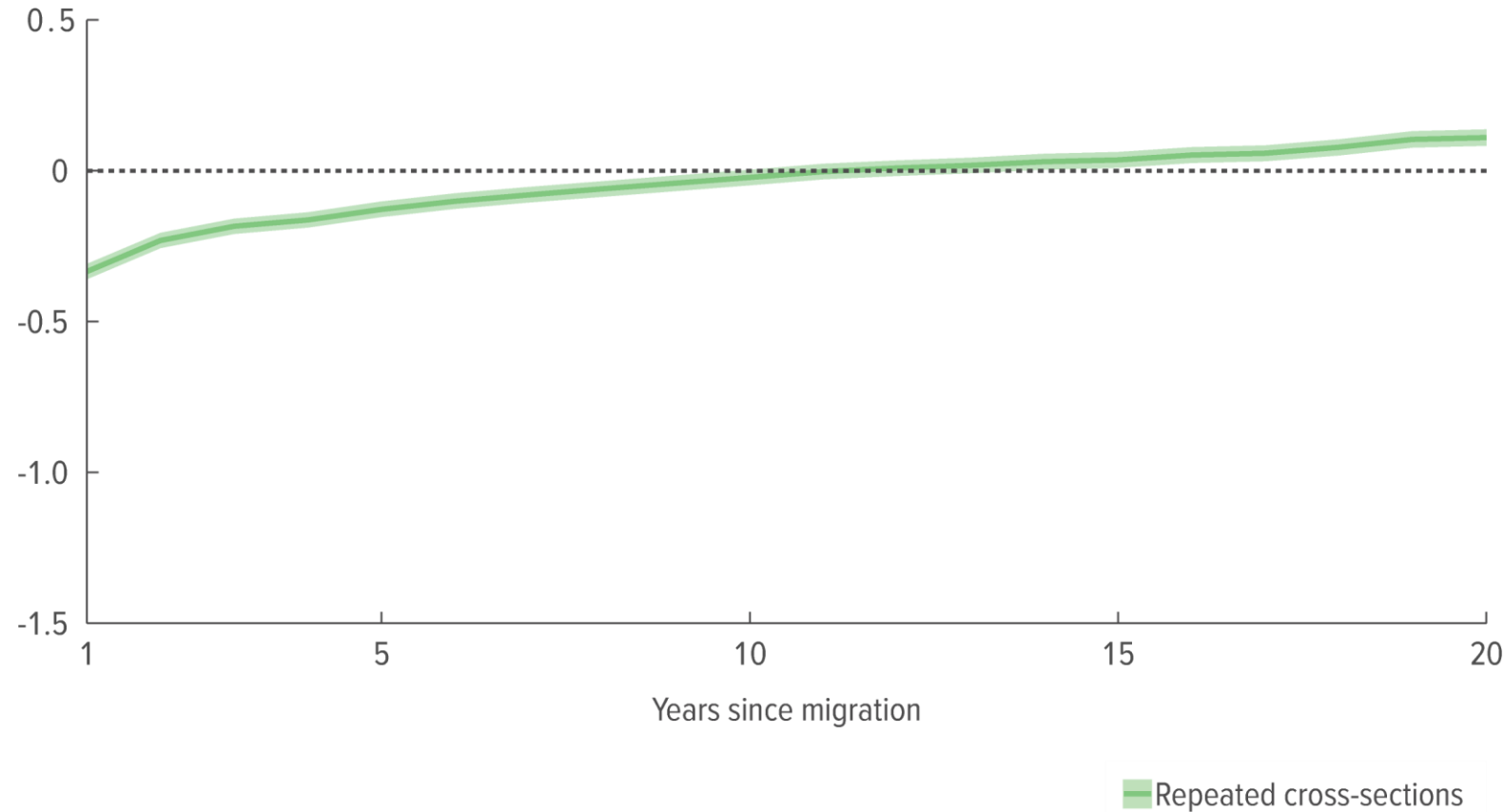
Emigrants are imputed as those with a prolonged absence of earnings (through 2021, the end of the sample period).

Permanent migrants are all other foreign-born people (including people with temporary absences from the labor market).

We also pool those groups to show what a cross-sectional analysis (which would not be able to distinguish the two types) would estimate.

