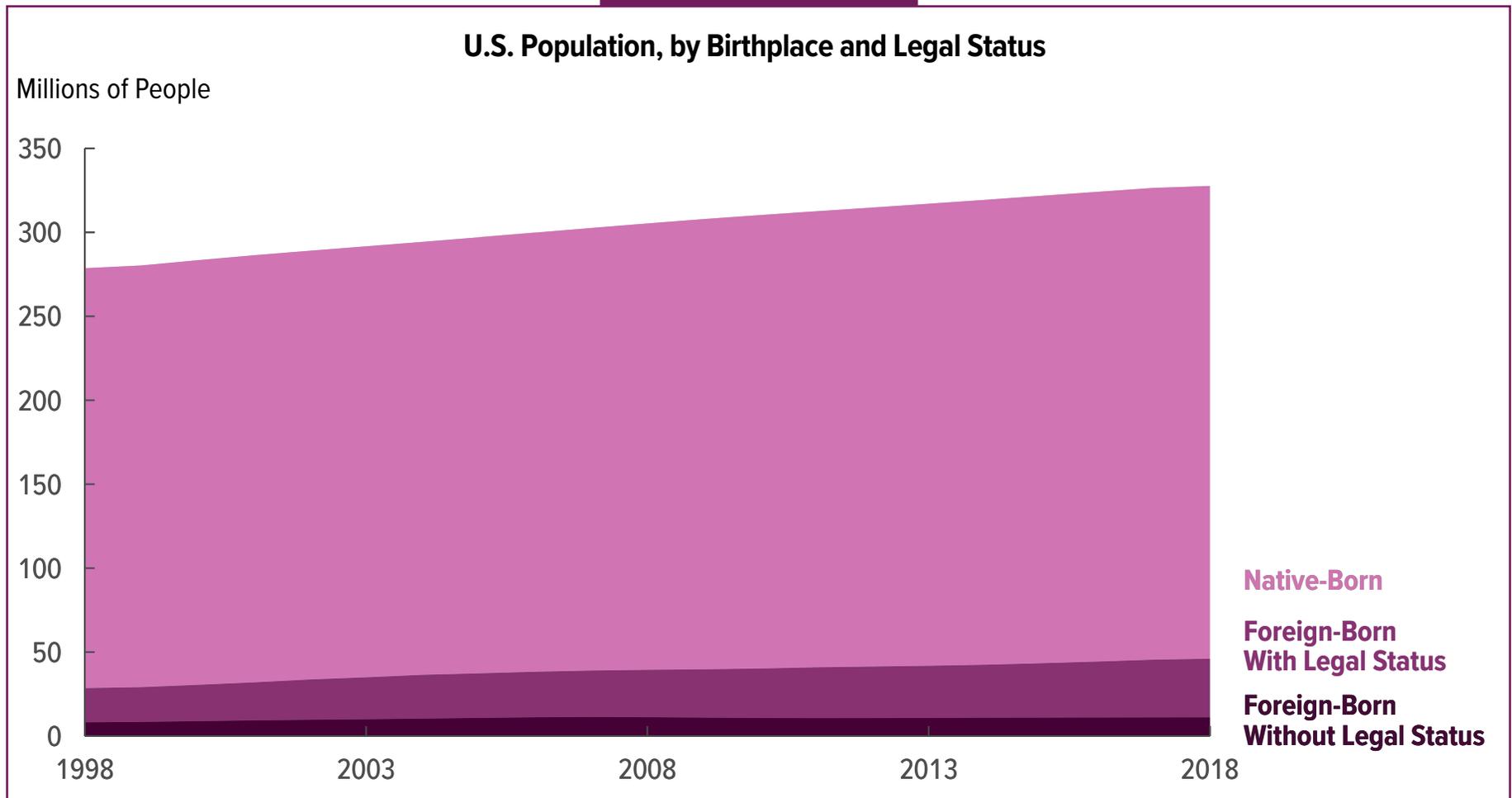


CBO

The Employment of Foreign-Born People



JUNE 2020

At a Glance

In 2018, 46 million foreign-born people lived in the United States, accounting for 14 percent of the total population, and three-quarters of them were here legally, according to estimates by the Congressional Budget Office. The population with legal status increased steadily from 20 million in 1998 to 35 million in 2018. The increase in the population without legal status was smaller; that number grew from 8 million in 1998 to a high of more than 11 million in 2007 and has changed little since then.

In this report, CBO examines the employment and earnings of men and women by their legal immigration status, level of education, and birthplace.

- **Employment by Legal Status.** The number of foreign-born people ages 25 to 54 who were employed grew between 1998 and 2018, whereas the number of native-born people of those ages who were employed shrank slightly. (That reduction was partly attributable to a decline in the native-born population in that age range.) Employment rates were very similar for foreign-born people with and without legal status and were comparable to employment rates for native-born men; 89 percent of foreign-born men and 84 percent of native-born men were employed in 2018. Among women, employment rates were lowest for those without legal status and highest for those who were native born.
- **Earnings by Legal Status.** Workers without legal status earned substantially less than other people. Foreign-born workers with legal status had earnings similar to those of their native-born counterparts—on average, about \$70,000 a year for men and \$48,000 a year for women in 2018.
- **Employment and Earnings by Level of Education.** People ages 25 to 54 without legal status were less likely to have a college degree and especially less likely to have a high school diploma than other people in that age range. The employment rate for people without legal status, which averaged 73 percent from 1998 to 2018, was largely unaffected by their level of education and was similar to the employment rate for high school graduates in other populations. Workers without legal status earned less than others with comparable education.
- **Employment and Earnings by Birthplace.** The likelihood of employment among men did not vary much by birthplace. Women from Mexico were the least likely to be employed. Average earnings were highest for workers from India, China, and the Philippines and almost always lowest for workers from Mexico.



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Notes and Definitions

All years referred to in this report are calendar years. Dollar values are expressed in 2018 dollars. To remove the effects of inflation, the Congressional Budget Office adjusted dollar values with the personal consumption expenditures price index from the Bureau of Economic Analysis. Numbers in the text and exhibits may not sum to totals because of rounding.

In this report, CBO calculated average earnings from earnings that were greater than zero; it did not include zero or negative earnings. At the time of publication, most of the data sources used in this report had data available through 2018, but data for earnings were available only through 2017. CBO analyzed data from the Current Population Survey Annual Social and Economic Supplement (CPS ASEC), which is sponsored jointly by the Bureau of Labor Statistics and the Census Bureau. The CPS ASEC covers the civilian noninstitutionalized population, as well as members of the armed forces living either in a civilian housing unit on a military base or in a household not on a military base.

For this report, CBO identifies *native-born people* as those born in the United States, in one of its territories, or abroad to at least one parent who was a citizen of the United States. CBO describes *foreign-born people* living in the United States according to whether they are estimated to be with or without legal immigration status. For information on the estimation procedure, see the appendix on page 22.

Foreign-born people with legal immigration status refers to naturalized citizens who are not otherwise identified as native-born people, lawful permanent residents (who are also known as green-card holders), refugees, people who were granted asylum, and people legally residing in the country for a specific period and purpose (along with their accompanying spouse and dependent children)—such as students, high-tech guest workers, intracompany transfers, and researchers at nonprofit or government facilities. Naturalized citizens, lawful permanent residents, refugees, people who were granted asylum, and many other people residing legally but temporarily in the country are authorized to work. Generally, they may apply for a Social Security number and must pay applicable federal taxes.

Foreign-born people without legal immigration status refers to people who entered the United States illegally and those who entered legally in a temporary status and then remained after that legal status expired; in general, they are not authorized to work in the United States. However, foreign-born people without legal immigration status include beneficiaries under Temporary Protected Status, beneficiaries of policies (such as Deferred Action for Childhood Arrivals) under which the executive branch does not seek their immediate deportation, and people who are temporarily allowed into the country while awaiting deportation proceedings in immigration courts. Many of those people are authorized to work in the United States, in which case they may apply for a Social Security number and must pay applicable federal taxes.



The Employment of Foreign-Born People

Introduction

In 2018, 46 million people living in the United States had been born in other countries, accounting for 14 percent of the population. Three-quarters of those people resided in the United States legally, according to estimates by the Congressional Budget Office, and their numbers had increased steadily from 20 million in 1998 to 35 million in 2018. An estimated one-quarter were here illegally. Their numbers had increased from 8 million in 1998 to more than 11 million by 2007 but changed little thereafter.

In this report, CBO examines the employment and earnings of foreign-born men and women from 1998 to 2017 or 2018 by their legal immigration status, as well as by level of education and birthplace.¹ The report focuses on people ages 25 to 54, who are typically finished with school but not yet retired. Over the past two decades, a larger share of the foreign-born population than the native-born population has been in that age range.

1. This report presents estimates based on historical data from 1998 through 2018. That period predates the recent and rapidly evolving public health emergency caused by the 2020 coronavirus pandemic.

Number, Age, and State of Residence of Foreign-Born People Compared With Those of Native-Born People

The share of people living in the United States who were born abroad grew from 10 percent in 1998 to 14 percent in 2018, and most of them were here legally. The growth of the foreign-born population was driven by a fairly steady increase in the number of people with legal status. The number of people without legal status grew less rapidly through 2007 and, after a small decline during the 2007–2009 recession, remained relatively stable.

A larger share of foreign-born people than native-born people were between ages 25 and 54, an age range in which most people work. Foreign-born people without legal status were even more likely to fall in that age range than those with legal status. Moreover, between 1998 and 2018, the number of foreign-born people in that age group grew, while the number of native-born people in that age group shrank slightly. From 1998 to 2018, the average share of people older than age 54 was comparable for native-born people, at 24 percent, and foreign-born people with legal status, at 29 percent, but only 5 percent of foreign-born people without legal status were in that age group.

Foreign-born and native-born people tended to live in different places. For example, in 2018, foreign-born people lived in especially high concentrations in states along the southern border with many large metropolitan areas, such as California and Texas, and in other states with particularly large metropolitan areas, such as Illinois (Chicago) and New Jersey (near New York City). Newly arrived people may have lived in those areas because it was easier to find work there, perhaps because more jobs were available or they had more robust social networks there.

Legal Status of Foreign-Born People Ages 25 to 54 and Its Relation to Employment and Earnings

Most foreign-born people ages 25 to 54 were in the United States legally. Over the past two decades, within that age group, the share of foreign-born people without legal status has ranged from a high of 32 percent in the late 2000s to a low of 29 percent in 2017 and 2018. The decrease in that share since 2007 was primarily the result of growth in the number of foreign-born people with legal status; the number of people without legal status was relatively steady, hovering at about 8 million people.

Foreign-born men ages 25 to 54 were equally likely to be employed regardless of legal status and were slightly more likely to be employed than native-born men; employment rates were 89 percent for foreign-born men and 84 percent for native-born men in 2018. For foreign-born women ages 25 to 54, however, employment rates did reflect legal status. Women without legal status were less likely to be employed than women with legal status, who were less likely to be employed than native-born women.

Foreign-born workers with legal status ages 25 to 54 had earnings similar to the earnings of native-born workers in that age range—about \$70,000 a year for men and \$48,000 a year for women in 2018. But foreign-born workers without legal status earned substantially less than native-born workers: 48 percent less, on average, for men and 42 percent less, on average, for women between 1998 and 2012. Since 2012, however, for reasons that are not well understood, the gap for men declined by several percentage points.

Native-born people were most likely to be in occupations with relatively high average earnings, and foreign-born people with legal status were more likely to be in higher-earning occupations than people without legal status. For example, in 2018, native-born workers (and foreign-born workers with legal status) were most likely to be employed in managerial and professional specialty occupations (such as doctor, engineer, and lawyer), and foreign-born people without legal status were most likely to be in service occupations with lower average wages (such as cook and barber).

Level of Education of Foreign-Born People Ages 25 to 54 and Its Relation to Employment and Earnings

In 2018, about 40 percent of people ages 25 to 54 who were native born or foreign born with legal status had at least a college degree. People without legal status were less likely to have a college degree and especially less likely to have a high school diploma. In 2018, 42 percent of people without legal status lacked a high school diploma, compared with 15 percent of foreign-born people with legal status and 6 percent of native-born people.

