



Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2018–January 2022

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This report presents annual estimates of the size and characteristics of the unauthorized immigrant population residing in the United States as of January 1 for the years 2018 through 2020 and for 2022.¹ The population must be estimated because there is no nationally representative survey or census that includes information on the legal status of foreign-born residents. Results are tabulated according to available demographic characteristics, including period of entry, country of origin, state of residence, age, and sex. As in previous editions, the estimates were calculated using the residual method in which the unauthorized population is the remainder (or residual) after the legally-resident, foreign-born population—naturalized citizens, children who derived citizenship from one or more parents, lawful permanent residents (LPRs), asylees, refugees, and certain nonimmigrants—is subtracted from the total foreign-born population.² The legally-resident subpopulation was estimated primarily based on the Department of Homeland Security’s (DHS) administrative records along with modeled components of population change (such as emigration and mortality), and the total foreign-born population estimate was derived from the U.S. Census Bureau’s American Community Survey (ACS) with adjustments for undercount and choice of reference date.

In summary, the Office of Homeland Security Statistics (OHSS) estimates 11.0 million unauthorized immigrants were living in the United States on January 1, 2022, down from 11.6 million in 2010 and up from 10.5 million in January 2020. This increase ends a declining trend from January 2016 to January 2020 or 2021.³ Forty-four percent of unauthorized immigrants in 2022 were from Mexico, compared to 59 percent in 2010 and 55 percent in 2015. Seventy-nine percent entered prior to January of 2010 and 42 percent resided in California or Texas.

Definitions

LEGAL RESIDENTS

The legally-resident, foreign-born population, as defined for these estimates, includes naturalized citizens, children who derived citizenship from one or more parents, persons granted lawful permanent residence, persons granted asylum, persons admitted as refugees, and persons admitted as resident nonimmigrants (i.e., students and temporary workers, as opposed to tourists) who have unexpired authorized periods of admission.

UNAUTHORIZED IMMIGRANTS

The resident unauthorized immigrant population is defined as all foreign-born noncitizens who are not legal residents as defined above. Most unauthorized immigrants either entered the United States without inspection or were admitted temporarily and remained past the date they were required to depart. Persons who are beneficiaries of Temporary Protected Status (TPS), Deferred Action for Childhood Arrivals (DACA) or other forms of prosecutorial discretion, or who are residing in the United States while awaiting removal proceedings in immigration court are included among the estimates of the unauthorized population. Unauthorized immigrants applying for adjustment to LPR status under the Immigration and Nationality Act (INA) are considered to be part of the resident unauthorized population until they have been granted lawful permanent residence. Individuals who were paroled into the United States are considered to be unauthorized immigrants until they are admitted or otherwise acquire immigration status.

¹ Estimates as of January 1, 2021 are not available due to limitations in the 2020 edition of the U.S. Census American Community Survey (ACS), as discussed below.

² Previous editions of this report are available at: <https://www.dhs.gov/ohss/topics/immigration>. Although the method in this report is very similar to that used in earlier editions, the current report includes methodological updates that are discussed in the appendix.

³ The last year of the declining trend is unknown because an estimate for January 2021 is unavailable, as discussed below.

Methodology Overview and Data

This report estimates two populations to derive the unauthorized immigrant population estimate: 1) the total foreign-born population living in the United States on January 1 of each year in the series, and 2) the legally-resident, foreign-born population on the same dates. The unauthorized immigrant population estimate is the residual when the second population is subtracted from the first population.

Data on the total foreign-born population that entered during 1980–2021 by country of birth, state of residence, year of entry, age, and sex were obtained or derived from the 2017–2019 and 2021 editions of the ACS.⁴ The ACS is a nationally representative survey that collects information from U.S. households and other group living arrangements on social, demographic, and economic characteristics, including country of birth and year of entry of the foreign-born population.⁵ Foreign-born residents who entered the United States prior to 1980 are assumed to be legally resident and are therefore excluded from the calculations.⁶

Data for several subsets of the legally-resident, foreign-born population are derived from DHS and other administrative records. Administrative records from U.S. Citizenship and Immigration Services (USCIS) include data on persons who obtained LPR status or naturalized, Department of State records include data on refugee arrivals, USCIS and the Department of Justice Executive Office for Immigration Review maintain records of persons granted asylum affirmatively or defensively, and the U.S. Customs and Border Protection (CBP) Arrival and Departure Information System (ADIS) database includes person-level information on nonimmigrant arrivals, departures, and nonimmigrant status.⁷ Each of these systems includes information on subjects' country of birth or nationality, state of residence, age, sex, category of admission, and year of entry.

OHSS generates its estimate of the unauthorized population by subtracting the legally-resident, foreign-born population from the total foreign-born population. Demographic data in the ACS and administrative records allow OHSS to generate estimates for the 10 leading countries of birth and states of residence and by age and sex.

See Appendix 1 for more detailed information on each component of the estimation process, including changes from previous editions of this report in the methods and data sources.

⁴ Data to estimate the population on January 1 of 2018, 2019, 2020, and 2022 were obtained from each of the prior years' ACS surveys. As a result of substantial challenges related to COVID-19, the 2020 ACS was not considered a reliable source for the purpose of this report (see Daily et al., 2021) and estimates as of January 1, 2021 are not available as a result.