# Earnings Assimilation of Men: Using the Data as a Repeated Cross Section

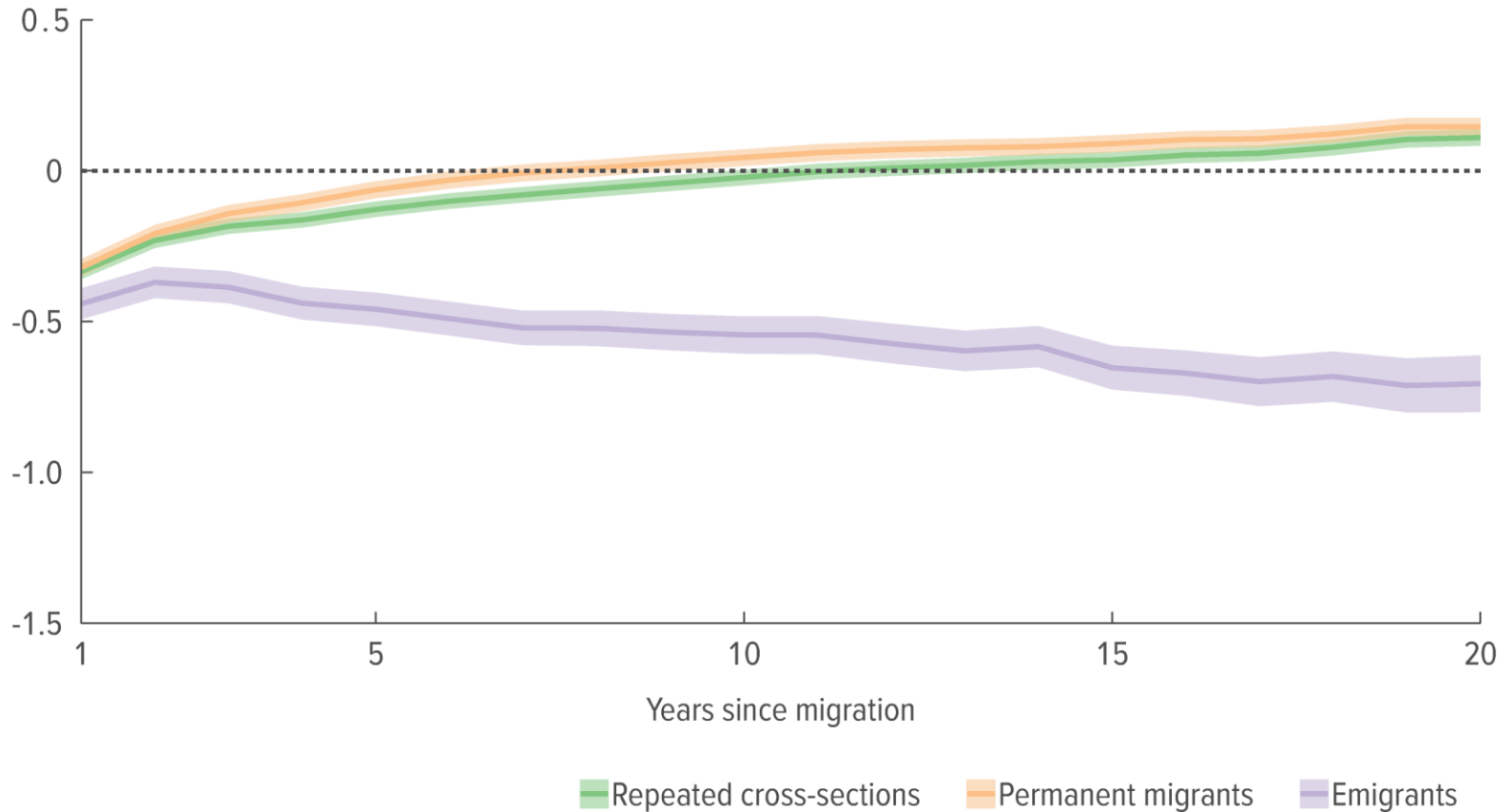
Relative log earnings



- As a cross section (emigrants and permanent migrants together):
- Men reach earnings parity with native-born workers in their 11th year after arrival.

# Earnings Assimilation of Men: Permanent Migrants, Emigrants, and Using the Data as a Repeated Cross Section

Relative log earnings

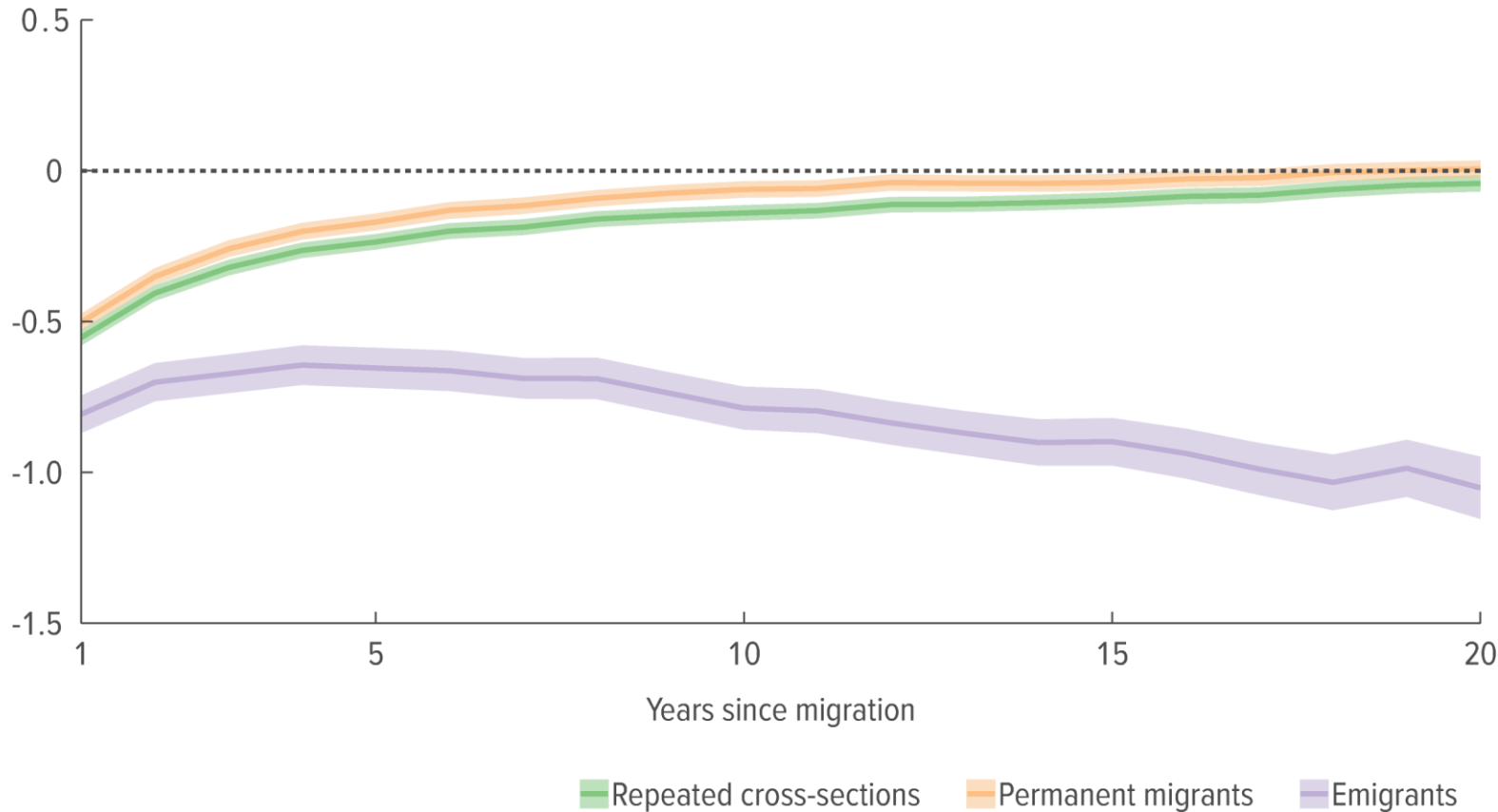


Distinguishing between permanent migrants and emigrants:

- Permanent migrants reach parity with native-born workers more quickly than when the data are treated as repeated cross sections (8 years rather than 11 years after arrival).
- Emigrants have a persistent and increasing earnings gap with native-born workers.

# Earnings Assimilation of Women: Permanent Migrants, Emigrants, and Using the Data as a Repeated Cross Section

Relative log earnings



Female permanent migrants reach parity with their native-born counterparts later than men (by the 19th year after arrival).