Among people without a high school diploma, those who were foreign born were more likely to be employed than those who were native born. Among people with at least a high school diploma, however, the situation was reversed—native-born people were almost always more likely to be employed. Although the probability of being employed is usually greater for people with higher levels of education, that was not true for foreign-born people without legal status. Their employment rate averaged 73 percent from 1998 to 2018, roughly matching that for people with a high school diploma in other populations. Foreign-born people without legal status were the most likely to be employed among people without a high school diploma, and they were the least likely to be employed among people with at least a college degree. Although many foreign-born people without legal status—especially men, who make up the majority of that group—came to the United States expressly to work, it may be easier for those without a high school diploma to access employment opportunities that use their skills.

At each level of education, from 1998 to 2017, foreign-born people without legal status had lower earnings than both foreign-born people with legal status and native-born people. Those differences were more pronounced at higher levels of education. In recent years, however, the differences narrowed considerably. By 2017, people who did not have a high school diploma had similar average earnings regardless of birthplace or legal status. Among people with a high school diploma but not a college degree, native-born workers had the highest average earnings. Among people with at least a college degree, foreign-born workers with legal status had the highest average earnings.

Birthplace of Foreign-Born People Ages 25 to 54 and Its Relation to Employment and Earnings

For this analysis, CBO considered the employment and earnings of foreign-born people from five geographic areas: Mexico; Central America; India, China, and the Philippines combined; the rest of Asia; and the rest of the world.

Mexico was the birthplace of the largest number of foreign-born people ages 25 to 54 in the United States, followed by India, China, and the Philippines. In 2018, 43 percent of people from Mexico lacked legal status, compared with 13 percent of people from India, China, and the Philippines combined.

Despite those differences in legal status, employment-to-population ratios for men from Mexico (that is, the percentage of them who were employed) stayed within 6 percentage points of those for men from India, China, and

the Philippines as a group from 1998 to 2018. Employment-to-population ratios almost always remained within that same range of variation for men from Central America, the rest of Asia as a group, and the rest of the world as a group.² Among foreign-born women, however, employment-to-population ratios varied substantially by birthplace; the range spanned 21 percentage points, on average, from 1998 to 2018.

Moreover, since 2004, employment-to-population ratios for foreign-born men by birthplace have all been higher than those for native-born men. The greatest difference was in 2012, when the ratio for men from India, China, and the Philippines exceeded the ratio for native-born men by 9 percentage points. That discrepancy fell to 5 percentage points in 2018. By contrast, native-born women had the highest employment-to-population ratio. Among foreign-born women, those from India, China, and the Philippines were the most likely to be employed, and those from Mexico were the least likely to be employed.

2. In 2015, the employment-to-population ratios for men from Mexico and men from Asian countries other than India, China, and the Philippines differed by 6.6 percentage points.

Birthplace was more closely related to average earnings than likelihood of employment. People from India, China, and the Philippines—the countries that, after Mexico, were the birthplace of the most foreign-born people in the United States—had higher average earnings than native-born people and other foreign-born people. In 2017, the average earnings of people from India, China, and the Philippines were about \$98,000 for men and about \$63,000 for women. People from those countries had higher average earnings, in part, because they were more likely to reside in the United States legally and to have a college degree.

Workers from Mexico and Central America had the lowest average earnings, at about \$43,000 for men and \$28,000 for women in 2017. The average earnings of native-born workers were in between, at about \$70,000 for men and \$49,000 for women in 2017.

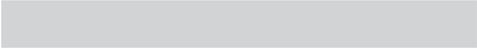
CBO's Estimates of Legal Status

Identifying whether a foreign-born person has legal status to reside in the United States is challenging because data that directly identify status are not generally available. For this report, CBO used data from the Current Population Survey

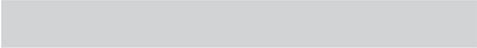
Annual Social and Economic Supplement (CPS ASEC) to examine the employment and earnings of foreign-born people by their estimated legal status. For that estimation, CBO assigned probable legal status to foreign-born people who met certain criteria.³ Some criteria were direct, such as being a naturalized citizen. Others were indirect, such as those based on family relationships, employment, or receipt of government benefits. CBO used administrative data from the Department of Homeland Security's *Yearbook of Immigration Statistics*, as well as data from the Census Bureau's decennial census and American Community Survey, to finalize its estimates of legal status.⁴ Like all estimation procedures, CBO's is subject to error. (See the appendix on page 22 for detailed information about the procedure.)

3. That step is based in part on the methodology in George J. Borjas, "The Labor Supply of Undocumented Immigrants," *Labour Economics*, vol. 46 (June 2017), pp. 1–13, <https://doi.org/10.1016/j.labeco.2017.02.004>.

4. That step is based in part on the methodology in Robert Warren and Jeffrey S. Passel, "A Count of the Uncountable: Estimates of Undocumented Aliens Counted in the 1980 United States Census," *Demography*, vol. 24, no. 3 (August 1987), pp. 375–393, <https://link.springer.com/article/10.2307/2061304>.



Number, Age, and State of Residence of Foreign-Born and Native-Born People

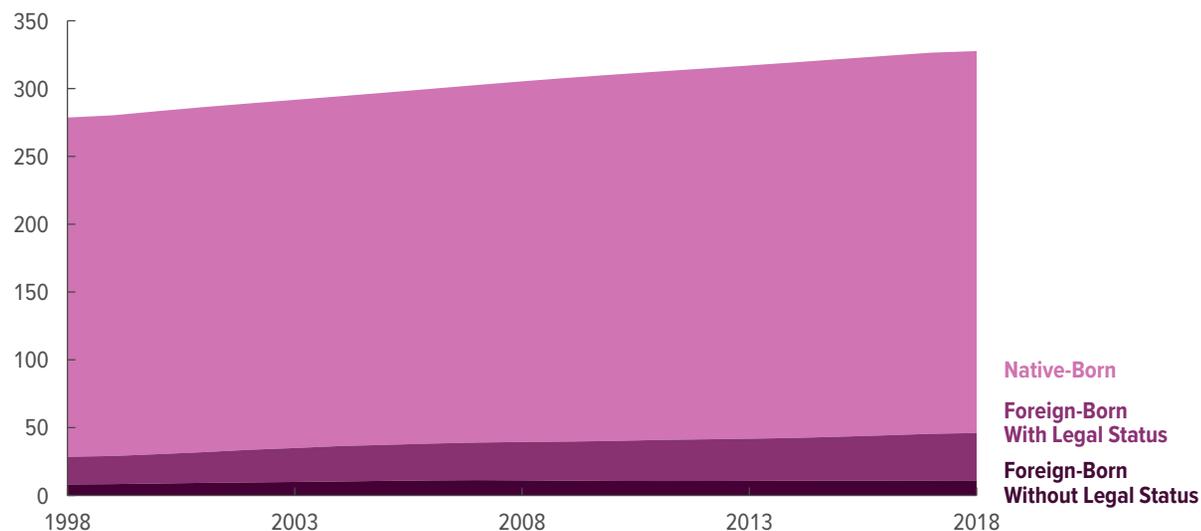


Between 1998 and 2018, the foreign-born population grew much faster than the native-born population. The foreign-born population also differed from the native-born population in age and in place of residence. A greater share of foreign-born people were between ages 25 and 54, and they were more likely to live in metropolitan areas.

Exhibit 1.

U.S. Population, by Birthplace and Legal Status, 1998 to 2018

Millions of People



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

The foreign-born population of the United States was 46 million in 2018, representing 1 out of every 7 people. Twenty years earlier, in 1998, 1 out of every 10 people had been born abroad. Over the past two decades, the foreign-born population increased by 61 percent, outpacing the 13 percent increase in the native-born population.

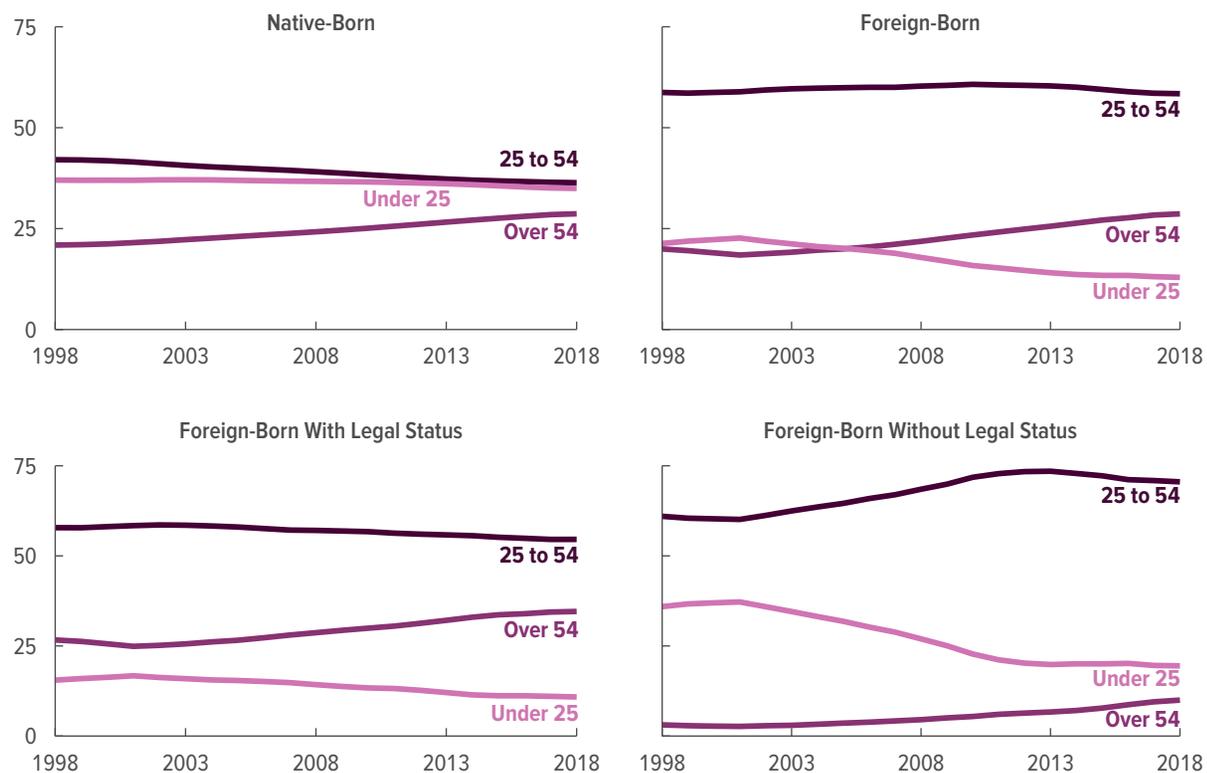
A key component of that growth was the increase in the number of foreign-born people with legal status; by CBO’s estimate, that number grew from 20 million, or 72 percent of foreign-born people, in 1998 to 35 million, or 76 percent of foreign-born people, in 2018. At least 90 percent of foreign-born people with legal status were naturalized citizens or lawful permanent residents, according to data from the Department of Homeland Security; the rest had temporary legal status usually associated with study or work. The numbers of foreign-born people both with and without legal status grew between 1998 and 2007, according to CBO’s estimates, but most of the growth thereafter was among people with legal status.

The number of foreign-born people without legal status remained roughly unchanged after a small decline during the 2007–2009 recession. The number from Mexico decreased steadily over the decade from 2009 to 2018, but that decline was partly countered by an increase in the number from other areas, such as Asia. People without legal status either entered the country illegally or stayed in the country unlawfully after their temporary legal status expired. ♦

Exhibit 2.

Age Distribution of the U.S. Population, by Birthplace and Legal Status, 1998 to 2018

Percent



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

A larger share of the foreign-born than the native-born population was between 25 and 54 years old, when people are typically finished with schooling but not yet retired. That difference occurred largely because foreign-born people commonly come to the United States to work and so are less likely to be children or near retirement age.