⁵ OHSS uses the ACS to build its estimates because of its large sample size: about three million households per year, compared to about 100,000 annually for the Current Population Survey, which is the primary alternative source of national data on the foreign-born population.

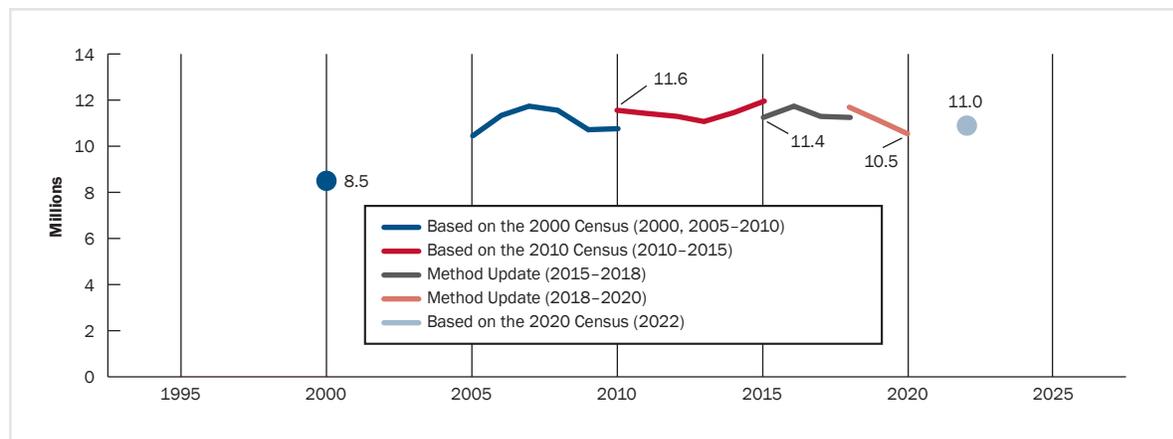
⁶ The vast majority of otherwise-unauthorized immigrants who entered the United States prior to 1980 and who still reside in the country likely obtained lawful status prior to 2015 under Section 249 of the INA, which allows qualified persons who have resided continuously in the United States since prior to January 1, 1972 to apply for LPR status under the so-called registry provision, or under the Immigration Reform and Control Act (IRCA) of 1986 (Pub. L. No. 99-603, 100 Stat. 3359 (1986)), which allowed qualified persons who have resided continuously in the United States since prior to January 1, 1982 to adjust to lawful status.

⁷ The use of the ADIS database to estimate the legally resident nonimmigrant population represents a methodological change from previous editions of this report, in which the nonimmigrant population was estimated using trend-based modeling that could not be continued due to Coronavirus-Disease 2019 (COVID-19)-related disruption of nonimmigrant travel trends. See Appendix 1 for further discussion.

Findings

Figure 1

Unauthorized Immigrant Population Estimates by Year: 2000–2022



Notes: The estimates for the 2005–2010 series were based on ACS vintages tied to the 2000 decennial census, the estimates for the 2010–2015, 2015–2018, and 2018–2020 series were based on ACS vintages tied to the 2010 decennial census, and the 2022 estimate was based on an ACS vintage tied to the 2020 decennial census. The estimate for 2018 has been updated compared to the previous edition of this report. Estimates for 2001–2004 and 2021 are not available. See Appendix 2 for details and values for each year estimated. Source: Office of Homeland Security Statistics

Figure 1 summarizes OHSS’ estimates of the unauthorized population for 2000, 2005–2020, and 2022. Readers should exercise caution when describing changes in these estimates over time because some year-to-year variation may reflect sampling error in the ACS and/or non-sampling error in the estimation method (see Appendix), and OHSS does not have a methodology to evaluate the statistical significance of these fluctuations. Longer-term trends are also difficult to interpret because of several disjunctures in the data series: estimates for 2000 are directly based on the 2000 Census; estimates for 2005–2010 are based on ACS data tied to the 2000 Census; estimates for 2010–2020 are based on ACS data tied to the 2010 Census; and estimates for 2022 are based on ACS data tied to the 2020 Census. In addition, estimates for 2015–2018 and 2018–2022 incorporate minor updates to improve upon the methodology employed in previous years. For each of the 2010, 2015, and 2018 break points, the figure includes estimates generated under earlier and later data sources/assumptions.

PERIOD OF ENTRY

The size of the unauthorized immigrant population that arrived since 2010 declined by 280,000 from 2018 to 2020, then grew by 630,000 from 2020 to 2022 (Table 1 and Figure 2). The vast majority of the population (79 percent) entered before 2010, but that percentage is declining (from 83 percent in 2018) as new unauthorized entrants arrive and earlier entrants emigrate, die, or adjust to legally resident status.