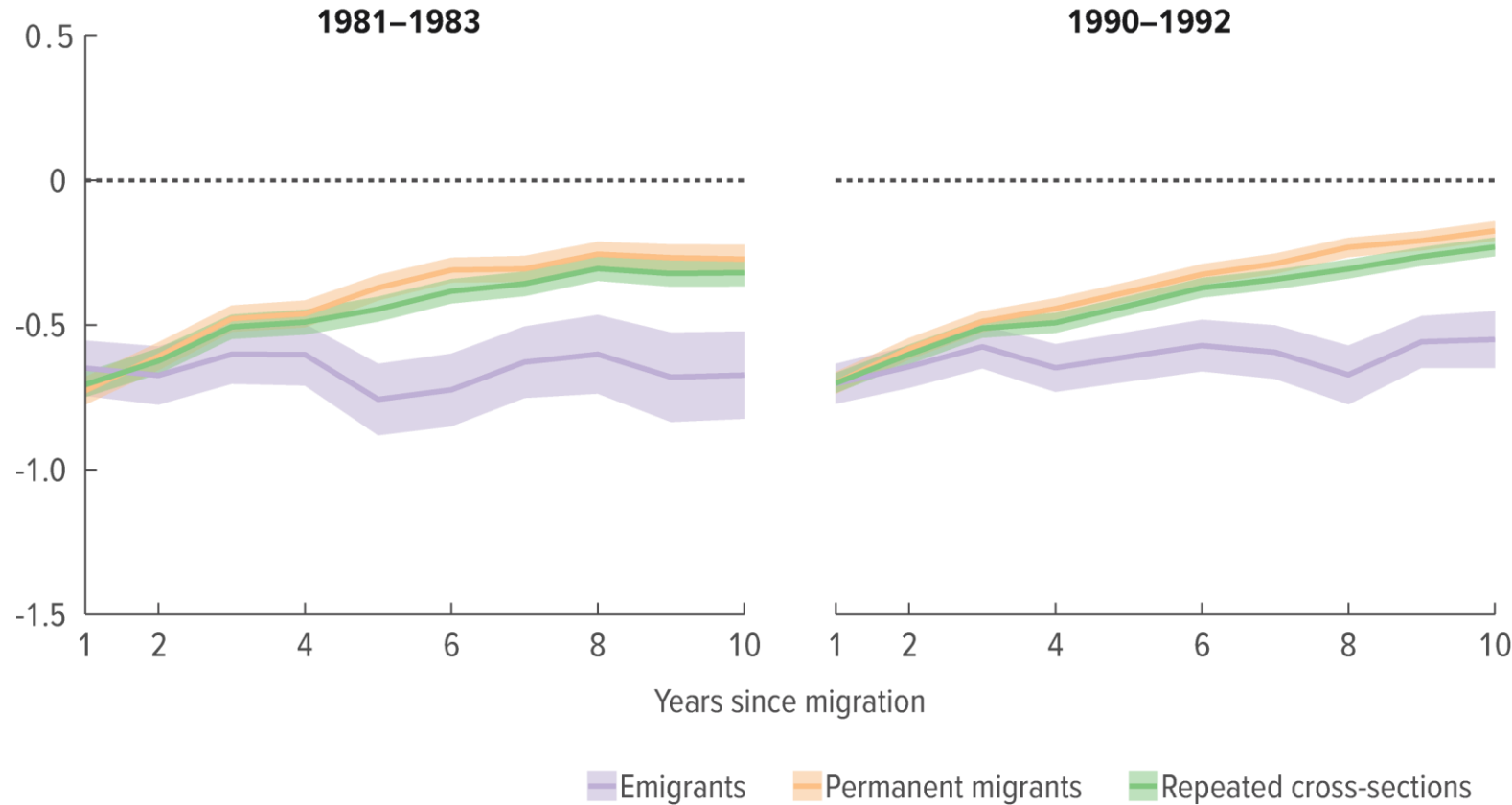
With both permanent migrants and emigrants considered together, that group of women does not reach parity with their native-born counterparts over the 20-year period after arrival.

As with men, female emigrants have a persistent and growing gap in earnings in relation to their native-born counterparts.

# **Earnings Assimilation, by Arrival Cohort and Sex**

# Earnings Assimilation by Arrival Cohort, Men

Relative log earnings

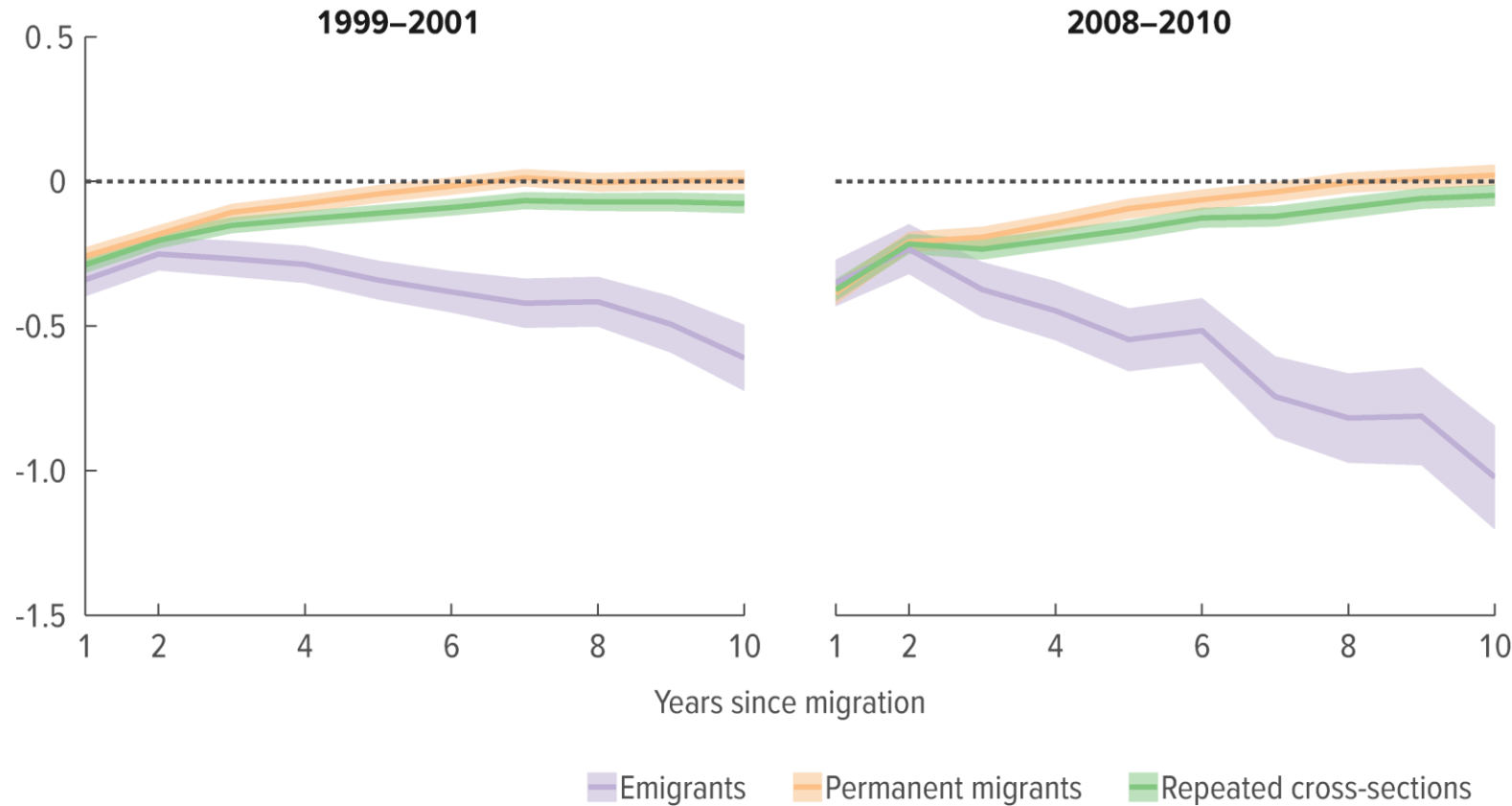


Earnings assimilation occurs faster for cohorts of men who arrived after the 1980s.