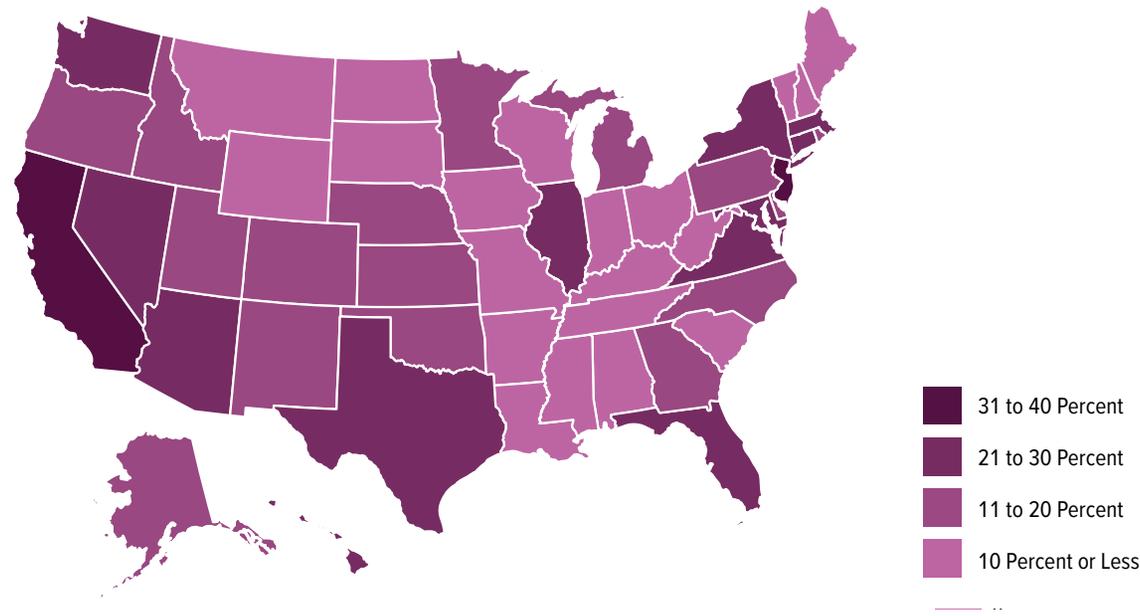
From 1998 to 2018, the share of the population older than age 54 increased by 9 percentage points for foreign-born people and by 8 percentage points for native-born people. That increase reflected the aging of native-born baby boomers (people born between 1946 and 1964) and of foreign-born people who came to the United States in earlier years. The increase among people of that age without legal status was slightly smaller, at 7 percentage points, CBO estimates.

In 2018, about 10 percent of people without legal status were older than 54; less than 1 percent were older than 65. Many have families in their country of origin, and most are ineligible for Social Security and many other benefits. Accordingly, they may be likely to return to their country of origin after reaching retirement age.

The share of foreign-born people under age 25 decreased over time, in part reflecting declines in fertility. For example, fertility dropped sharply in recent years in Mexico and India, two countries that were major sources of foreign-born U.S. residents. Among people without legal status, the decline also reflected a falling share of migrants from Mexico, which has a relatively high proportion of people under age 25. ♦

Exhibit 3.

Foreign-Born People Ages 25 to 54, by Percentage of State Population, 2018

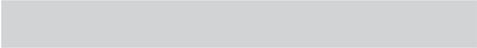


Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

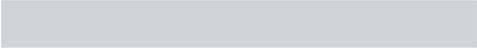
In 2018, foreign-born people made up 21 percent of the U.S. population ages 25 to 54, but that share varied by state. It was higher, for example, in California and New Jersey and lower in Montana and West Virginia, in part because foreign-born people are more likely to live in metropolitan areas. In 2018, among people ages 25 to 54, about 96 percent of foreign-born people and about 86 percent of native-born people lived in metropolitan areas.

Foreign-born people ages 25 to 54 without legal status are more likely to live in certain states. The states with the highest estimated shares of that total population were California (19 percent), Texas (18 percent), and Florida (7 percent). (The national average was 3 percent.) Those numbers, in part, reflect geography and job opportunities. California and Texas are on the southern border of the country, and sizable foreign-born communities may foster strong social networks that make it easier for foreign-born people to find work.

The states with the highest estimated shares of the population of foreign-born people ages 25 to 54 with legal status were California (24 percent), New York (10 percent), and Florida (9 percent). The greater Los Angeles and New Jersey–New York metropolitan areas had the largest shares of the total population of naturalized citizens and lawful permanent residents; nationwide, naturalized citizens and lawful permanent residents made up at least 90 percent of foreign-born people with legal status. California and New York had the largest shares of the total population with temporary legal status that allowed them to work. ♦



Employment and Earnings of Foreign-Born People, by Legal Status



In 2018, 71 percent of foreign-born people ages 25 to 54 were legal residents of the United States, and 29 percent were not, CBO estimates. From 1998 to 2018, foreign-born men in that age group, with and without legal status, generally had higher employment-to-population ratios than similarly aged native-born men. Moreover, employment-to-population ratios did not differ substantially for foreign-born men by legal status. By contrast, foreign-born women in that age

group were less likely to be employed than native-born women, and foreign-born women without legal status were less likely to be employed than those with legal status.

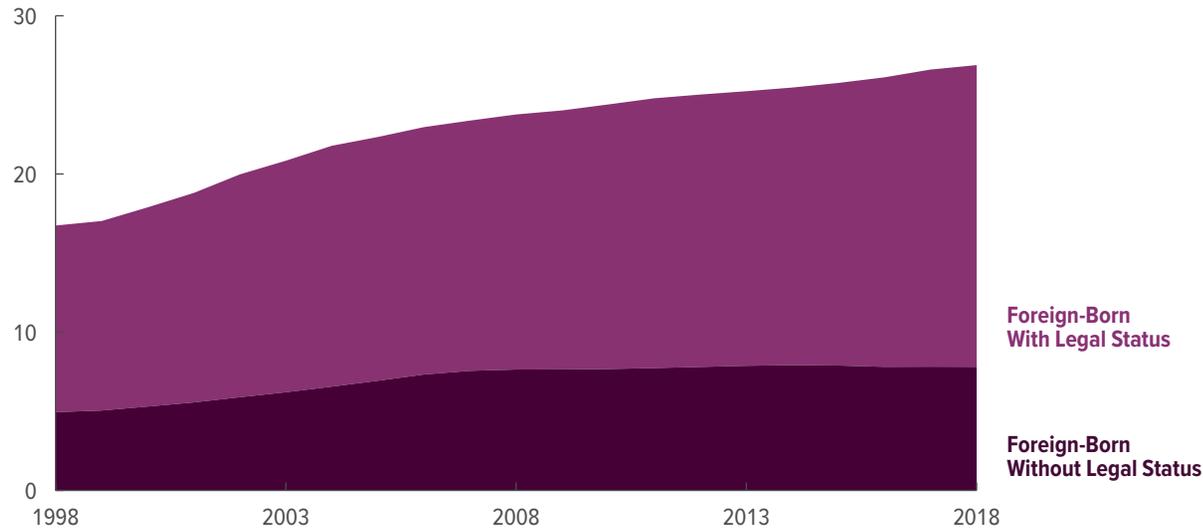
Between 1998 and 2018, the number of employed foreign-born people ages 25 to 54 increased substantially, whereas the number of employed native-born people ages 25 to 54 decreased.

The average earnings of foreign-born men and women with legal status were similar to the average earnings of native-born men and women, respectively, from 1998 to 2017. The average earnings of foreign-born workers without legal status were substantially lower.

Exhibit 4.

Foreign-Born People Ages 25 to 54, by Legal Status, 1998 to 2018

Millions of People



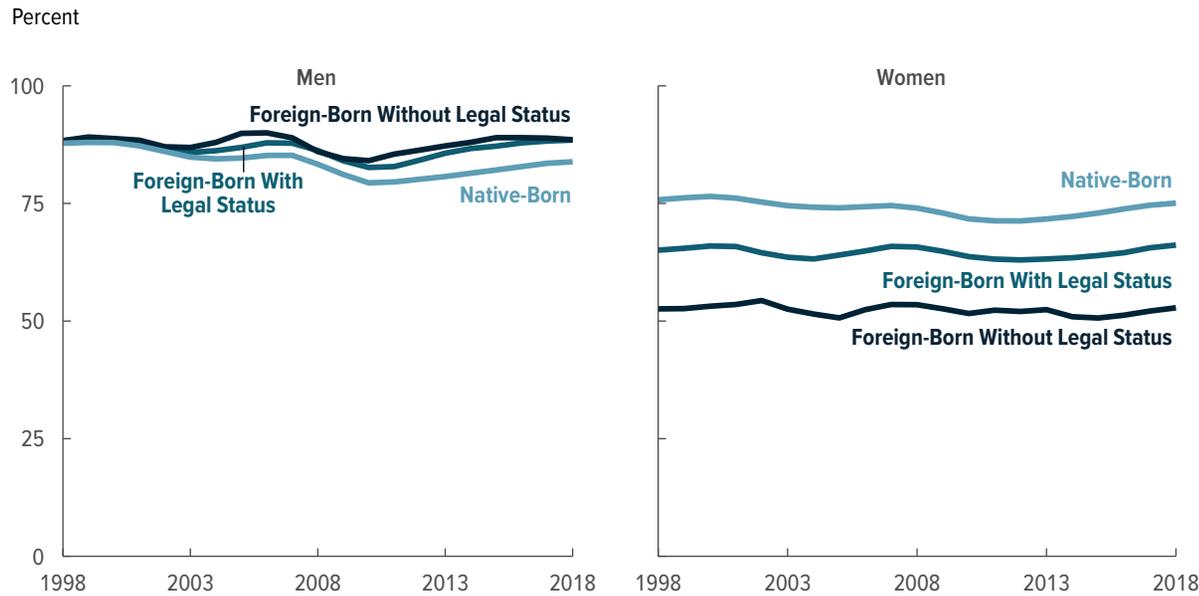
Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

Between 1998 and 2018, most foreign-born people ages 25 to 54 in the United States resided here legally. The total number of foreign-born residents generally grew over that period. The estimated share of foreign-born people with legal status was relatively steady, declining from 70 percent in 1998 to 68 percent in 2006 before increasing to 71 percent in 2017 and 2018.

Growth in the foreign-born population without legal status slowed noticeably during the 2007–2009 recession, which limited opportunities for employment. The average annual change in the number of foreign-born people without legal status was 0.3 percent from 2008 through 2018, throughout the recession and the ensuing recovery. By contrast, the number of foreign-born people with legal status grew during the recession and the recovery at an average annual rate of 1.7 percent. ◆

Exhibit 5.

Employment-to-Population Ratios of People Ages 25 to 54, by Sex, Birthplace, and Legal Status, 1998 to 2018



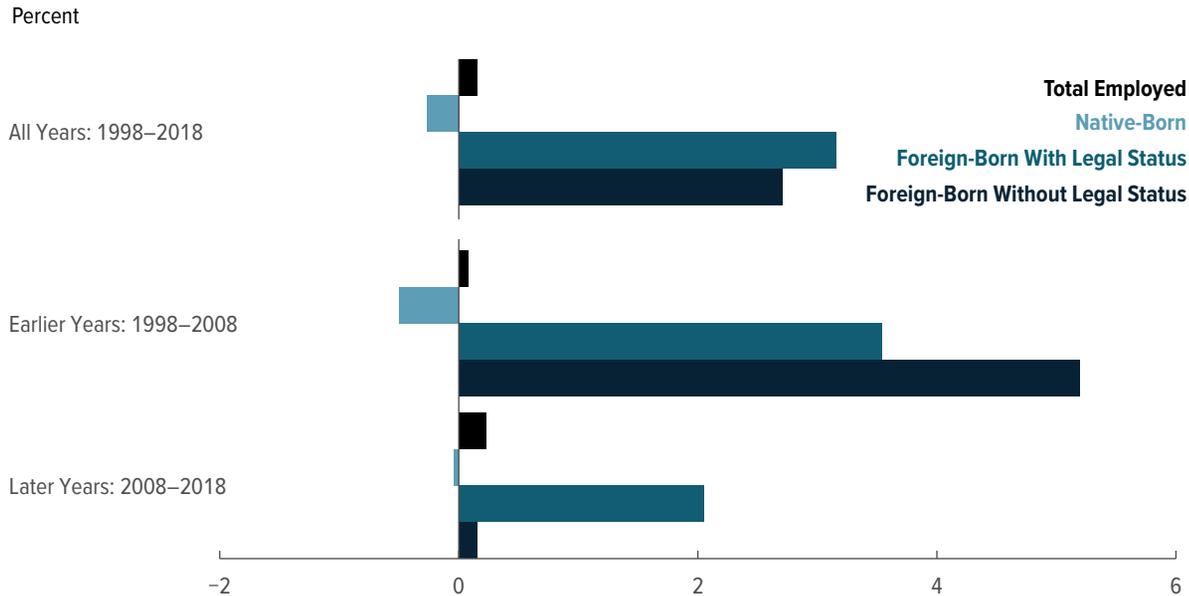
Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

Employment-to-population ratios for people ages 25 to 54 varied by birthplace and estimated legal status. Among men, foreign-born people without legal status generally had the highest employment-to-population ratio, and native-born people generally had the lowest. The opposite was true among women. Foreign-born women without legal status had the lowest employment-to-population ratio, and native-born women were most likely to be employed. Women’s employment rates may be related to the presence of children at home. Women with children at home were less likely to work, and women without legal status were more likely to have children at home. In 2018, for example, the share of women with children at home was about 50 percent among women without legal status and about 20 percent among native-born women.