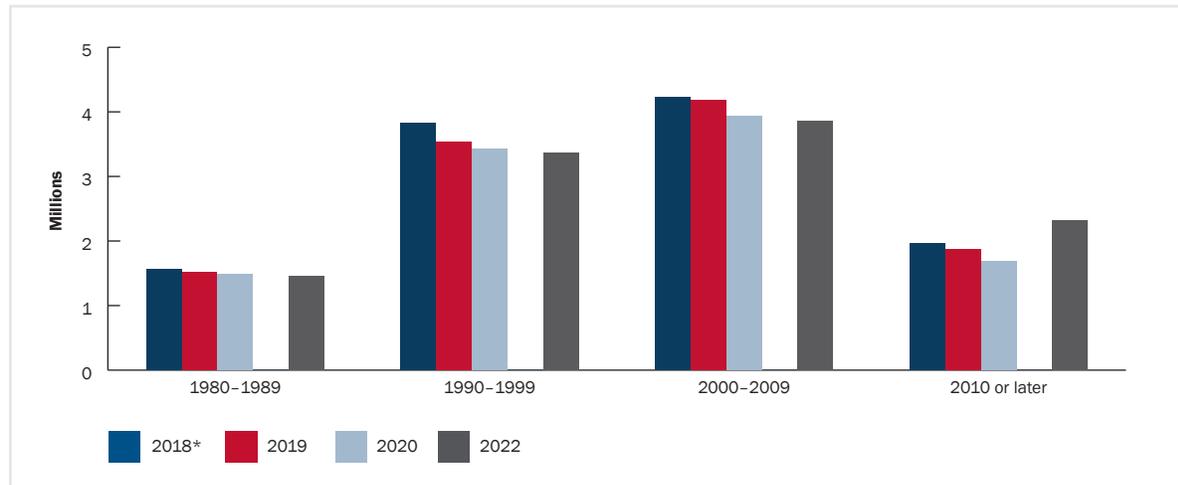
Table 1**Unauthorized Immigrant Population Estimates by Period of Entry: 2018–2020 and 2022**

Period of Entry	2018*	2019	2020	2022
Total	11,570,000	11,110,000	10,510,000	10,990,000
1980–1990	1,560,000	1,520,000	1,480,000	1,460,000
1990–1999	3,820,000	3,540,000	3,420,000	3,360,000
2000–2009	4,230,000	4,180,000	3,930,000	3,860,000
2010 or later	1,960,000	1,870,000	1,680,000	2,310,000

* The estimate for 2018 has been updated compared to the previous edition of this report.

Notes: Detail may not sum to totals because of rounding. Estimates for 2021 are not available.

Source: Office of Homeland Security Statistics.

Figure 2**Unauthorized Immigrant Population Estimates by Period of Entry: 2018–2020 and 2022**

* The estimate for 2018 has been updated compared to the previous edition of this report.

Note: Estimates for 2021 are not available.

Source: Office of Homeland Security Statistics.

ESTIMATES BY COUNTRY OF BIRTH

The unauthorized immigrant population from Mexico continued the decline observed in the previous edition of this report,⁸ from 5.54 million in 2018 to 4.81 million in 2022, a reduction of about 0.73 million or 180,000 people per year (Table 2).⁹ Despite this long-term declining trend, Mexico remains by far the largest country of origin for the unauthorized immigrant population.

After Mexico, the next largest unauthorized immigrant populations were from Guatemala, El Salvador, and Honduras. The numbers of unauthorized immigrants from Guatemala (750,000) and Honduras (560,000) increased from 2018 by 21 and 24 percent, respectively, mostly between January 2019 and January 2020, while the number from El Salvador (710,000) remained relatively unchanged from 2018.

Like Mexico, the unauthorized immigrant populations from India and China also declined during the period, both by substantial percentages.¹⁰ The Indian population fell by 54 percent, or 260,000 people, from 480,000 in 2018 to 220,000 in 2022, while the Chinese population declined by 47 percent, or 180,000, from 390,000 to 210,000.

⁸ See Baker, 2021.

⁹ Throughout this report, percentages and percent change were calculated prior to rounding.

¹⁰ This edition of the report groups Hong Kong and Macau with China, whereas previous editions did not.

The populations from Colombia (240,000) and Brazil (230,000) declined from 2018 to 2019 before increasing from 2019 through 2022 by about 3 to 5 percent per year. The population from Venezuela grew steadily by 17 percent per year, from 190,000 in 2018 to 320,000 in 2022.

Table 2

Unauthorized Immigrant Population Estimates by Top 10 Countries of Birth: 2018–2020 and 2022

Country	2018*	2019	2020	2022
Total	11,570,000	11,110,000	10,510,000	10,990,000
Mexico	5,540,000	5,350,000	4,970,000	4,810,000
Guatemala	620,000	670,000	780,000	750,000
El Salvador	730,000	750,000	750,000	710,000
Honduras	450,000	450,000	550,000	560,000
Philippines	370,000	360,000	340,000	350,000
Venezuela	190,000	220,000	260,000	320,000
Colombia	210,000	190,000	190,000	240,000
Brazil	190,000	180,000	190,000	230,000
India	480,000	390,000	340,000	220,000
China, People's Republic	390,000	330,000	270,000	210,000
All other countries	2,400,000	2,220,000	1,870,000	2,600,000

* The estimate for 2018 has been updated compared to the previous edition of this report.

Notes: Detail may not sum to totals because of rounding. Estimates for 2021 are not available. The estimates for China include Hong Kong and Macau.

Source: Office of Homeland Security Statistics.

ESTIMATES BY STATE OF RESIDENCE

California and Texas remained the leading states of residence of the unauthorized population in 2022, with 2.6 million and 2.1 million people, respectively, together accounting for 42 percent of the total unauthorized population (Table 3). The next leading states were Florida (590,000), New Jersey (490,000), Illinois (420,000), and New York (410,000). The 10 leading states represented 72 percent of the total unauthorized population in 2022. From 2018 to 2022, the unauthorized population fell by nearly 100,000 in Florida and 200,000 in New York and increased by 110,000 in Texas.