Among men, parity with native-born workers was not achieved within the first 10 years for cohorts that arrived in the 1980s and 1990s.

# Earnings Assimilation by Arrival Cohort, Men

Relative log earnings

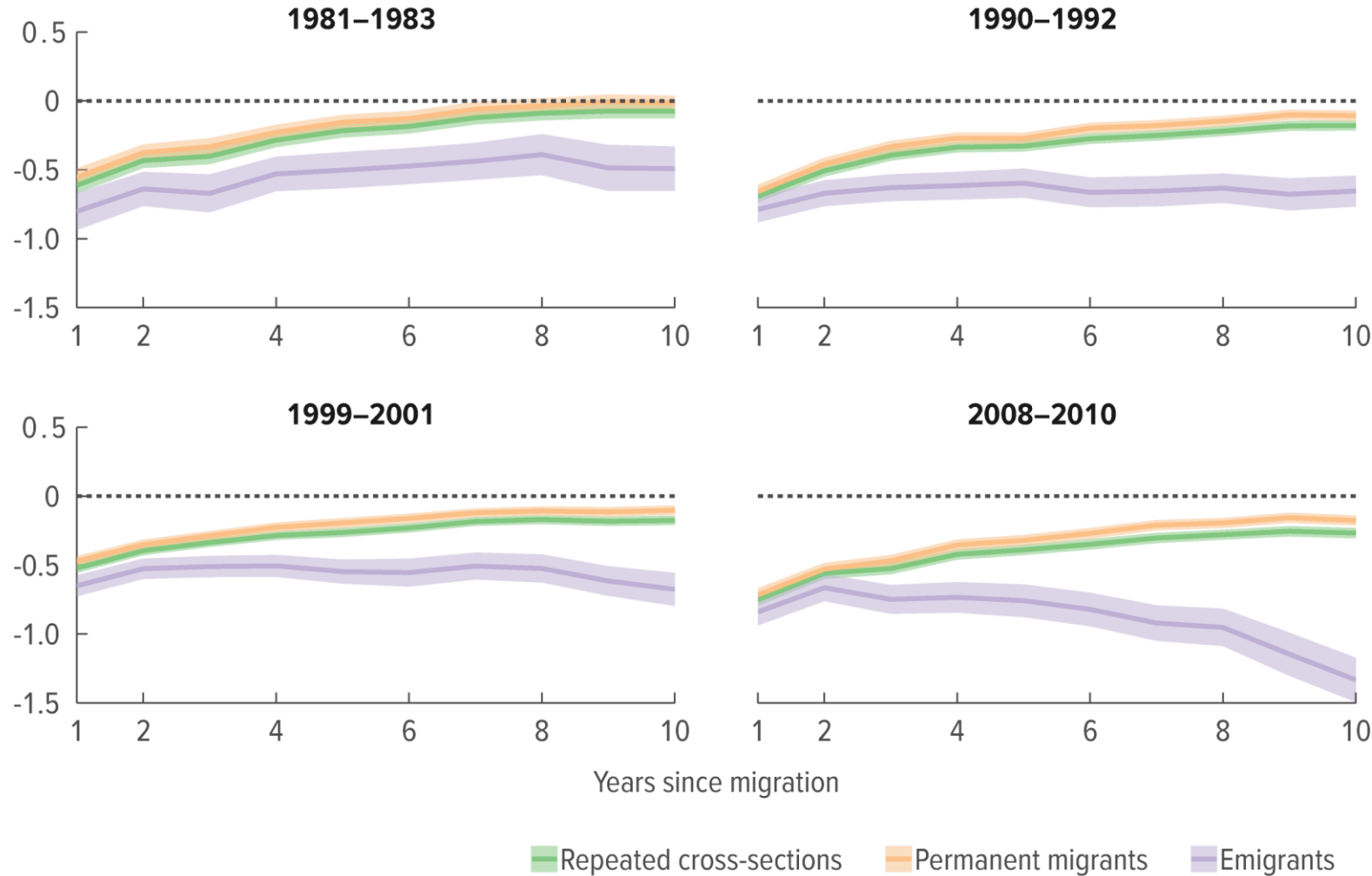


Among men, parity is achieved within the first 10 years for cohorts that arrived in the late 1990s and early 2000s.

Male emigrants who arrived in the late 1990s and early 2000s have declining earnings in relation to their native-born counterparts.

# Earnings Assimilation by Arrival Cohort, Women

Relative log earnings



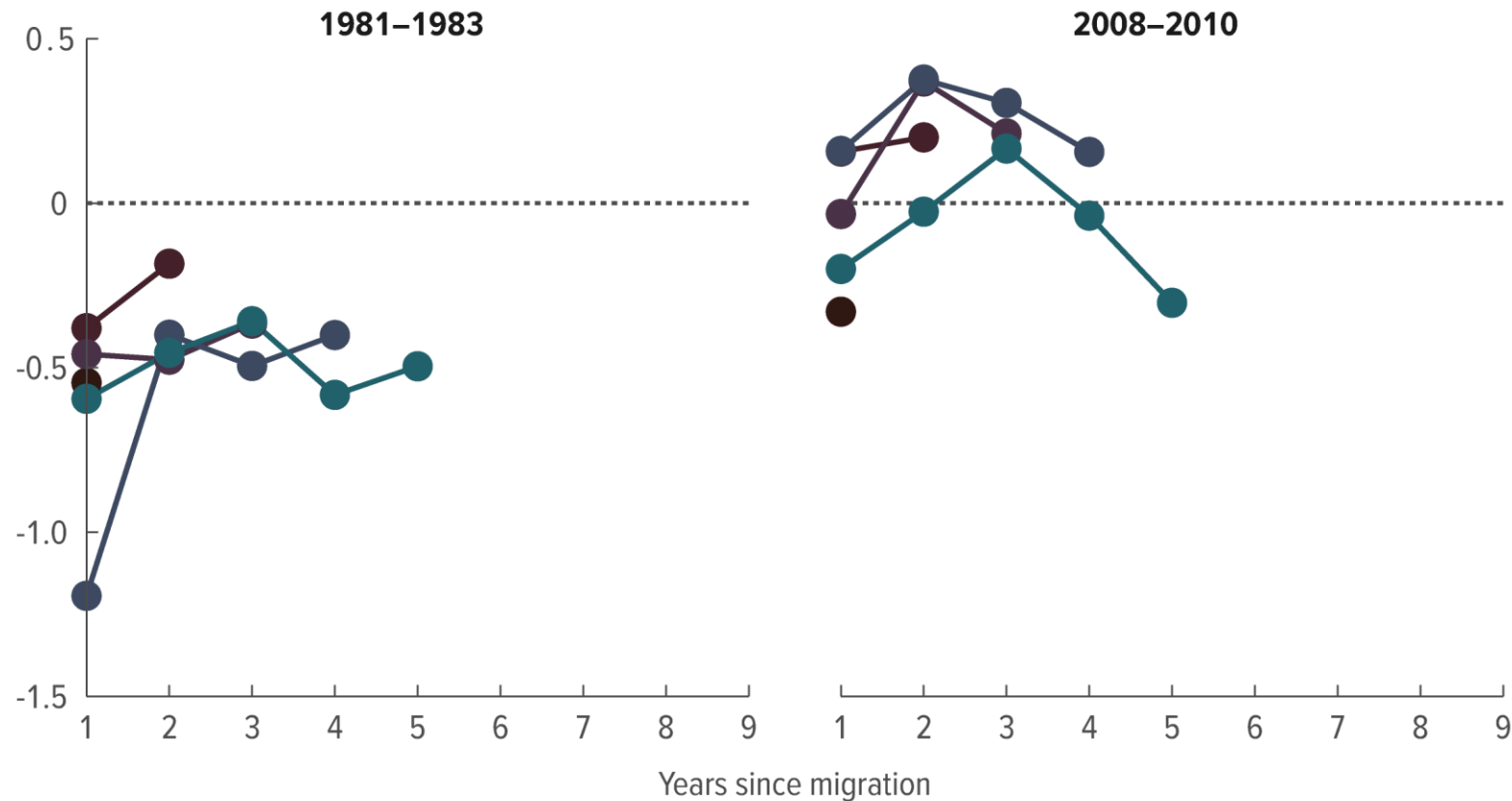
For all cohorts after the early 1980s, women do not achieve parity with their native-born counterparts within the first 10 years.