Employment-to-population ratios for people ages 25 to 54 were higher for men than women, regardless of birthplace or legal status. The difference in employment rates between men and women was largest among foreign-born people without legal status and smallest among native-born people. That difference probably occurred because men without legal status often came to the United States for the purpose of working and were more likely to work than native-born men. Women without legal status were more likely to have children at home and less likely to work than native-born women. ◆

Exhibit 6.

Average Annual Rates of Change in the Number of Employed People Ages 25 to 54, by Birthplace and Legal Status, 1998 to 2018



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

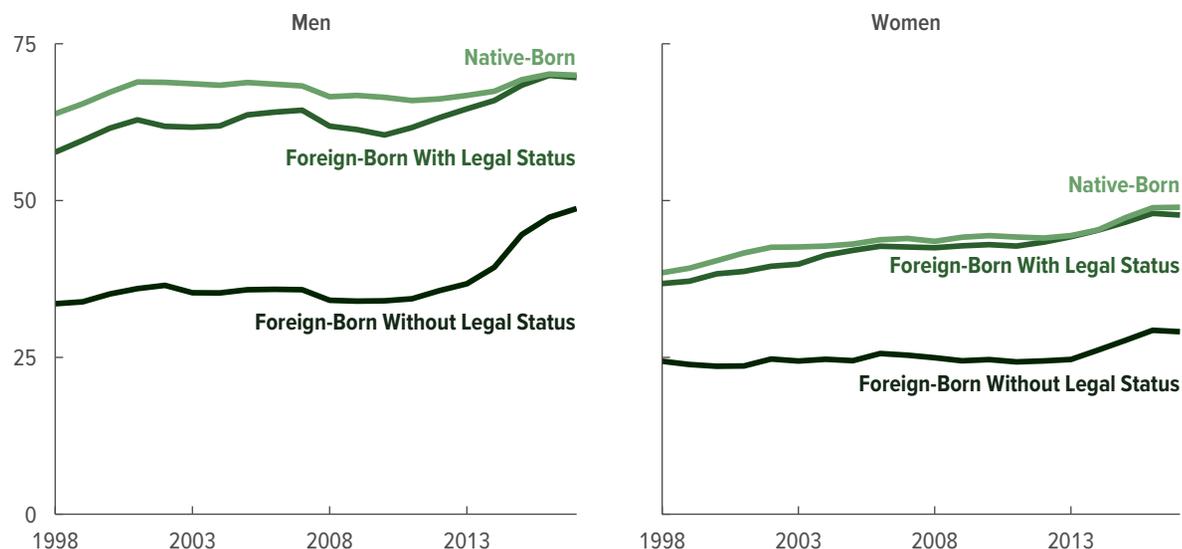
Between 1998 and 2018, the total number of employed people ages 25 to 54 increased by an average of 0.2 percent per year. That growth was driven by increases in employment among foreign-born people in that age range. The number of employed people grew at an average annual rate of 3.2 percent for those with legal status and 2.7 percent for those without legal status, CBO estimates. Although the foreign-born population was much smaller than the native-born population, those growth rates were large enough to compensate for the average annual 0.3 percent decline in the number of native-born people ages 25 to 54 who were employed. That decrease was partly attributable to a decline in the native-born population in that age range.

The timing of the employment growth was different for foreign-born people with legal status than for those without legal status. For foreign-born people with legal status, the average annual rate of change was 3.5 percent from 1998 to 2008 and 2.0 percent from 2008 to 2018. But for people without legal status, it was faster in the earlier years, at 5.2 percent, and slower in the later years, at 0.2 percent; the difference between the two time periods reflected the effect of the recession. Those patterns are similar to the changes in the number of foreign-born people with and without legal status residing in the United States during those time periods. ♦

Exhibit 7.

Average Earnings of Employed People Ages 25 to 54, by Sex, Birthplace, and Legal Status, 1998 to 2017

Thousands of Dollars



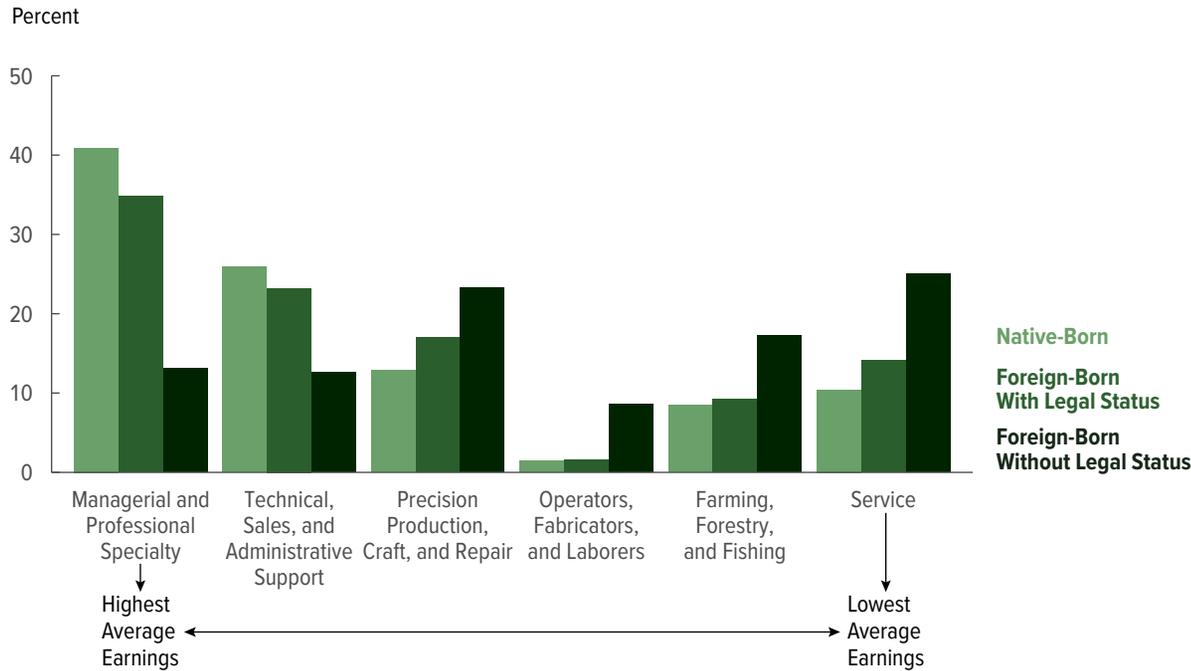
Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

The average earnings of foreign-born men ages 25 to 54 have generally been below those of their native-born counterparts. For foreign-born men with legal status, CBO estimates, the difference was small and became negligible in recent years, between 2014 and 2017, when their earnings increased by 6 percent. For foreign-born men without legal status, the difference averaged 48 percent before 2014 and 35 percent in recent years, when their earnings increased by 24 percent. The lower earnings of men without legal status reflected lower levels of education, as well as employment in lower-earning occupations. Similarly, between 1998 and 2017, the average earnings of foreign-born women without legal status were 42 percent lower than those of native-born women.

The large increase in the earnings of men without legal status between 2014 and 2017 is difficult to explain. Beginning in 2012, the Deferred Action for Childhood Arrivals program (which delays removal proceedings and grants temporary work authorization to certain residents) expanded work opportunities, but it covered fewer than 10 percent of people without legal status and thus could not account for the large increase in earnings. Nor could the increase be explained by the increase in the share of people without legal status who had at least a college degree (people who probably remained after their temporary legal status expired) and therefore probably had higher earnings (see Exhibit 9 and Exhibit 11). Finally, the increase in earnings probably did not result from CBO’s procedure for estimating legal status, which was consistent across years. ♦

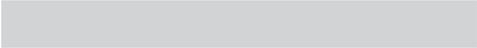
Exhibit 8.

Occupations of Employed People Ages 25 to 54, by Birthplace and Legal Status, 2018

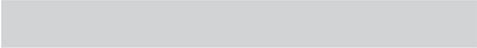


Native-born people ages 25 to 54 were more likely than their foreign-born counterparts to work in occupations with higher average earnings. However, that difference was less pronounced between native-born people and foreign-born people with legal status, CBO estimates. For example, in 2018, about 40 percent of native-born people ages 25 to 54 were employed in managerial and professional specialty occupations (for example, as engineers, doctors, and lawyers) that have higher average earnings. Just 35 percent of foreign-born people with legal status and less than 15 percent of people without legal status were employed in those types of occupations. A slight majority (51 percent) of people without legal status worked in occupations characterized by lower average earnings, such as service occupations (for example, cooks and barbers); farming, forestry, and fishing occupations (for example, farm workers); and as operators, fabricators, and laborers. ◆

Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.



Employment and Earnings of Foreign-Born People, by Level of Education



Among people ages 25 to 54, foreign-born people without legal status were less likely to have a high school diploma or a college degree than foreign-born people with legal status, CBO estimates. The share of foreign-born people with legal status who had a college degree was similar to that of native-born people. Among people ages 25 to 54 who were native born or foreign born with legal status, those with more education were more likely to

be employed. Among foreign-born people without legal status, however, the likelihood of being employed did not vary much with their level of education.

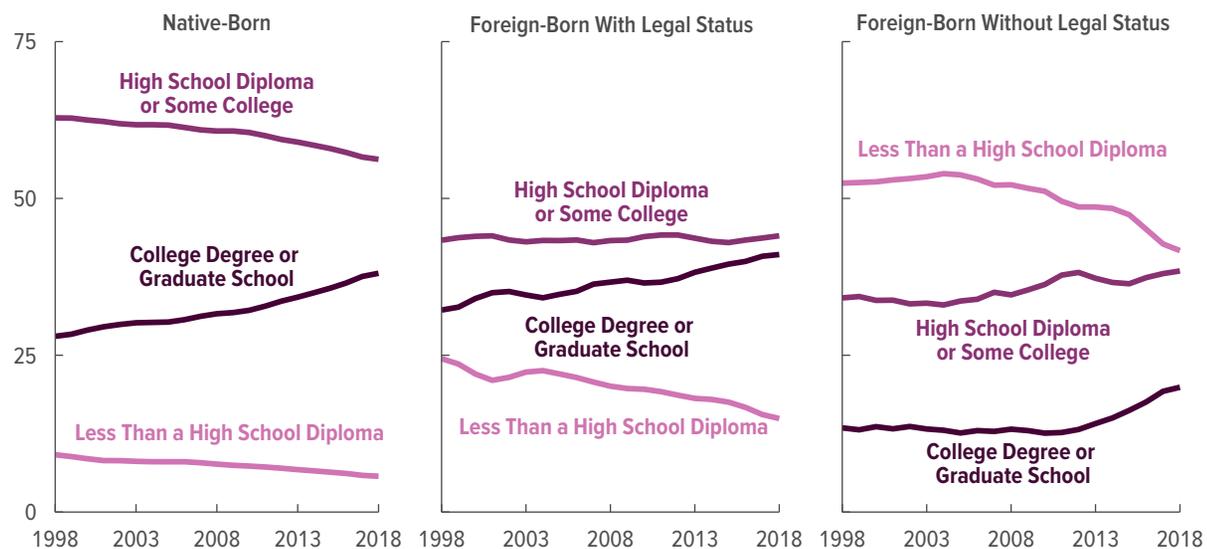
At each level of education, from 1998 to 2017, foreign-born people with legal status had higher average earnings than those without it. Over the past few years, however, the increase in average

earnings of people without legal status brought earnings among those without a college degree more in line with the earnings of similarly educated foreign-born people with legal status. As a whole, the average earnings of foreign-born people with legal status were higher than those of foreign-born people without it, at least in part because those with legal status tended to have more education.

Exhibit 9.

Level of Education of People Ages 25 to 54, by Birthplace and Legal Status, 1998 to 2018

Percent



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

Foreign-born people without legal status have consistently had the lowest levels of education, CBO estimates. From 1998 to 2018, among people ages 25 to 54, the share of people without legal status who lacked a high school diploma averaged 50 percent. Among native-born people that share was 7 percent. From 2015 to 2018, however, the share of people without legal status who lacked a high school diploma declined sharply.