Table 3

Unauthorized Immigrant Population Estimates by Top 10 States of Residence: 2018–2020 and 2022

State	2018*	2019	2020	2022
Total	11,570,000	11,110,000	10,510,000	10,990,000
California	2,640,000	2,620,000	2,410,000	2,600,000
Texas	1,950,000	1,950,000	1,900,000	2,060,000
Florida	680,000	650,000	610,000	590,000
New Jersey	460,000	390,000	400,000	490,000
Illinois	460,000	440,000	370,000	420,000
New York	600,000	510,000	370,000	410,000
North Carolina	360,000	340,000	360,000	360,000
Georgia	390,000	360,000	360,000	340,000
Washington	310,000	330,000	340,000	340,000
Arizona	340,000	330,000	340,000	290,000
Other or Unknown	3,380,000	3,200,000	3,040,000	3,090,000

* The estimate for 2018 has been updated compared to the previous edition of this report.

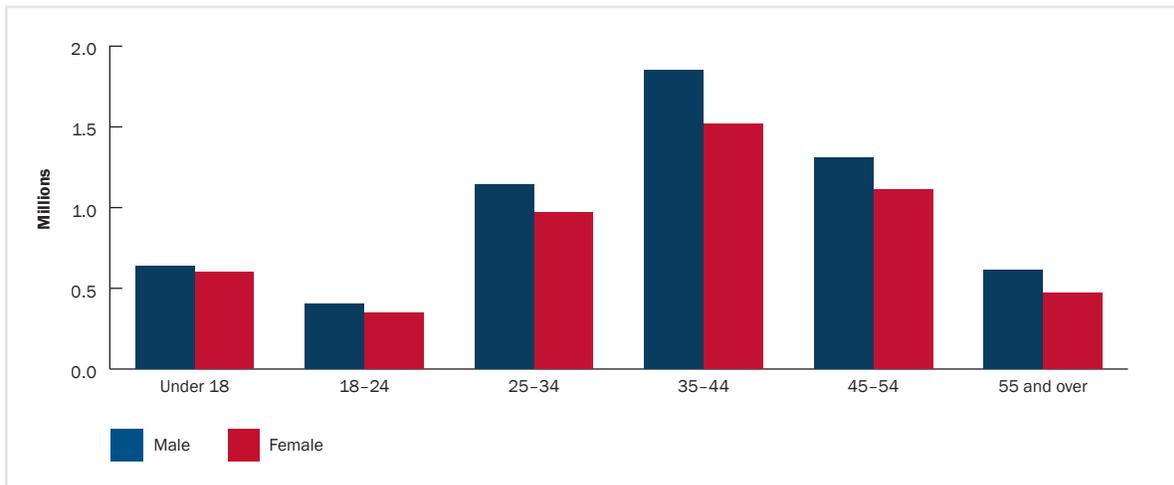
Notes: Detail may not sum to totals because of rounding. Estimates for 2021 are not available.

Source: Office of Homeland Security Statistics.

ESTIMATES BY AGE AND SEX

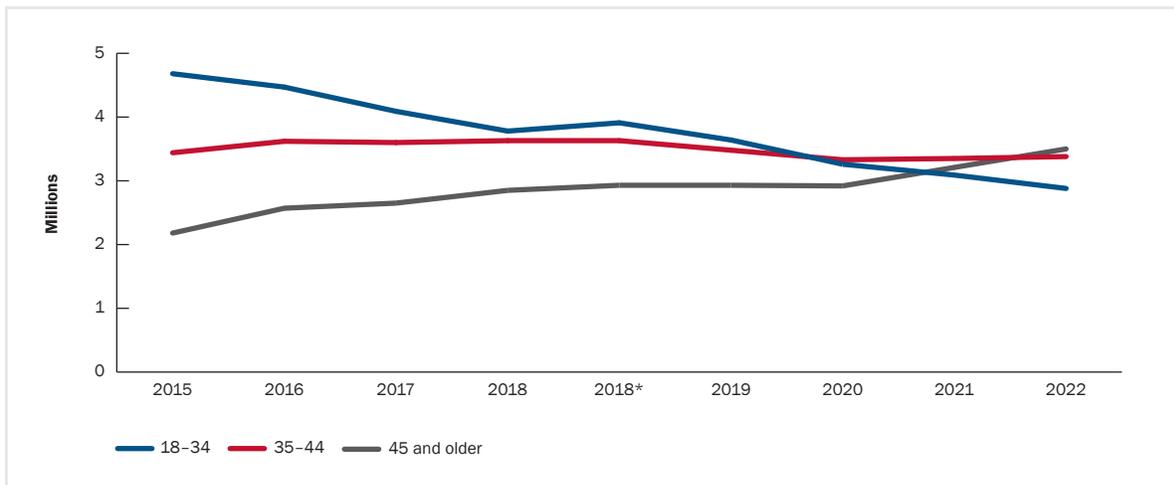
The unauthorized immigrant population aged from 2015 to 2022 (Figures 3 and 4 and Table 4). Although the total unauthorized population size declined by about 450,000 (4 percent, from 11.44 in 2015 million to 10.99 million in 2022) during this period, the number who were ages 18 to 34 declined by 1.8 million (49 percent), and the number ages 45 and older increased by 1.3 million (61 percent). While the overall trend in Figure 4 is supported by available data, some of the steep change from 2020 to 2022 may be related to the recalibration of the ACS series from a basis on the 2010 decennial census to the 2020 decennial census.¹¹

Figure 3
Unauthorized Immigrant Population Estimates by Age and Sex: 2022



Source: Office of Homeland Security Statistics.