Rates of earnings assimilation are about the same for women across all cohorts, unlike for men.

# **Earnings Assimilation of Emigrants, by Length of Stay and Sex**

# Earnings Assimilation of Male Emigrants, by Length of Stay

Relative log earnings



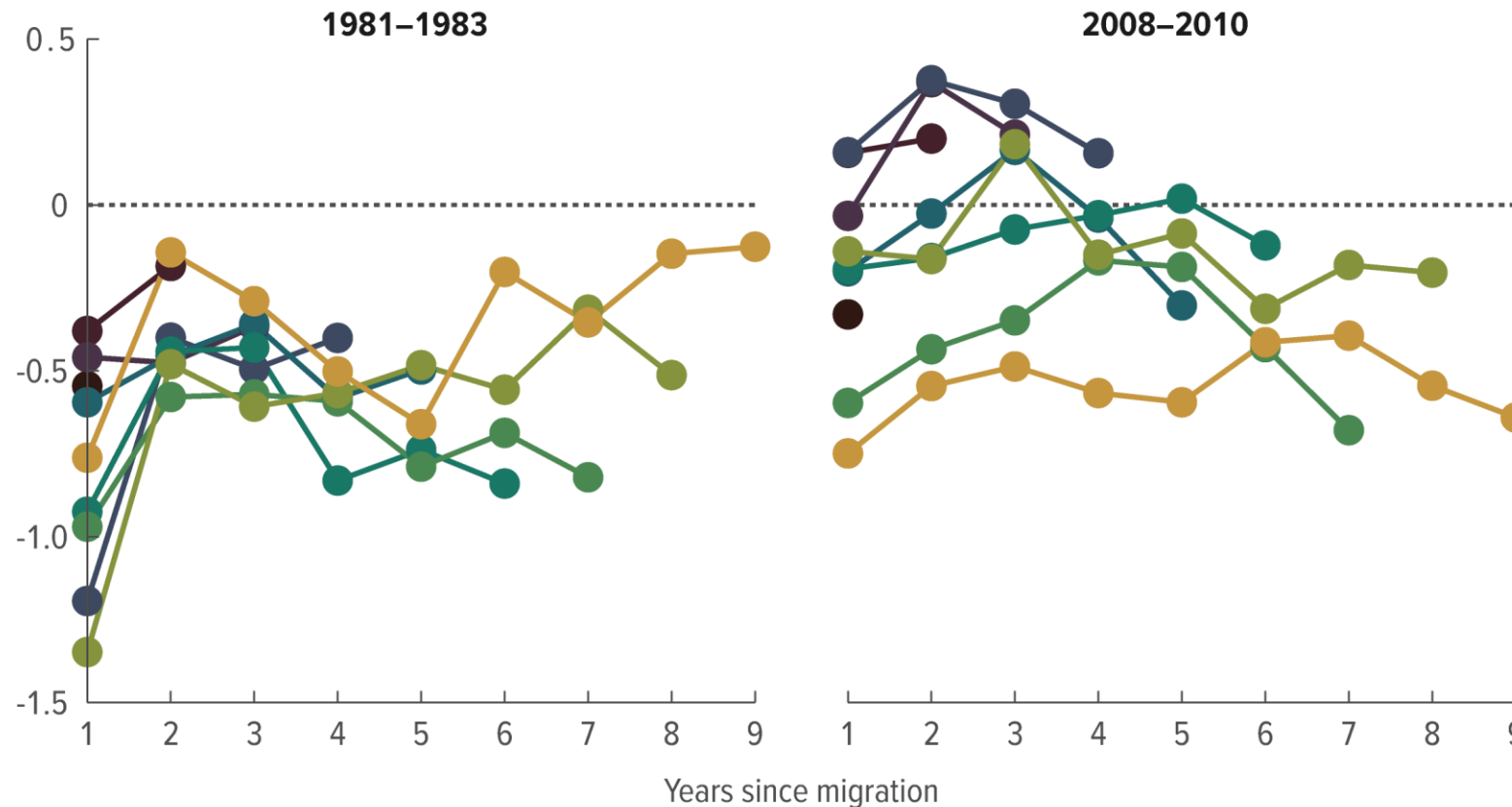
Male emigrants from the 1981–1983 arrival cohort have a roughly constant negative earnings differential with native-born workers.

Emigrants from the 2008–2010 arrival cohort have a declining differential before emigration.

Shown here are lines for those who stayed up to six years in the United States. The earnings differential in the year of emigration is not shown because it is likely a partial year of earnings.