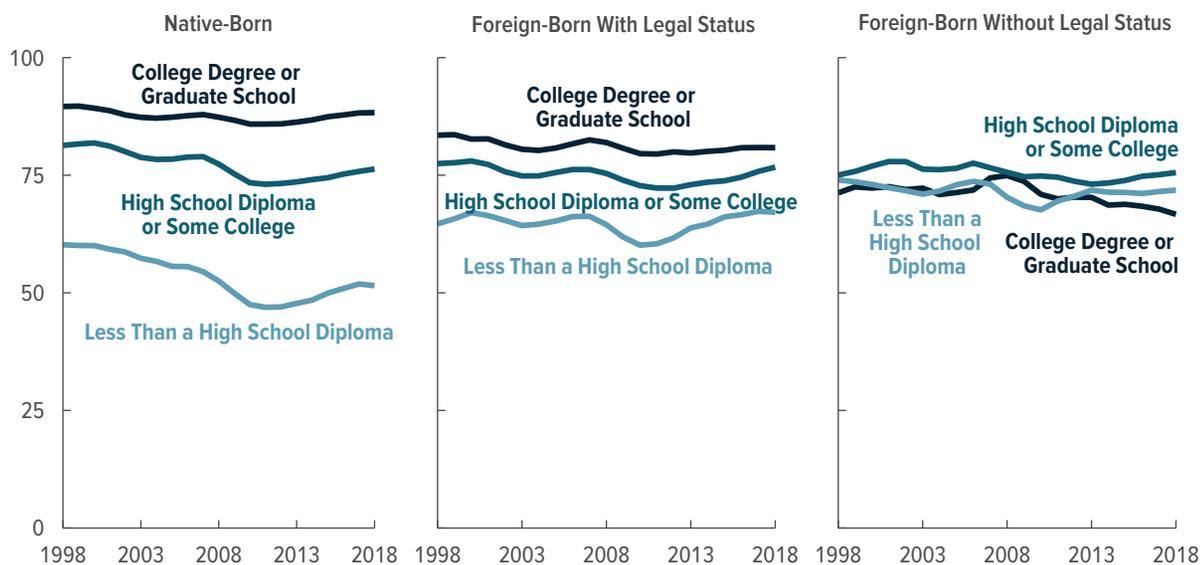
In 2018, the share of foreign-born people without legal status who had at least a college degree was about 20 percent, compared with about 40 percent for foreign-born people with legal status and native-born people. Between 1998 and 2018, the share of people without legal status who had at least a college degree increased by 6 percentage points, compared with about 10 percentage points for those with legal status and native-born people. However, the increase in education among people without legal status occurred only in recent years, unlike the increase among the other two populations.

The education of foreign-born people by year of entry into the country differed somewhat by legal status. Among those without legal status, more-recent entrants generally were more likely to have college and graduate school degrees. That may have occurred because a growing share of those people did not enter illegally but instead remained in the country after their temporary legal status expired. By contrast, educational distribution by year of entry varied less among foreign-born people with legal status. ◆

Exhibit 10.

Employment-to-Population Ratios of People Ages 25 to 54, by Birthplace, Legal Status, and Level of Education, 1998 to 2018

Percent



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

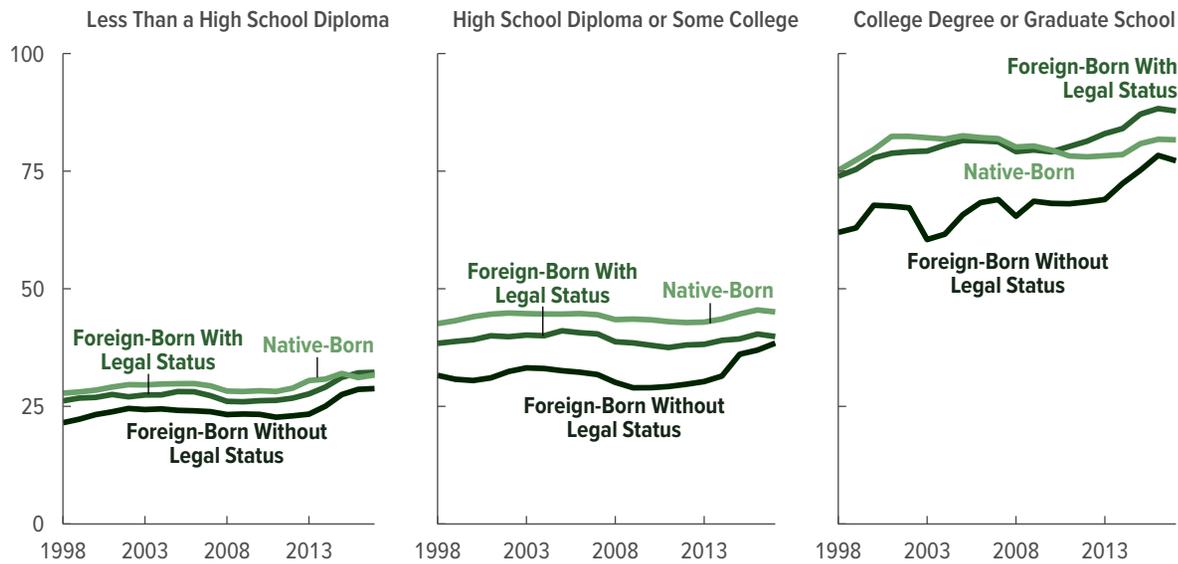
Employment-to-population ratios among foreign-born people with legal status, ages 25 to 54, exhibited a pattern similar to the ratios for native-born people of the same ages, CBO estimates. In every year from 1998 to 2018, the ratios were higher with each successive diploma or degree. The employment-to-population ratio associated with a high school diploma or a college degree was higher, however, for native-born people than for foreign-born people with legal status.

That pattern did not hold among people without legal status. Their employment-to-population ratios varied relatively little by education, averaging 73 percent from 1998 to 2018, a share most comparable to that for people with a high school diploma or some college in the other two populations: 75 percent for foreign-born people with legal status and 77 percent for native-born people. From 1998 to 2018, foreign-born people without legal status who did not have a high school diploma had a higher average employment-to-population ratio (72 percent) than similarly educated foreign-born people with legal status (65 percent) or native-born people (53 percent). People without legal status who did not have a high school diploma may have had more interest in working, more employment opportunities, or both. Greater interest may partly reflect the important role of opportunities to work in motivating people to reside in the country illegally. Their greater interest may also reflect the lower minimum expected income that people without legal status have relative to other populations because they are ineligible for many income security programs available to others. ♦

Exhibit 11.

Average Earnings of Employed People Ages 25 to 54, by Level of Education, Birthplace, and Legal Status, 1998 to 2017

Thousands of Dollars

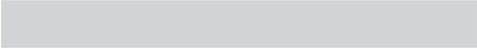


Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

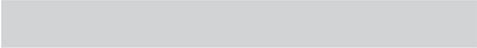
Regardless of birthplace and legal status, average earnings for employed people ages 25 to 54 were higher for those with more education, but at each level of education, foreign-born people without legal status had the lowest average earnings from 1998 through 2017, CBO estimates. The difference between their earnings and those of other populations was least pronounced for people without a high school diploma.

In recent years, however, for people with at least a high school diploma, the differences between the average earnings of foreign-born people without legal status and the average earnings of other populations narrowed. Among people without legal status, particularly those with a high school diploma or some college, the sharp increase in average earnings that occurred toward the end of the period is difficult to explain (see Exhibit 7).

Among people with a college degree or further education, in recent years, foreign-born people with legal status had the highest average earnings. That ranking was because of the earnings of those who were educated beyond college. For people with only a college degree, those who were foreign born with legal status had lower average earnings than those who were native born. Among people educated beyond college, occupational choices partly explain the higher earnings of foreign-born people with legal status. They tended to work in higher-paying occupations—for example, as computer software developers and engineers—than native-born people did. ♦



Employment and Earnings of Foreign-Born People, by Birthplace



Among individual countries, Mexico was the birthplace of the largest number of foreign-born people ages 25 to 54 in the United States, followed by India, China, and the Philippines. For foreign-born men in that age range, regardless of birthplace, employment-to-population ratios were generally higher than the ratio for native-born men. Moreover, the employment-to-population ratios of foreign-born men did not

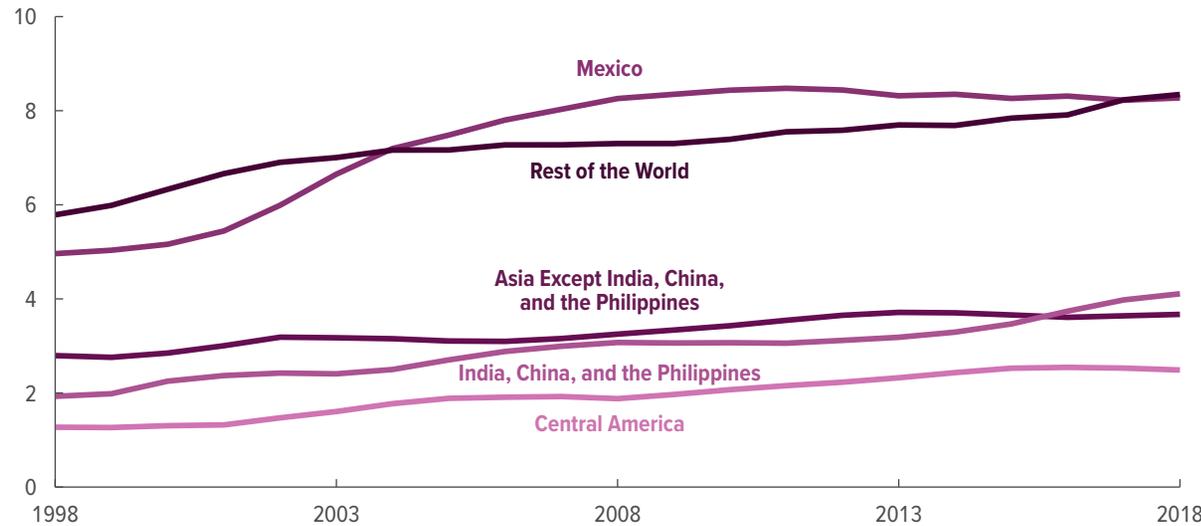
show much variation by birthplace. Among foreign-born women of those ages, however, employment-to-population ratios were lower than the ratio for native-born women and displayed substantial variation. Women from Mexico, for example, were much less likely to work than women from elsewhere.

Men and women from Mexico and Central America had lower average earnings than native-born people and foreign-born people from India, China, and the Philippines; the remainder of Asia; and the rest of the world. Men and women from India, China, and the Philippines had higher average earnings than native-born people and foreign-born people from elsewhere.

Exhibit 12.

Foreign-Born People Ages 25 to 54, by Birthplace, 1998 to 2018

Millions of People



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

Mexico was the birthplace of the largest number of foreign-born people in the United States. In 2018, about 8 million people ages 25 to 54 were from Mexico (31 percent of the total foreign-born, working-age population), reflecting its close proximity to the United States. An additional 2 million people (9 percent of the total foreign-born, working-age population) were from neighboring Central American countries.