Figure 4
Unauthorized Immigrant Population Estimates by Age Group: 2015–2022



Note: Estimates for 2021 were not available and are shown as the averages for 2020 and 2022.

Source: Office of Homeland Security Statistics.

¹¹ The timing of the increase in older males from 2020 to 2022 aligns with the recalibration of the ACS, and the size and character of the change are not consistent with the younger group aging in to the older group, the relatively small number of illicit border crossers in that age group, or changes in the populations of resident nonimmigrants or nonimmigrant overstayers; this suggests that the increase may be attributable to “corrections” to the size and/or demographic characteristics such as age in the ACS series rather than an actual increase.

Table 4**Unauthorized Immigrant Population Estimates by Age and Sex: 2018–2020 and 2022**

Age and Sex	2018*	2019	2020	2022
Males and Females				
Total	11,570,000	11,110,000	10,510,000	10,990,000
Under 18	1,100,000	1,050,000	1,010,000	1,230,000
18–24	990,000	940,000	840,000	760,000
25–34	2,920,000	2,700,000	2,420,000	2,120,000
35–44	3,630,000	3,480,000	3,330,000	3,380,000
45–54	2,040,000	2,100,000	2,110,000	2,420,000
55 and over	890,000	830,000	820,000	1,080,000
Male				
Total	6,010,000	5,780,000	5,510,000	5,960,000
Under 18	570,000	550,000	540,000	630,000
18–24	550,000	480,000	460,000	410,000
25–34	1,590,000	1,500,000	1,290,000	1,140,000
35–44	1,890,000	1,840,000	1,770,000	1,850,000
45–54	1,040,000	1,060,000	1,090,000	1,320,000
55 and over	380,000	350,000	370,000	610,000
Female				
Total	5,560,000	5,330,000	5,000,000	5,030,000
Under 18	530,000	500,000	470,000	600,000
18–24	450,000	450,000	380,000	350,000
25–34	1,330,000	1,200,000	1,130,000	970,000
35–44	1,740,000	1,640,000	1,560,000	1,520,000
45–54	1,000,000	1,040,000	1,020,000	1,110,000
55 and over	510,000	480,000	450,000	470,000

* The estimate for 2018 has been updated compared to the previous edition of this report.

Notes: Detail may not sum to totals because of rounding. Estimates for 2021 are not available.

Source: Office of Homeland Security Statistics.

Alternative Estimates

RESIDUAL ESTIMATES

The Pew Research Center and the Center for Migration Studies (CMS) also estimate the unauthorized immigrant population (see Passel and Krogstad, 2023, and Warren, 2024). The OHSS, Pew, and CMS estimates are generally similar, but key differences in methodological details mean the estimates are not identical. Some of these methodological differences are described below:

- **Survey undercount.** The residual model estimates the total foreign-born population based on U.S. Census survey data, but the Census is believed to under-count the foreign-born population—and particularly the unauthorized immigrant population—at higher rates than the native-born population. The exact degree of the undercount and how it may differ with time spent in the United States and for different sub-groups is unknown and must be estimated or modeled.
- **Emigration modeling.** The residual method uses estimates of the lawful permanent resident population which are based on previous immigration inflows, adjusted for mortality and emigration (i.e., lawful immigrants who depart the United States). Mortality rates can be estimated with precision based on standard demographic tables, but similar tables do not exist for emigration rates.
- **Methods for estimating the nonimmigrant, refugee, and asylee populations.** OHSS estimates nonimmigrants, refugees, and asylees based on previous admissions data, controlling for estimated deaths and observed or measured outflows. Pew and CMS identify these populations based on their expected characteristics in Census data. These methodological differences affect the estimated size of the legally-resident population and therefore have an influence on the estimated size of the unauthorized population.
- **Techniques used to control for entry-year heaping in the ACS.** Census data on the foreign-born population indicate an unexpectedly large number of immigrants who report entering the United States in 1980 (along with other round-numbered years) relative to surrounding years (“heaping” on 1980). Unauthorized immigrants who entered prior to 1980 are assumed to have legalized through the INA registry provision or the Immigration Reform and Control Act, so how analysts control for this heaping effect has an impact on the resulting population estimate.
- **Base populations used in the residual method.** The residual method used by OHSS starts with all foreign-born persons who entered in 1980 or later and subtracts off all legally-resident, foreign-born persons. One alternative would be to start with foreign-born noncitizens and subtract off all legally-resident, foreign-born noncitizens, i.e., to exclude naturalized citizens altogether from the calculations. Another alternative would be to start with the population who entered in 1982 or later instead of 1980. OHSS and Pew include naturalized citizens and people who entered in 1980–1981, whereas CMS does not. These different choices of starting populations can lead to different estimates due to recall bias (recollecting the exact year of entry), coverage changes, and/or over-reporting of citizenship in the ACS.
- **Estimation date.** Estimates for a given year may vary if they reflect different times of the year. For example, some residual estimates that use the ACS may reflect the average population size over the course of the year, whereas OHSS estimates are for January 1 of the given year.