# Earnings Assimilation of Male Emigrants, by Length of Stay

Relative log earnings



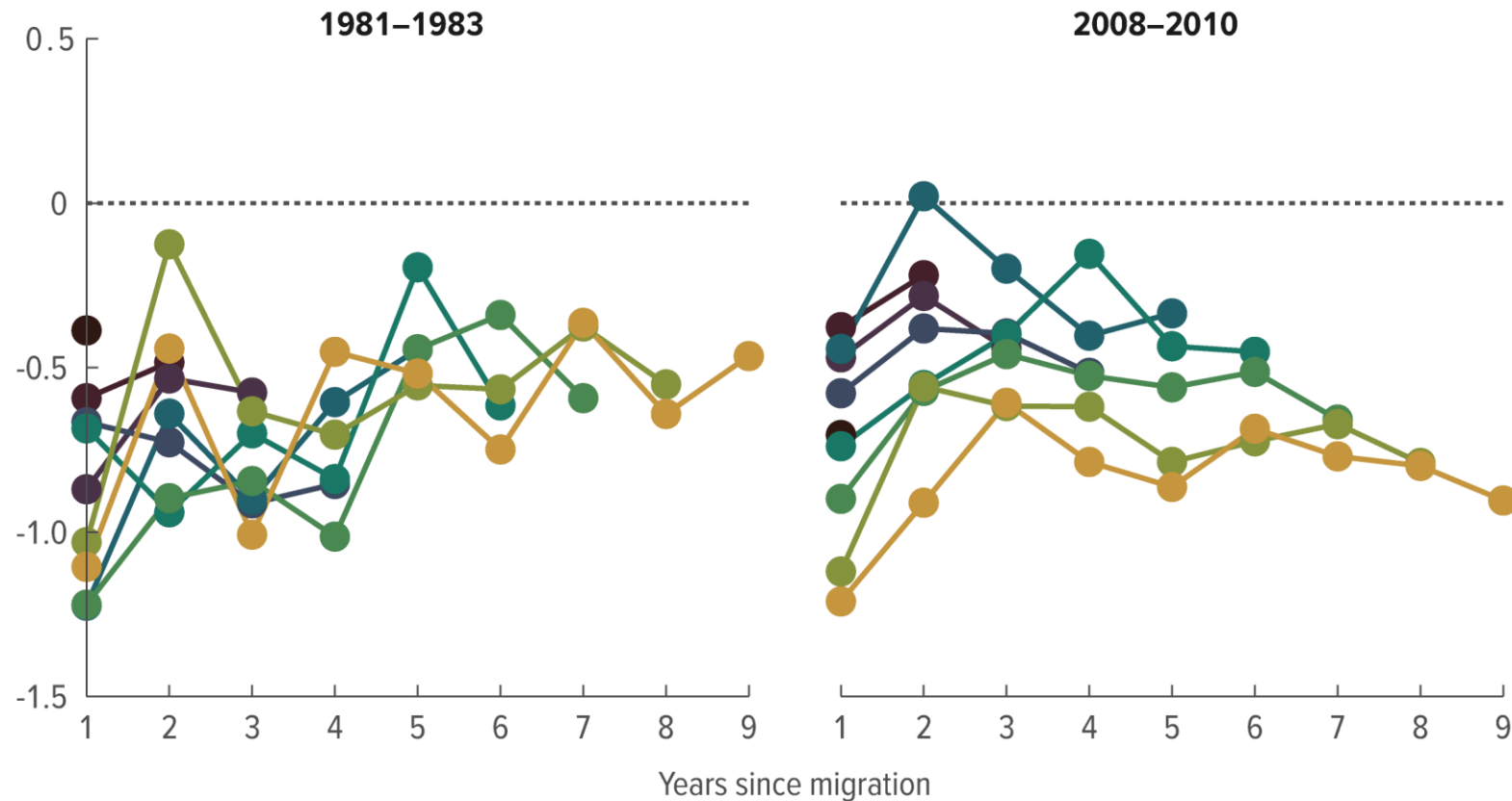
Those trends persist for emigrants who stayed longer.

Emigrants are negatively selected. For the 2008-2010 arrival cohort, evidence suggests that emigration may be related to widening earnings differentials in the years before emigration.

Shown here are lines for those who stayed up to 10 years in the United States. The earnings differential in the year of emigration is not shown because it is likely a partial year of earnings.

# Earnings Assimilation of Female Emigrants, by Length of Stay

Relative log earnings

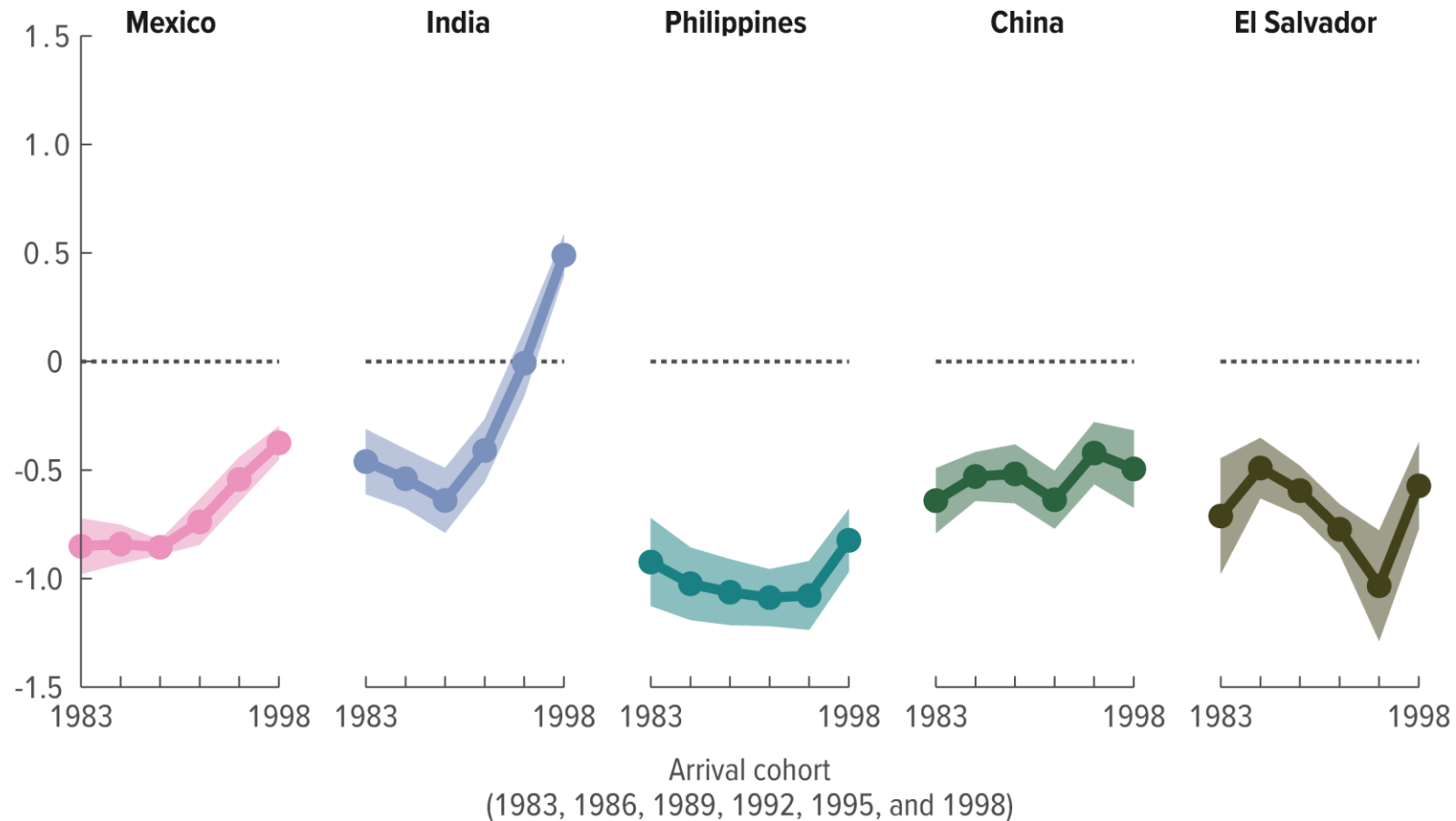


As with men, women from the 2008–2010 arrival cohort who emigrated experienced declining relative earnings in the years just before they emigrated.