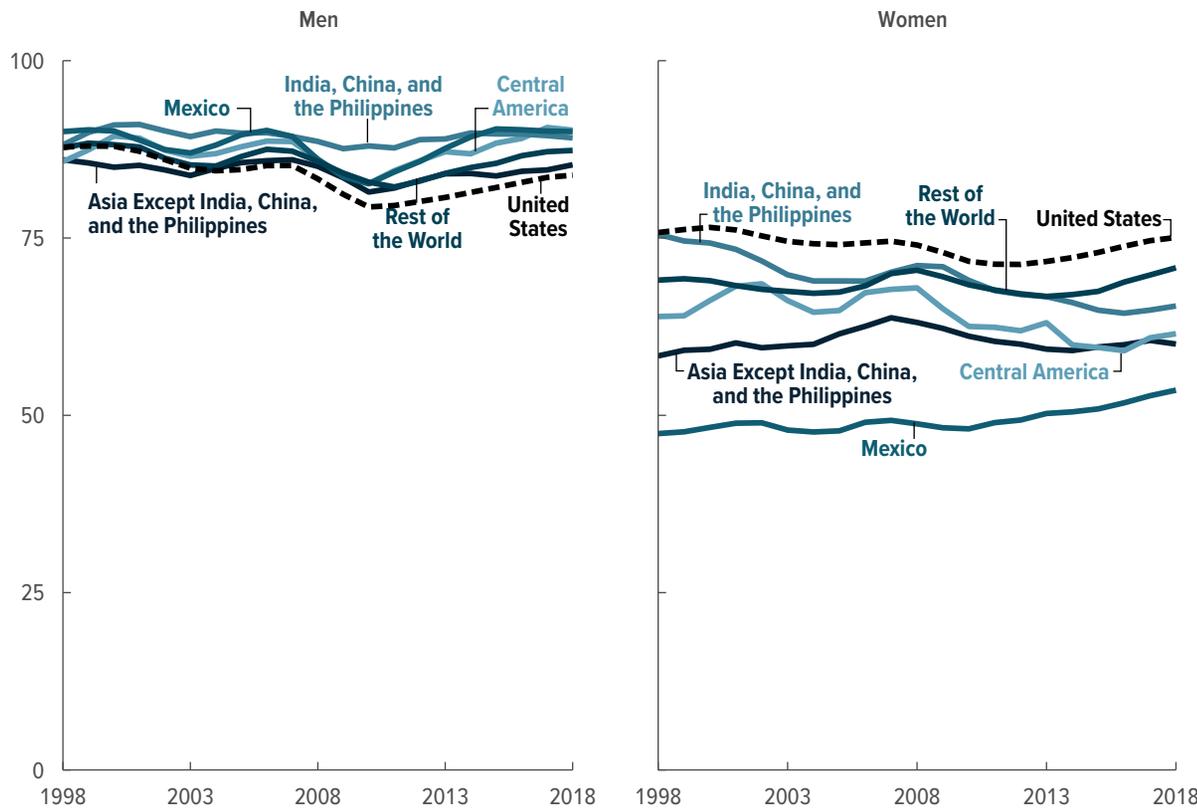
Asia was also a major source of foreign-born people. Many people from Asia have received temporary legal status to work or study in the United States or have joined family members who have temporary or permanent legal status. In 2018, about 8 million people from Asia made up 29 percent of the total foreign-born, working-age population. About 4 million people from India, China, and the Philippines made up 15 percent of the total foreign-born, working-age population in 2018. The more than 100 countries in the rest of the world accounted for about 8 million people in the United States in 2018, or 31 percent of the total foreign-born, working-age population.

Legal status tended to differ by birthplace. In 2018, people from Mexico and Central America made up 40 percent of the foreign-born, working-age population and represented 67 percent of those without legal status, CBO estimates. People from Asia, who made up 29 percent of the foreign-born, working-age population, represented 14 percent of those without legal status. ♦

Exhibit 13.

Employment-to-Population Ratios of People Ages 25 to 54, by Sex and Birthplace, 1998 to 2018

Percent



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.

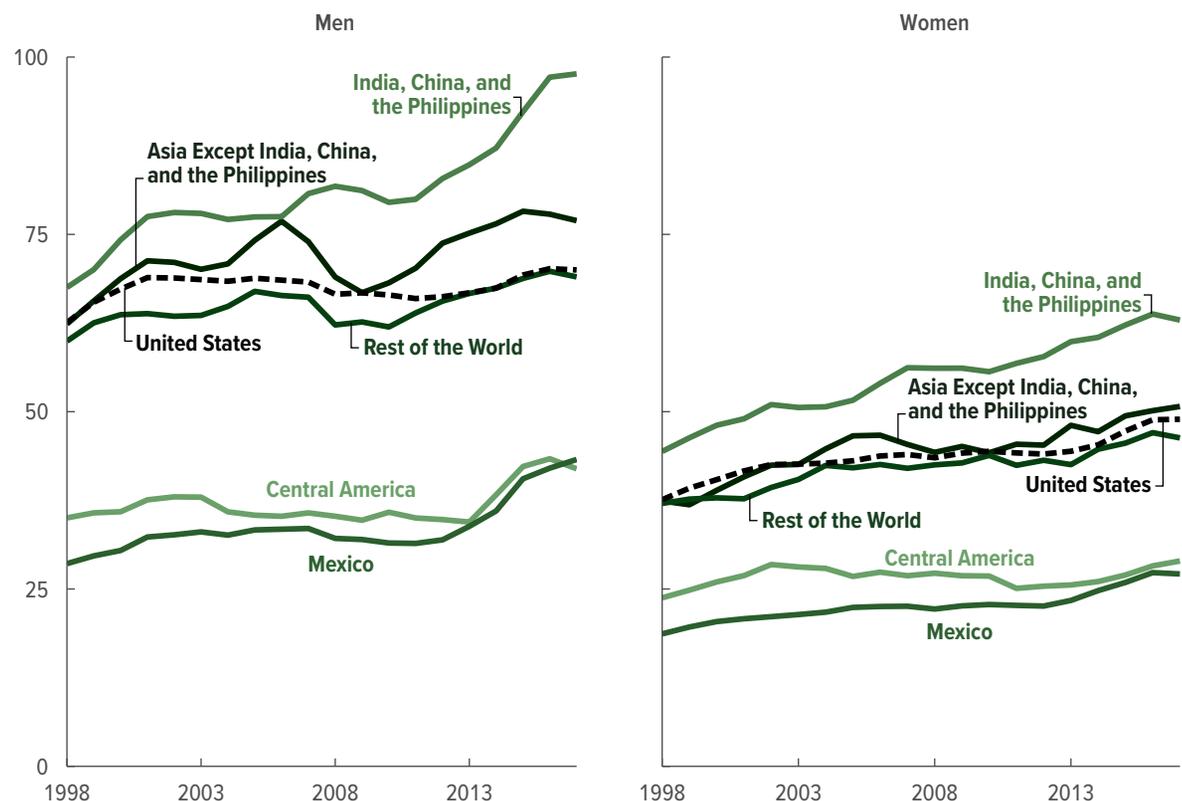
Employment-to-population ratios for people ages 25 to 54 by sex and birthplace tell much the same story as employment-to-population ratios by sex and legal status (see Exhibit 5). First, they were significantly higher for men than for women, regardless of birthplace. Second, foreign-born men generally had a higher employment-to-population ratio than native-born men; among women, the opposite was true.

Employment-to-population ratios by birthplace vary much less for men than for women. The ratios for men stayed within 9 percentage points of each other, but the range for women was much bigger, averaging 25 percentage points over the 1998–2018 period. In particular, women from Mexico were the least likely to be employed, and their employment-to-population ratio in most years was at least 10 percentage points lower than those of women from other places, although that difference has shrunk in recent years. ♦

Exhibit 14.

Average Earnings of Employed People Ages 25 to 54, by Sex and Birthplace, 1998 to 2017

Thousands of Dollars



From 1998 to 2017, among people ages 25 to 54, residents from Mexico and Central America had much lower average earnings than native-born people. In 2017, the average earnings of men from Mexico and Central America were about 60 percent of those of native-born men; likewise, women from Mexico and Central America had much lower average earnings than native-born women. People from Mexico and Central America were more likely to have less education and to work in lower-paid occupations, such as those in construction and agriculture, than native-born people were.

Residents from India, China, and the Philippines had higher average earnings than native-born people. In 2017, the earnings of men from India, China, and the Philippines exceeded those of native-born men by about 40 percent, and the earnings of women from those Asian countries exceeded those of native-born women by about 30 percent. Relative to native-born people, workers from India, China, and the Philippines tended to have more education and were less likely to work in lower-paid occupations. ♦

Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Department of Homeland Security.



Appendix: Estimating the Legal Immigration Status of Foreign-Born People Residing in the United States

The Congressional Budget Office's estimates of legal immigration status were based on individuals' responses to the Current Population Survey Annual Social and Economic Supplement (CPS ASEC).¹ Those estimates incorporated three adjustments. First, CBO ensured that the national population totals implied by the CPS ASEC data matched the Census Bureau's preferred population estimates.² Second, CBO compensated for survey undercounting of foreign-born people. Third, CBO ensured that the estimated numbers of foreign-born people by legal status corresponded to the numbers the agency derived by using demographic methods, administrative data from the Department of Homeland Security, and survey data from the Census Bureau.³

1. See Sarah Flood and others, "IPUMS-CPS: Version 7.0" (Current Population Survey data, accessed December 19, 2019), <https://doi.org/10.18128/D030.V7.0>.
2. See Census Bureau, "Population and Housing Unit Estimates" (accessed December 19, 2019), <https://go.usa.gov/xvbEM>.
3. See Department of Homeland Security, "Yearbook of Immigration Statistics" (accessed December 19, 2019), <https://go.usa.gov/xvQTW>; Census Bureau,

All estimates of immigration status are uncertain. One principal uncertainty underlying the estimates is the accuracy of the survey responses. Another is the accuracy of the criteria used in estimating legal status on the basis of survey responses (although the adjustment based on demographic methods mitigates the effect of that uncertainty). A third is the accuracy of the adjustment for survey undercounting of foreign-born people.

CBO's estimates of the number of foreign-born people without legal status are comparable to the analyses of other researchers. To estimate the number of foreign-born people illegally residing in the United States, most researchers begin with the total foreign-born population and subtract from that an estimate of the number of foreign-born people legally residing in the United States. Differences between estimates reflect the use of different data and different estimation methods.

"Decennial Census of Population and Housing" (accessed December 19, 2019), <https://go.usa.gov/xvQbq>; and Steven Ruggles and others, "IPUMS-USA: Version 10.0" (census and American Community Survey data, accessed December 19, 2019), <https://doi.org/10.18128/D010.V10.0>.

How CBO Used CPS ASEC Responses to Estimate Legal Status

CBO assigned likely legal status to foreign-born CPS ASEC respondents if they met any of 12 different criteria, including information about their country of birth, date of entry into the United States, employment, and receipt of certain types of government services. CBO estimated that foreign-born people who did not meet at least one of the criteria probably did not have legal status.

That procedure was based on the work of Jeffrey S. Passel of the Pew Research Center (with others), as well as the work of George Borjas at Harvard University.⁴ Passel and others generated CPS ASEC files that included an indicator of whether a foreign-born person in the United States probably had legal status. Instructions on how to generate that indicator have not been made

4. See Jeffrey S. Passel and D'Vera Cohn, "Methodology," in Passel and Cohn, *U.S. Unauthorized Immigrant Total Dips to Lowest Level in a Decade* (Pew Research Center, November 2018), <https://tinyurl.com/y84cqdak>; and George J. Borjas, "The Labor Supply of Undocumented Immigrants," *Labour Economics*, vol. 46 (June 2017), pp. 1–13, <https://doi.org/10.1016/j.labeco.2017.02.004>.

available. Borjas's work reverse engineered data from a 2012–2013 CPS ASEC file that included Passel's indicator and then applied certain criteria to estimate the legal status of foreign-born people. Because the procedure applies criteria sequentially, the number of people estimated as likely to have legal status on the basis of any one criterion is influenced by the order of the sequence. CBO estimated that foreign-born people probably had legal status if they met any of the following criteria.

Naturalized Citizens

A person becomes a naturalized U.S. citizen by fulfilling the requirements set forth in the Immigration and Nationality Act. On average, this criterion accounted for 59 percent of CBO's assignments of probable legal status over the 1998–2018 period.⁵

People Who Arrived in the United States Before 1982

People who arrived in the United States before 1982 probably had legal status under the Immigration Reform and Control Act of 1986. On average, this criterion accounted for 9 percent

of CBO's assignments of probable legal status over the 1998–2018 period.

Veterans, Members of the Armed Forces, or Federal, State, or Local Government Workers

In general, only citizens and lawful permanent residents can enlist in the military, and only citizens or U.S. nationals (residents of American Samoa and Swains Island) can work for the federal government. Foreign-born people must have legal status to be legally employed by a state or local government. On average, this criterion accounted for 2 percent of CBO's assignments of probable legal status over the 1998–2018 period.

Cubans Who Arrived in the United States Before 2017

A long-standing U.S. policy that ended in January 2017 allowed Cubans who arrived on U.S. soil to be temporarily allowed into the country after a check of their criminal and immigration history. Currently, under the Cuban Adjustment Act of 1966, any Cuban national can apply for lawful permanent residence after a year in the United States. On average, this criterion accounted for 1 percent of CBO's assignments of probable legal status over the 1998–2018 period.