These methodological differences result in some variation around a common “ballpark” estimate. In total, CMS estimated 10.94 million unauthorized immigrants living in the United States in 2022, compared to 10.99 million estimated by OHSS and 10.5 million estimated by Pew for 2021.¹² All three organizations show a generally declining trend from 2016 or earlier until around 2020. For unauthorized immigrants from Mexico, CMS estimated 4.45 million in 2022, compared to 4.81 million estimated by OHSS and 4.1 million estimated by Pew for 2021.

¹² As of the time of this writing, 2022 estimates were not yet available from the Pew Research Center.

“INFLOW-OUTFLOW” ESTIMATES

In 2018, a team of academic researchers published a new estimate of the unauthorized population based on a different methodology (Fazel-Zarandi, Feinstein, and Kaplan 2018). Starting from an assumed 1990 baseline population of 3.5 million unauthorized immigrants, the Fazel-Zarandi et al. study combines separate estimates of population inflows (illegal entries and visa overstayers) and population outflows (deaths, emigration, repatriations, and acquisitions of legal status) to calculate year-over-year population changes. Their analysis aggregates inflow and outflow estimates over 16 years to produce an average estimate for 2016 of 22.1 million unauthorized immigrants.¹³

Preliminary research by OHSS replicates the Fazel-Zarandi et al. methodology and assesses the possibility that the size of the unauthorized population was in the range of 16.2–29.5 million on January 1, 2017, as Fazel-Zarandi et al. conclude, rather than 11.4 million as the DHS residual model estimates. One key finding is that the difference between Fazel-Zarandi et al.’s results and DHS’s residual model is entirely driven by high estimated growth in Fazel-Zarandi et al.’s model during the 1990s—yet key data required for inflow-outflow modeling are not available for those years. These data limitations, along with a number of questionable modeling assumptions, give OHSS little confidence in Fazel-Zarandi et al.’s findings about population growth in 1990–2000.

¹³ Fazel-Zarandi et al. assume probability distributions around each inflow and outflow component and simulate the model over a range of values; the simulation yields a range of estimated totals as of 2017 with a mean estimate 22.1 million and a 95 percent probability interval of between 16.2 and 29.5 million unauthorized immigrants.

Appendix 1: Component Estimation Details and Limitations

METHOD AND COMPONENTS

The unauthorized immigrant population estimate is the residual when the estimated legally-resident population is subtracted from the estimated total foreign-born population. This appendix describes the methodology and estimated populations for each component of the 2022 estimate; see Table A1 for corresponding values for 2018–2020.

This edition of the report includes an update to the method for estimating the legally-resident nonimmigrant populations that takes advantage of continued maturation of the CBP ADIS data and that was necessitated by disruption in nonimmigrant travel trends during the COVID-19 pandemic. This update is described below.

No unauthorized immigrant population estimate is available for 2021 due to 2020 ACS data collection and validity challenges related to COVID-19. Among other challenges, pandemic precautions disrupted response rates by interrupting the distribution of the mail-in survey and by preventing in-person follow-up interviews. Further, the data that were successfully collected underrepresented people who were less educated, had lower incomes, or lived in multi-family dwellings—populations in which the unauthorized are over-represented. The Census Bureau ultimately decided that the 2020 ACS did not meet quality standards and elected not to release the usual single-year data products. Without this information on the population present in 2020, OHSS could not estimate the unauthorized immigrant population for January 2021.

1) Total foreign-born population

a. Foreign-born population in 2021, entered 1980–2021 (38.1 million)

The initial estimate of the total foreign-born population that entered in 1980 to 2021 was obtained from the 2021 ACS Public Use Microdata Sample (PUMS), along with data on the distribution of the foreign-born population by country of origin, state of residence, year of entry, age, and sex. A 3-year moving average was applied to PUMS data for year of entry to reduce so-called heaping effects in which ACS survey responses disproportionately focus on round numbers.

Prior editions of this report reduced the overall PUMS estimate for the total foreign-born population to remove the Cuban-born population since all Cubans were assumed to take advantage of the Cuban Adjustment Act. The PUMS estimate was not reduced for Cubans entering in 2017 or later due to the termination in January 2017 of the wet-foot/dry-foot policy.

b. Shift in reference date to January 1, 2022 (420,000)

The 2021 ACS estimates of the foreign-born population are “centered on” the middle of 2021 and therefore do not count the full population that arrived in 2021. For example, the 2019 ACS estimated about 50 percent more foreign-born persons who entered the United States in 2018 than the 2018 ACS estimated for the same entry-year cohort. Over the 2017–2019 ACS vintages,¹⁴ this adjustment averaged 0.59. This report assumes the adjustment for 2021 entrants in the 2021 ACS will be similar and multiplies that estimate by 1.59.