# **Earnings Upon Arrival and Earnings Growth, by Country of Origin, Arrival Cohort, and Sex**

# Earnings Differential for Permanent Migrants Upon Entry, by Arrival Cohort and Country, Men

Relative log earnings



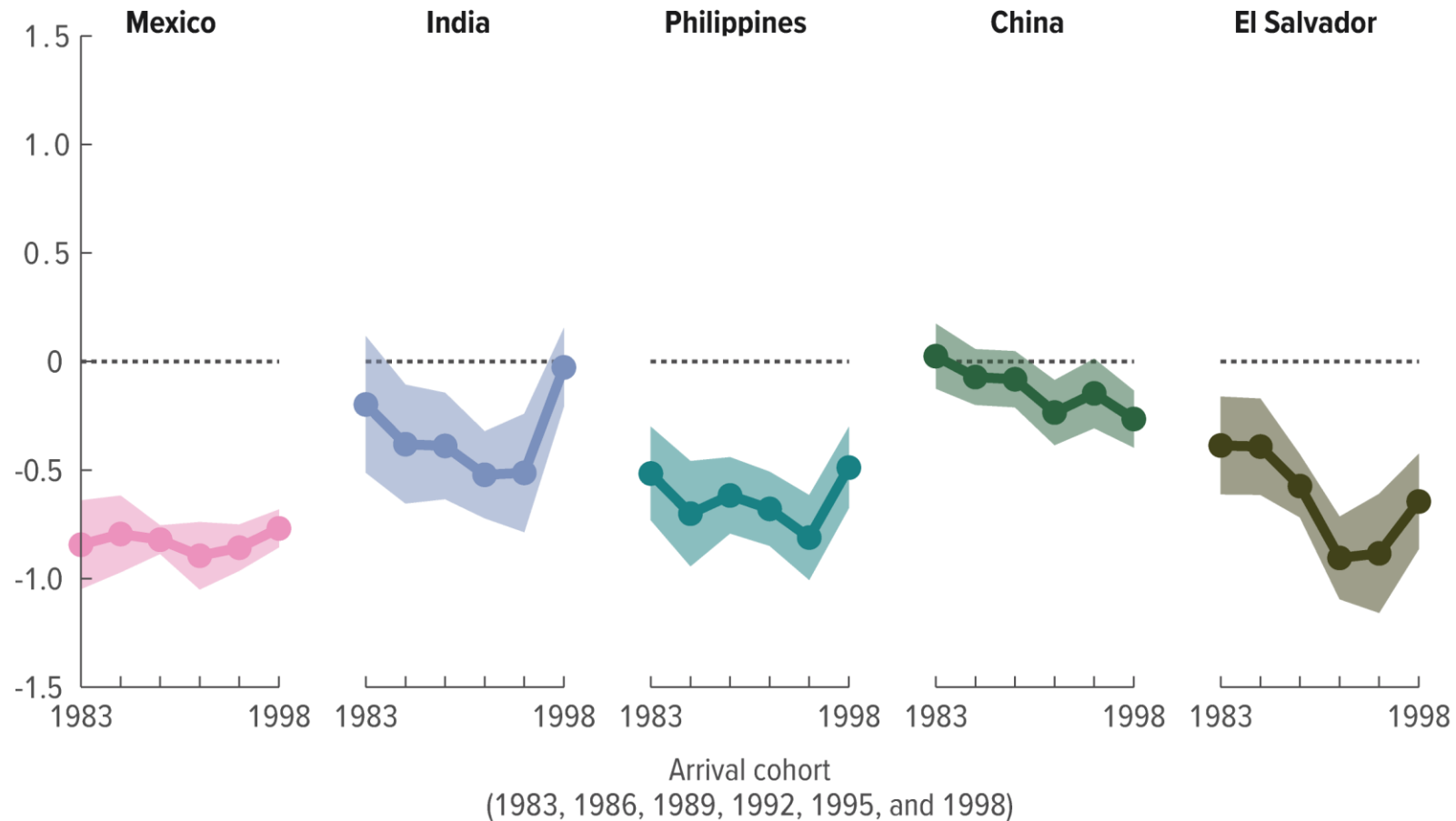
Permanent migrants initially earn less than native workers, but that gap has narrowed for arrivals in the late 1990s, particularly those from Mexico and India.

Permanent migrants from India who arrived in 1998 earn more than native-born workers upon arrival.

The differential for immigrants from the Philippines, China, and El Salvador has stayed relatively constant across arrival cohorts.

# Earnings Differential for Permanent Migrants Upon Entry, by Arrival Cohort and Country, Women

Relative log earnings



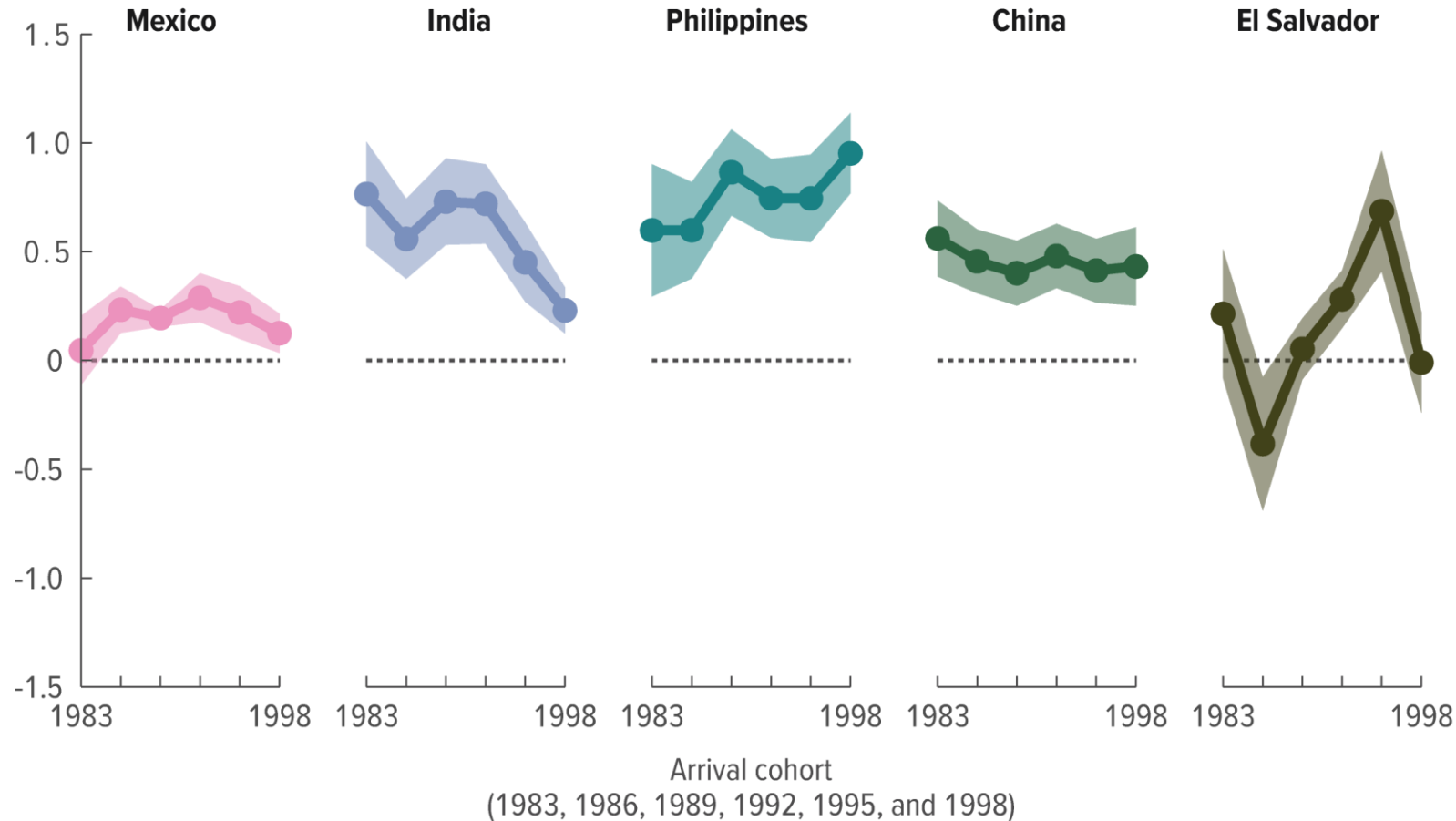
The earnings differential upon entry has narrowed for female permanent migrants from India.