People Who Received Certain Government Benefits or Were Covered by Certain Government Insurance

Foreign-born people generally must have legal status to receive Social Security, Supplemental Security Income, and Temporary Assistance for Needy Families benefits and to be covered by Medicare and military health insurance. (CBO examined those programs but did not examine participation in other programs for which people

are generally ineligible unless they have legal status, such as the Supplemental Nutrition Assistance Program and the Children's Health Insurance Program.) On average, this criterion accounted for 4 percent of CBO's assignments of probable legal status over the 1998–2018 period.

Heads of Households Living in Public Housing or Receiving Subsidized Rent

Heads of households must be citizens or foreign-born people with legal status to benefit from federal rental assistance. (The CPS ASEC asks about government-provided housing assistance, not about housing assistance provided exclusively by the federal government.) On average, this criterion accounted for less than 1 percent of CBO's assignments of probable legal status over the 1998–2018 period.

Workers in Occupations Requiring Some Form of Licensing, With Certain Exceptions

Foreign-born people generally must have legal status to obtain occupational licenses. In recent years, however, some states have begun to allow people without legal status to obtain occupational licenses in specific circumstances. (California, for example, has the broadest provisions, allowing people without legal status to obtain occupational licenses in any circumstance.) Accordingly, CBO did not use this criterion when CPS ASEC data could be used to identify relevant circumstances. Within the broad range of occupations that require licensing (which includes hairdressers and physicians), foreign-born residents of the United States were most likely to work as registered nurses. On average, possession of occupational licenses accounted for 2 percent of CBO's assignments of probable legal status over the 1998–2018 period.

5. That percentage estimate and the ones reported for each of the criteria reflect the use of the CPS ASEC data to assign probable legal status (and incorporate data adjustments for the preferred population estimates and survey undercounting). The percentages do not reflect the assignments of legal status that CBO made to ensure consistency with its estimates derived using demographic methods. All of CBO's data adjustments are described in more detail in "How CBO Adjusted Its CPS ASEC-Based Estimates" on page 24.

People Who Arrived in the United States at Age 60 or Older

Estimates of the population with and without legal status suggest that older people make up a relatively small share of the total population without legal status. On average, age on arrival accounted for less than 1 percent of CBO's assignments of probable legal status over the 1998–2018 period.

Workers Identified by Certain Occupations, Levels of Education, and Lengths of Stay

Under the H-1B program, foreign-born workers can be temporarily employed in occupations that require highly specialized knowledge and the equivalent of at least a bachelor's degree—occupations in fields such as mathematics, engineering, information technology, and postsecondary teaching. In general, those foreign-born workers can stay in the United States for six years, but CBO's criterion also reflects circumstances under which stays can be extended beyond six years. On average, this criterion accounted for 1 percent of CBO's assignments of probable legal status over the 1998–2018 period.

People Who Were Enrolled in Medicaid, With Certain Exceptions

People without legal status generally cannot enroll in Medicaid. (Because they are eligible for and may have received emergency services under Medicaid, they may mistakenly report that they are enrolled in Medicaid, but CBO cannot correct for such misreporting.) In limited circumstances, states may opt to cover prenatal care, labor and delivery, and postpartum care for people without legal status. Accordingly, CBO did not use this criterion for women who have given birth in the past year. Some states and the District of Columbia use

state-only funds to cover children who are without legal status, so CBO did not use that criterion for children in those locations. On average, enrollment in Medicaid accounted for 7 percent of CBO's assignments of probable legal status over the 1998–2018 period.

Spouses, Children, or Grandchildren of Heads of Households Who Were Native Born or Foreign Born With Legal Status

U.S. citizens and lawful permanent residents can sponsor family members for a green card, and people legally admitted to the country for a specific period and purpose can generally be accompanied by their spouse and dependent children. On average, this criterion accounted for 12 percent of CBO's assignments of probable legal status over the 1998–2018 period.

People Whose Country of Origin Was a Significant Source of Refugees

CBO estimated that people probably had legal status as refugees if, in the year that they arrived, the number of refugees admitted to the United States from their country of origin was at least double the number of nonrefugee arrivals from that country. On average, this criterion accounted for a negligible percent of CBO's assignments of probable legal status over the 1998–2018 period.

CBO estimated that any foreign-born resident who could not be described in one of those 12 ways was unlikely to have legal status.

How CBO Adjusted Its CPS ASEC–Based Estimates

CBO made three adjustments to its CPS ASEC–based estimates. The first ensured that CBO's

estimates of the total foreign-born population were consistent with those of the Census Bureau's preferred population estimates. The second ensured that CBO's estimates accounted for survey undercounting of foreign-born people. The third ensured that CBO's estimates of the foreign-born population by legal status were consistent with those derived by using demographic methods and alternative data that reflect more complete status-based counts.

Adjustments to Match the Census Bureau's Preferred Population Estimates

The CPS ASEC weights for each respondent ensured that the survey-based national population count for a given year matched the Census Bureau's postcensal population estimate for that same year. However, the Census Bureau also produces a series of annual postcensal population estimates going back to the most recent decennial census by calculating population changes from updated data on births, deaths, and migration. Additionally, after each decennial census, the Census Bureau produces intercensal population estimates by adjusting the most recent series of postcensal estimates to smooth the transition between decennial censuses.⁶

The Census Bureau's intercensal estimates, when they become available, are the preferred estimates. In the interim, the preferred estimates are the most recent series of postcensal estimates. The preferred estimates are not reflected in the CPS ASEC weights for previous years.

6. See Census Bureau, "Population and Housing Unit Estimates" (accessed December 19, 2019), <https://go.usa.gov/xvbEM>.

To reflect the preferred population estimates, CBO adjusted the CPS ASEC weights so that the survey-based population counts matched the intercensal estimates for 1998 through 2009. CBO adjusted the CPS ASEC weights for 2010 through 2018 to match the 2018 series of postcensal estimates, because intercensal estimates will not be available for 2010 through 2018 until after the 2020 decennial census.⁷

Adjustments to Address Survey Undercounting of Foreign-Born People

The adjustments to match the preferred population estimates do not appear to fully correct for the finding that people without legal immigration status are significantly more likely to be undercounted by surveys than people with legal status, who in turn are more likely to be undercounted than native-born people.⁸ To investigate survey undercounting, researchers have used data from

7. The intercensal and postcensal estimates are for the total population of the United States, whereas the CPS ASEC covers the civilian noninstitutionalized population, as well as members of the armed forces living either in a civilian housing unit on a military base or in a household not on a military base. Nonetheless, making that adjustment produces a more consistent time series of the population, because the CPS ASEC weights are not updated as more information becomes available. In CBO's assessment, the benefit of that consistent series outweighs the effects of the discrepancy in the populations covered. Moreover, the methodology underlying CBO's final adjustment to the CPS ASEC-based estimates (see "Sources of Uncertainty in CBO's Estimates" on page 26) includes the preferred population estimates, leading to a more consistent approach overall.

8. See Census Bureau, "Coverage Measurement" (accessed December 19, 2019), www.census.gov/coverage_measurement.

both Mexico and the United States (see the appendix table). Some of the work examines births, deaths, and migration to estimate the composition of the population over time with regard to certain characteristics. Some of the work matches people who participated in surveys with people who participated in decennial censuses to see who may have been missed or counted in error. Researchers concluded that undercounting was a substantial problem before 2000 but has improved markedly since.

To compensate for undercounting, CBO modified the population-adjusted CPS ASEC weights for foreign-born people with and without legal status, with separate treatments for people without legal status from Mexico and people without legal status from the rest of the world. People from Mexico accounted for about 60 percent of the population without legal status from the late 1990s through 2014; that share declined to about 50 percent by 2018.

CBO derived the series of undercount rates used for those modifications from point estimates drawn from the literature for a number of years between the late 1990s and 2014, held the undercount rates constant after 2014 because no estimates were available from the literature for recent years, interpolated values in intervening years, and then linearized the series (see the table). The estimated undercount rate for foreign-born people without legal status from Mexico was about 25 percent in 1998, and it declined to 4 percent by 2014. The estimated rate for people without legal status from elsewhere in the world was about 7 percent in 1998, and it declined to 6 percent by

2014. The estimated rate for foreign-born people with legal status was about 2 percent in 1998, and it declined to less than half a percent by 2014.

Adjustments to Ensure Consistency With Estimates Derived by Using Demographic Methods

Researchers typically estimate the legal status of foreign-born people by first identifying those who are likely to have legal status.⁹ People not so identified are likely to be without legal status. However, estimates that rely solely on CPS ASEC responses for the first step will overstate the number of people without legal status (even when adjusted for preferred population estimates and survey undercounting as described above). That overstatement occurs because the survey data do not have enough information to identify all of the foreign-born people with legal status.

To address that shortcoming, CBO used demographic methods to estimate a probability that a person had legal status and, on the basis of that

9. See Jeffrey S. Passel and D'Vera Cohn, "Methodology," in Passel and Cohn, *U.S. Unauthorized Immigrant Total Dips to Lowest Level in a Decade* (Pew Research Center, November 2018), <https://tinyurl.com/y84cqdaq>; George J. Borjas, "The Labor Supply of Undocumented Immigrants," *Labour Economics*, vol. 46 (June 2017), pp. 1–13, <https://doi.org/10.1016/j.labeco.2017.02.004>; Robert Warren and John Robert Warren, "Unauthorized Immigration to the United States: Annual Estimates and Components of Change, by State, 1990 to 2010," *International Migration Review*, vol. 47, no. 2 (July 2013), pp. 296–329, <https://doi.org/10.1111/imre.12022>; and Department of Homeland Security, "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2015" (December 2018), <https://go.usa.gov/xvDQp>.

Estimates of Survey Undercounting of Foreign-Born People, by Legal Status

Researcher	Population Examined	Reference Period	Estimated Undercount Rate (Percent)
Jennifer Van Hook and Others	Mexican-born without legal status	Late 1990s and early 2000s	26
Jennifer Van Hook and Others	Mexican-born without legal status	Late 2000s	9
Jeffrey S. Passel	Mexican-born without legal status	2000	15
Jeffrey S. Passel	Foreign-born without legal status	2000	12
Jeffrey S. Passel and D'Vera Cohn	Foreign-born without legal status	1995–2000	20–10 ^a
Jeffrey S. Passel and D'Vera Cohn	Foreign-born without legal status	2000–2009	13–8 ^a
Jeffrey S. Passel and D'Vera Cohn	Foreign-born without legal status	2010–2014	7–5 ^a
Jeffrey S. Passel and D'Vera Cohn	Foreign-born	1990s	Less than 5
Jeffrey S. Passel and D'Vera Cohn	Foreign-born	2000–2014	3–2 ^a
Department of Homeland Security ^b	Foreign-born without legal status	2000, 2005–2014	10
Department of Homeland Security ^b	Foreign-born with legal status as legal permanent residents, refugees, people who were granted asylum ^c	2000, 2005–2014	2.5
Department of Homeland Security ^b	Foreign-born with legal status for a specific period and purpose ^d	2000, 2005–2014	10

Sources: Jennifer Van Hook and others, “Recent Trends in Coverage of the Mexican-Born Population of the United States: Results From Applying Multiple Methods Across Time,” *Demography*, vol. 51 (April 2014), pp.699–726, <https://doi.org/10.1007/s13524-014-0280-2>; Jeffrey S. Passel, “Demographic Analysis: An Evaluation,” in U.S. Census Monitoring Board Presidential Members, *Final Report to Congress* (U.S. Census Monitoring Board, 2001), pp. 86–113, <https://catalog.hathitrust.org/Record/007400812>; Jeffrey S. Passel and D'Vera Cohn, *Overall Number of U.S. Unauthorized Immigrants Holds Steady Since 2009* (Pew Research Center, September 2016), pp. 22–46, <https://tinyurl.com/u43pxkc>; Department of Homeland Security, “Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2015” (December 2018), <https://go.usa.gov/xvDQp>.

a. The estimated undercount rate declined over time.

b. CBO’s analysis did not directly use estimates from the Department of Homeland Security, which are constant over time, but they are presented here for completeness.

c. This population accounts for roughly 90 percent of foreign-born people with legal status. See Department of Homeland Security, “Nonimmigrants Residing in the United States: Fiscal Year 2016” (March 2018), <https://go.usa.gov/xvDQF>.

d. This population accounts for roughly 10 percent of foreign-born people with legal status.

probability, reassigned the likely status of some individuals. Further adjustments ensured that the total populations by legal status aligned with totals derived from the demographic methods, which used alternative data that reflect more complete counts.¹⁰ Because of the Immigration Reform and Control Act of 1986, foreign-born people residing

in the United States in 1982 were probably here legally. From 1982 onward, CBO derived reliable estimates of the total number of foreign-born people without legal status by using data from the Census Bureau, which enumerate the foreign-born population of the United States, and administrative data from the Department of Homeland Security, which report the number of foreign-born people who enter the country legally each year.