¹⁴ Ordinarily we would use the immediately preceding three ACS vintages (2018–2020), but the 2020 vintage was of insufficient quality due to COVID-19-related challenges.

c. Undercount of nonimmigrants in the ACS (280,000)

The Census is believed to undercount nonimmigrants at higher rates than the native-born population. This report assumes that the undercount rate for nonimmigrants was 10 percent—the same rate assumed in DHS estimates for 2000 and 2005–2015 (U.S. Department of Homeland Security, 2003).

d. Undercount of LPRs, refugees, and asylees in the ACS (650,000)

This report assumes the undercount rate for LPRs, refugees, and asylees in the ACS was 2.5 percent—the same rate assumed in DHS estimates for 2000 and 2005–2018 (U.S. Department of Homeland Security, 2003).

e. Undercount of unauthorized immigrants in the ACS (390,000)

This report assumes that the undercount rate for unauthorized immigrants in the ACS is 13 percent for those who arrived in the most recent year and declines by 7.5 percent with each year of presence.¹⁵ This is the same model used for the 2000 and 2015–2018 editions of this report.

f. Total estimated foreign-born population, January 1, 2022 (39.8 million)

The sum of 1a. through 1e. (above) is the estimated foreign-born population on January 1, 2022 that entered the United States during the 1980–2021 period.

2) Legally-resident, foreign-born population

g. LPR, refugee, and asylee flow, entered 1980–2021 (36.1 million)

The 1980–2021 flow was calculated separately for LPRs, refugees, and asylees using DHS administrative data (Miller and Baker, 2023). LPRs consist of two groups: new arrivals and those who have adjusted status. New arrivals include all persons with immigrant visas issued by the Department of State who were admitted at a U.S. port of entry. For new arrival LPRs, the date of entry into the United States is the same as the date of approval for LPR status. For LPRs adjusting status, year of entry was assumed to be the most recent year of entry prior to adjustment.

The refugee and affirmative asylee populations were estimated by matching the previous 5 years of records for refugee arrivals and persons affirmatively granted asylum to records of LPR adjustment that occurred prior to January 1, 2022. The January 1, 2022 refugee and affirmative asylum populations consist of those persons who had not adjusted to LPR status by that date. Individual, detailed records were not readily available for defensive asylees, so that population was estimated by assuming the LPR adjustment rates were the same for defensive asylees as for affirmative asylees from the same country and granted asylum in the same year.

h. Mortality of legally-resident flow, 1980–2021 (3.5 million)

Data are not collected on the mortality of the legally-resident, foreign-born population. The LPR population was survived forward in time (from the year in which LPR status was obtained to January 2022) using National Center for Health Statistics mortality rates by age and sex from 1999–2001 (Arias et al., 2008).

i. Emigration of legally-resident flow, 1980–2021 (6.7 million)

Emigration is a major component of immigrant population change. In the absence of data that directly measure emigration from the United States, researchers have developed indirect estimates based largely on Census data. For this report, annual emigration rates were calculated from estimates of emigration of the foreign-born population based on 1980 and 1990 Census data (Ahmed and Robinson, 1994). The emigration model is similar to that used for the DHS LPR population estimates report, except that emigration risk was suspended until after naturalization for LPRs who became citizens. Further, refugees and asylees, with little likelihood of returning to their country of origin, were assumed not to emigrate. The model assumes 3.26 percent of new LPRs emigrate in their first year, declining by 5 percent per year of residence, resulting in a total effective emigration rate of 18.5 percent for this edition of the report.

¹⁵ This declining model was used for the 1990–2000 estimates published in 2003.

j. LPR, refugee, and asylee population, January 1, 2022 (26.0 million)

Subtracting mortality (2h.) and emigration (2i.) from the LPR, refugee, and asylee flow during 1980–2021 (2g.) results in the total estimated LPR, refugee, and asylee resident population on January 1, 2022.

k. Nonimmigrant population, January 1, 2022 (2.8 million)

The number of nonimmigrants living in the United States on January 1, 2022 was calculated by matching administrative records of nonimmigrant arrivals to subsequent records indicating departure in the CBP Arrival Departure Information System (ADIS), and then counting the number of resident-class nonimmigrants present in valid status during the 12-month period centered on January 1, 2022. The method starts with all admission records since October 2014, filtered to those reflecting admissions under nonimmigrant classes associated with residence.¹⁶ Next, for the 15th of each month from July 2021 to June 2022, ADIS checks for matched records indicating departure or expiration of status prior to that date and omits those, leaving 12 monthly counts of resident-class nonimmigrants present in valid status. Lastly, averaging the 12 monthly counts yields an annual average count centered on January 1, 2022.

This method (counting arrival records in ADIS and filtering out any with a matching departure record or for a person whose status expired) is new to the 2018–2022 series. OHSS previously planned to implement the new method for the 2022 estimates and beyond, but not for earlier estimates, because October 2014 is the earliest arrival date available in the ADIS data, and that restriction means substantial numbers of nonimmigrants who entered before October 2014 are excluded from the 2018–2022 estimates as explained below (see Limitations section). The new method was updated earlier than planned because the previous method was reliant on the stability of travel trends over time and was compromised by sudden, extreme changes in travel patterns in response to COVID-19.

l. Estimated legally-resident, immigrant population, January 1, 2022 (28.8 million)

Adding the population of LPRs, refugees, and asylees on January 1, 2022 (2j.) to the nonimmigrant population on the same date (2k.) results in the total estimated legally resident immigrant population in the United States on January 1, 2018.