The differential has stayed about the same for immigrants born in Mexico and the Philippines.

It has grown slightly for women born in China and El Salvador.

# Earnings Growth for Permanent Migrants, by Arrival Cohort and Country, Men

Relative log earnings

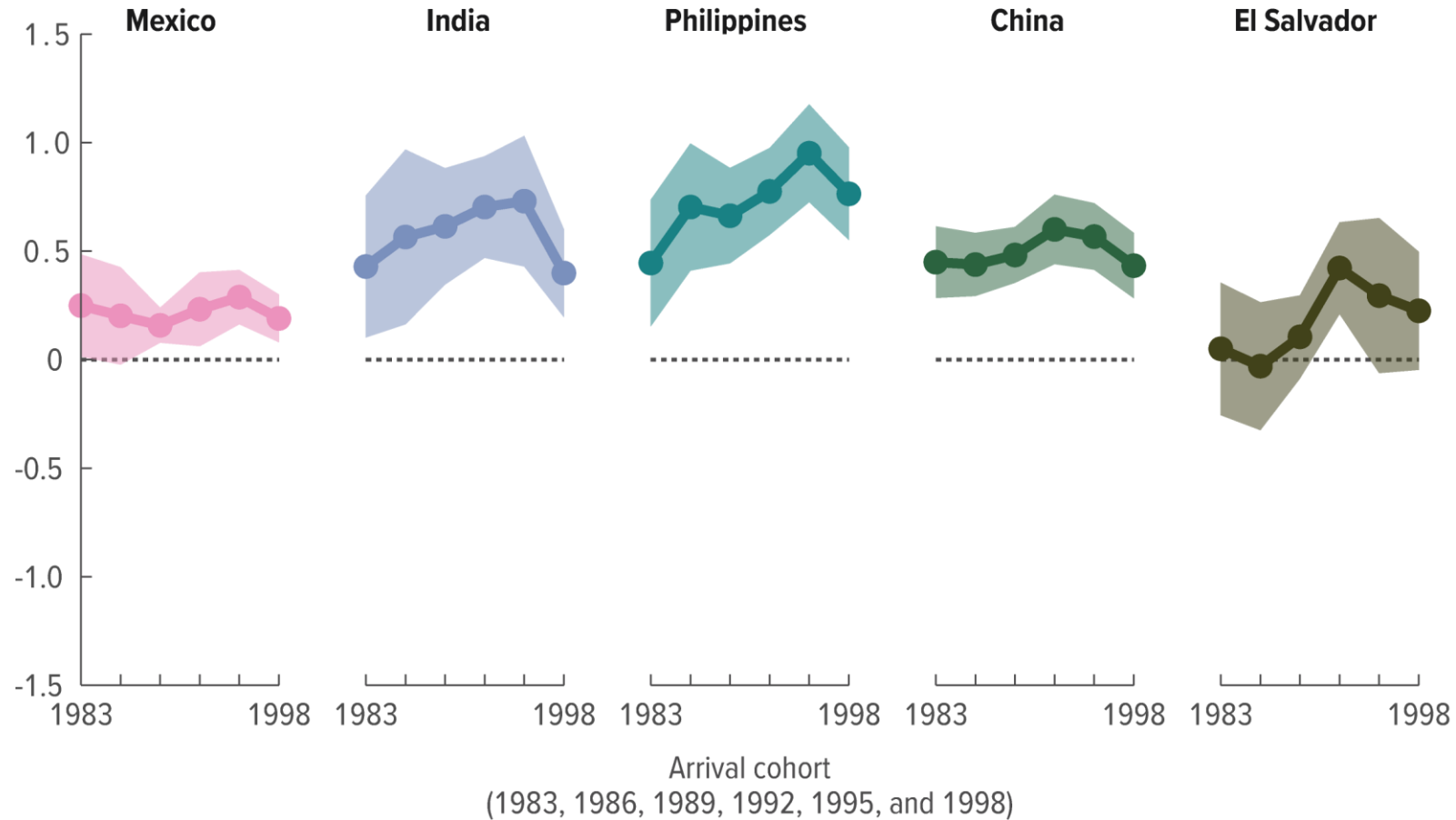


Male permanent migrants from India, the Philippines, and China have significant positive earnings growth after arrival.

Male immigrants from Mexico and El Salvador have lower earnings growth.

# Earnings Growth for Permanent Migrants, by Arrival Cohort and Country, Women

Relative log earnings



As with men, female permanent migrants from India, the Philippines, and China have significant positive earnings growth after arrival.

Female immigrants from Mexico and El Salvador have lower earnings growth.

# Conclusions

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## Emigration

About 20 percent of foreign-born people with an SSN who arrived between 1978 and 1987 emigrated within 10 years.

- That share is about 30 percent for cohorts arriving between 2005 and 2010.

Women are less likely to emigrate than men.

# Conclusions

## Earnings Assimilation

Permanent migrants reach parity with native-born workers earlier for males (8 years) than for females (19 years).

- We define parity as when the log earnings differential between foreign- and native-born workers equals zero.

Among men, earnings assimilation has been faster for arrival cohorts in the late 1990s and early 2000s than for those in the 1980s and early 1990s.

Among women, earnings assimilation is about the same across arrival cohorts examined here.

Compared with native-born workers, emigrants of both sexes have lower earnings before leaving than permanent migrants.

Earnings assimilation varies markedly by country of origin.

- Earnings differential upon arrival has shrunk for migrants from India.