Sources of Uncertainty in CBO’s Estimates

The main sources of uncertainty in CBO’s estimates are the reliability of the survey responses, the reliability of the criteria used in the procedure for estimating legal status, and the reliability of the adjustment for survey undercounting of the foreign-born population.

10. CBO will explain this adjustment in detail in a forthcoming working paper.

Reliability of Survey Responses

All survey data, including the CPS ASEC used by CBO in this analysis, involve some degree of misreporting in the responses of people who take the survey. Respondents may misremember, withhold, or intentionally misrepresent information about their demographic characteristics or employment history, for instance. The problem of misreporting or nonresponse is probably exacerbated for people who are not legally residing or working in the United States.

Reliability of Criteria for Estimating Probable Legal Status

Some of the criteria for assigning likely legal status are subject to error when used as a sole reason for the assignation because they are too broad. Imperfectly targeted criteria have two potential effects: They might bias CBO's estimates of the numbers of people with and without legal status, and they might improperly influence the assignment of legal status to individuals and thus the estimated characteristics of the populations with and without legal status. CBO addressed those concerns in two ways.

First, CBO made some adjustments to its estimates of legal immigration status based on the CPS ASEC. One of those adjustments ensures that CBO's final estimates of the numbers of people with and without legal status are not biased by the imperfectly targeted criteria. The adjustment aligns CBO's final estimates with those derived by using demographic methods and alternative data that reflect more complete counts of the foreign-born population by legal status.

Second, research suggests that analyses can reliably reflect populations' characteristics even when they use only the criteria for assigning legal status.¹¹ Still, because the number of people estimated as likely to have legal status on the basis of any one criterion is influenced by the order in which the criteria are applied, CBO placed imperfectly targeted criteria later in the sequence to reduce the potential for error.

One such criterion is whether a person received certain government benefits or was covered by certain government insurance. Even though most of those people have legal status, some do not: Social Security recipients may include beneficiaries of Temporary Protected Status, beneficiaries of policies under which the executive branch does not seek their immediate deportation (although beneficiaries of Deferred Action for Childhood Arrivals are currently too young to receive old-age benefits), and people who have been temporarily allowed into the country while awaiting deportation proceedings in immigration courts, none of whom have legal immigration status.

Similarly, people enrolled in Medicaid generally have legal status, but CBO could not account for people without legal status who may have mistakenly reported that they were enrolled because they

11. See George J. Borjas, "The Labor Supply of Undocumented Immigrants," *Labour Economics*, vol. 46 (June 2017), pp. 1–13, <https://doi.org/10.1016/j.labeco.2017.02.004>. CBO's adjustment to align its final estimates of the foreign-born population by legal status with more complete counts also mitigates the effect of imperfectly targeted criteria on estimated characteristics because it uses a regional procedure to change the criteria-based status assignments for some individuals.

had legitimately benefited from Medicaid in emergency situations. (However, CBO did account for states' allowing coverage for certain people without legal status who would otherwise be ineligible.)

Likewise, people who are close relatives of a head of household with legal status probably have legal status themselves. However, under the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, people who have been in the country without legal status generally cannot be granted legal status unless they remain outside the United States for a number of years. Family members who are unwilling to risk separation for such a period and choose not to pursue a change in their legal status are in the country illegally.

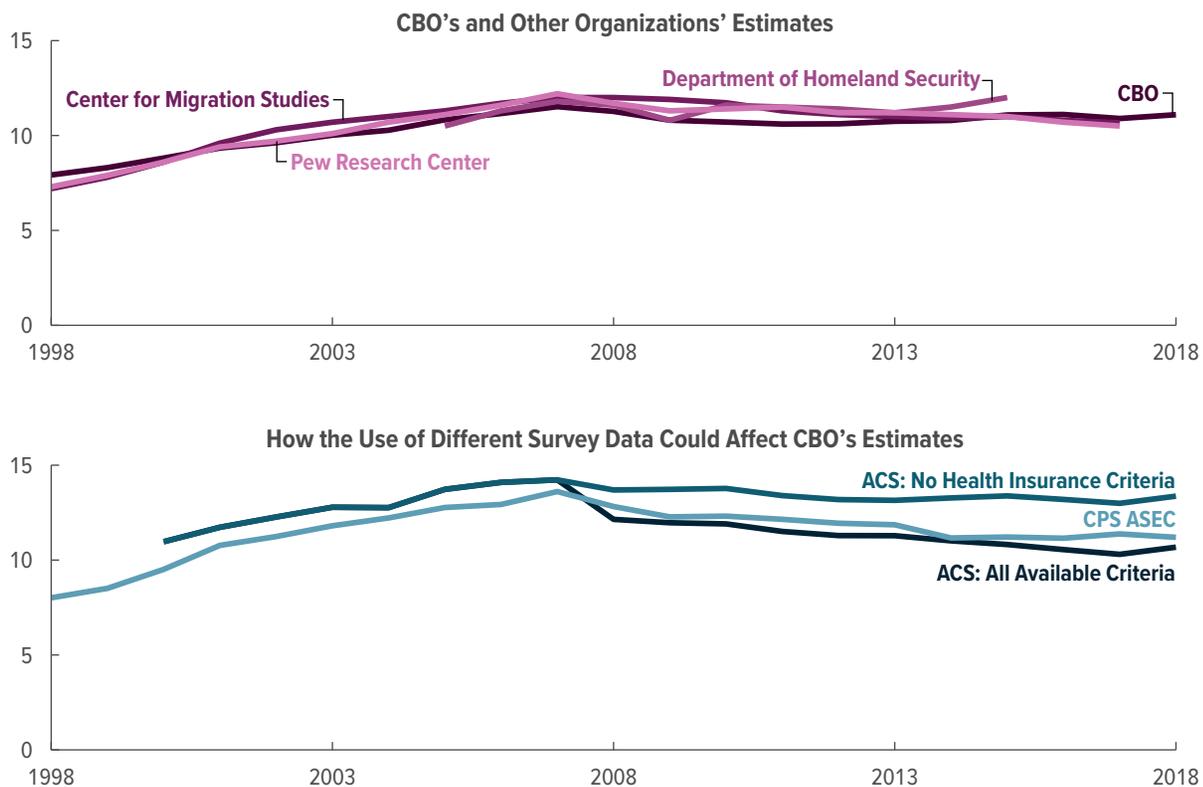
Fewer assignments of probable legal status come from other imprecisely targeted criteria. Most people in occupations that require licensing have legal status, but the CPS ASEC data are not detailed enough to take into account the limited circumstances under which some state laws—for example, those of Florida, Illinois, Nebraska, New York, and Wyoming—allow for licensing certain people without legal status. (The data do allow CBO to take into account state laws in California, Nevada, South Dakota, Utah, and West Virginia.) Researchers estimate that foreign-born people who entered the United States at age 60 or older usually, but not always, have legal status.

Reliability of the Adjustment for Survey Undercounting

Because the research literature has very few estimates of survey undercounting of foreign-born

Estimates of Foreign-Born People Without Legal Status, 1998 to 2018

Millions of People



Source: Congressional Budget Office, using census and American Community Survey data from IPUMS-USA, Current Population Survey data from IPUMS-CPS, and data from the Center for Migration Studies, the Department of Homeland Security, the Pew Research Center, and Robert Warren and John Robert Warren, “Unauthorized Immigration to the United States: Annual Estimates and Components of Change, by State, 1990 to 2010,” *International Migration Review*, vol. 47, no. 2 (July 2013), pp. 296–329, <https://doi.org/10.1111/imre.12022>.

The estimates in the bottom panel reflect only the first two of the three adjustments CBO used in its estimation procedure as described in this appendix. (Those first two adjustments address preferred population estimates and survey undercounting of foreign-born people.) The estimates in the bottom panel do not reflect the adjustment to the population counts by legal status that CBO derived by using demographic methods. The bottom panel serves only to illustrate the relative effect of the missing health insurance information and the difference in sample size between the CPS ASEC and the ACS on the outcome of CBO's procedure before incorporating that final adjustment.

ACS = American Community Survey; CPS ASEC = Current Population Survey Annual Social and Economic Supplement.

people by legal status, any adjustment based on those estimates is subject to uncertainty. CBO derived its estimated undercount rates from those indicated in the literature (see the table on page 26).

How CBO's Estimates Compare With Other Analyses

CBO's estimates of the number of foreign-born people without legal status are comparable to those of other researchers (see the top panel of the figure).¹² This report focuses on averages and shares in reporting people's characteristics—for example, the average earnings of workers without legal status and the share of people without legal status who have college degrees—rather than counts. So, regardless of the differences in estimates of

12. One set of annual estimates diverges substantially from the estimates presented in the top panel of the figure. See Mohammad M. Fazel-Zarandi, Jonathan S. Feinstein, and Edward H. Kaplan, “The Number of Undocumented Immigrants in the United States: Estimates Based on Demographic Modeling With Data From 1990 to 2016,” *PLOS One* (September 21, 2018), <https://doi.org/10.1371/journal.pone.0201193>. The researchers' average estimate of the population without legal status in 2016, for example, is 22.1 million. Their results are highly sensitive to assumptions they make to estimate the number of people crossing the border illegally and the number of people returning to their country of origin. Some of those assumptions are at odds with related data sources, and reasonable alternatives lead to very different estimates. For further discussion, see Steven A. Camarota, “New Estimate of 22 Million Illegal Immigrants Is Not Plausible,” Center for Immigration Studies (blog entry, September 22, 2018), <https://tinyurl.com/yx8c2qb2>; and Randy Capps and others, “Commentary on ‘The Number of Undocumented Immigrants in the United States: Estimates Based on Demographic Modeling With Data From 1990–2016’” *PLOS One* (September 21, 2018), <https://doi.org/10.1371/journal.pone.0204199>.

the total number of such people, CBO's estimation procedure yielded adequately representative samples for the purposes of examining such characteristics.

The characteristics that CBO reports in this document reflect data from the CPS ASEC. The sample size of roughly 100,000 addresses is adequate for examining large groups of people at the national level. Researchers often use the Census Bureau's larger American Community Survey (ACS), which

includes roughly 3 million addresses, to examine the national population and, in particular, to examine smaller groups of people at subnational levels. CBO used the CPS ASEC because, for the first half of the period analyzed, the ACS does not contain all of the information used in the estimation procedure. Ultimately, the difference in sample size between the two surveys did not have a large effect on the estimates, but the information missing from the ACS would have (see the bottom panel of the figure on page 28). In particular,

the ACS only began incorporating information about government-provided health insurance in 2008. Using the estimation procedure on the ACS data without including that health insurance information would have produced significantly higher estimates of the number of foreign-born people without legal status than the estimates obtained when using the CPS ASEC. Including that health insurance information when it became available produced results that were very similar to those obtained by using the CPS ASEC.



About This Document

This report was prepared at the request of the Ranking Member of the Senate Committee on Health, Education, Labor, and Pensions. In keeping with the Congressional Budget Office's mandate to provide objective, impartial analysis, the report makes no recommendations.

Jordan Berne (formerly of CBO), David Burk, Julia Heinzl, Rebecca Heller, and Natalie Tawil prepared the report with guidance from Molly Dahl and Joseph Kile. Jimmy Chin (formerly of CBO), Daniel Crown, Sam Papenfuss, David Rafferty, Ricci Reber (formerly of CBO), and Julie Topoleski provided useful comments. Pranav Bhandarkar fact-checked the report.

Jeanne Batalova of the Migration Policy Institute, George Borjas of Harvard University, Julia Gelatt of the Migration Policy Institute, Heidi Shierholz of the Economic Policy Institute, Michael R. Strain of the American Enterprise Institute, and Robert Warren of the Center for Migration Studies of New York also provided helpful comments. (The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.)

Wendy Edelberg (formerly of CBO), Jeffrey Kling, and Robert Sunshine reviewed the report. The editor was Rebecca Lanning, and the graphics editor was Robert Rebach. The report is available on CBO's website (www.cbo.gov/publication/56357).

CBO continually seeks feedback to make its work as useful as possible. Please send any comments to communications@cbo.gov.

Phillip L. Swagel
Director
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