3) Unauthorized population

m. Estimated unauthorized population, January 1, 2018 (11.0 million)

Subtracting the estimated legally-resident, foreign-born immigrant population (2l.) from the total foreign-born population on January 1, 2022 (1f.) yields the estimate of the unauthorized population.

LIMITATIONS

Annual estimates of the unauthorized population are subject to sampling error in the ACS and considerable non-sampling error because of uncertainty in some of the assumptions required for estimation described above.

Sampling error in the ACS. The estimates of the total foreign-born population that moved to the United States in the 1980–2021 period are based on a sample and are thus subject to sampling variability. Actual year-to-year fluctuations in the population size may be larger or smaller than estimated in the ACS, particularly when the foreign-born population is subdivided by state of residence or country of origin. The estimated margin of error for the estimate of the total foreign-born population in the 2021 ACS PUMS at the 90 percent confidence level is plus or minus approximately 165,000.

Assumptions about undercount of the foreign-born population in the ACS. The foreign-born—particularly unauthorized immigrants and nonimmigrants—are less likely than native-born Americans to respond to or to be included in responses to government surveys. To control for undercount of these “hard to count” populations, analysts must make assumptions about the extent of the undercount and then adjust the ACS survey estimates accordingly. The estimates are sensitive to these undercount adjustments.

¹⁶ See Baker, 2021, for a list of nonimmigrant classes associated with residence.

Assumptions about rates of emigration. The preexisting legally-resident, foreign-born population declines over time through mortality and emigration. Mortality rates can be estimated from standard demographic tables, but current, nationally representative data necessary to construct similar tables for emigration rates do not exist. The estimates are sensitive to emigration modeling assumptions.

Accuracy of year of entry reporting. Census data suggest that respondents provide unreliable answers to the Census year-of-entry question (“When did this person come to live in the United States?”), with disproportionate numbers of responses “heaping” on round numbers. Errors also occur in converting DHS administrative dates for LPRs into year of entry dates.

Assumptions about the nonimmigrant population estimate. ADIS was designed for operational (not statistical reporting) purposes, and there are some important challenges and limitations when using it for population estimates. First, the accuracy of the counts is dependent on the completeness of the data feeds and the reliability of the matching algorithm. Departures by land into Mexico are generally not recorded, so some people who departed may continue to be counted as present until their status expires or until another record is generated that indicates absence from the country (e.g., the person attends a visa interview abroad or applies for admission at a port of entry). Next, people who change to another nonimmigrant class or adjust to LPR status while within the United States continue to be counted under their prior nonimmigrant class until they leave and are subsequently readmitted. Both of these challenges result in overcounts of nonimmigrants. On the other hand, all trips that started prior to October 1, 2014 are excluded, which results in undercounts that are large in the first few months or years, but converge to zero over time.¹⁷ Further, the classes “associated with residency” do not conform perfectly to the definition of residence in the ACS.¹⁸ For example, a tourist might stay in the United States visiting family for several months and be considered a “resident” in the ACS, but not in the DHS estimates. Conversely, student and worker classes are generally associated with residency, but some individuals admitted under those classes may be present too briefly to meet the ACS residency definition. No statistical or demographic adjustments were made to account for these limitations, but might be made in the future as the data system and methodology continue to mature.

Accuracy of state of residence for the non-naturalized legally-resident, foreign-born population. The state of residence for the non-naturalized, legally-resident, 1980–2022 entrants is assumed to be the state of residence on the date the most recent status (e.g., refugee, LPR) was obtained; however, the accuracy of the estimates may be affected by state-to-state migration that occurred between the date of the status change and January 1, 2022.

Comparisons across years. Although DHS has been producing annual estimates since 2005, comparisons across multiple years are problematic. In addition to sampling error and the uncertainty surrounding the estimates described above, the series of DHS estimates is not fully consistent. Estimates of the foreign-born population from the 2011–2019 ACS vintages were based on the 2010 Census (adjusted for births, deaths, and migration), whereas estimates from earlier ACS vintages were based on the 2000 Census, and estimates from the 2021 ACS were based on the 2020 Census. DHS also made minor methodological updates to take fuller advantage of available data beginning with the 2015–2018 estimates and changed the data source and methodology for estimating the resident nonimmigrant component starting with the revised estimate for 2018. Comparisons across multiple years should be interpreted with caution.

¹⁷ For example, nonimmigrants who are admitted under the H1-B class and subsequently apply for an extension of stay may not be required to depart for 6 years or longer, so people admitted in FY 2014 or earlier on H1-B visas who didn’t depart and arrive again by January 2018 were excluded from the 2018 estimates.

¹⁸ In the ACS, an individual is considered to be a “resident” if the person was “living or staying [at the given address] for more than 2 months” or if they do not have another place to stay, even if they were staying at that address for less than 2 months.

Table A1-1**Component Estimates (in thousands) of the Unauthorized Immigrant Population: 2018–2020 and 2022**

Age and Sex	2018*	2019	2020	2022
1) Foreign-born population				
a. Foreign-born population, entered 1980–2021	36,480,000	36,900,000	37,090,000	38,080,000
b. Adjustment for shift in reference date from July 1, 2017 to January 1, 2022	690,000	590,000	550,000	420,000
c. Undercount of nonimmigrants in ACS	260,000	280,000	280,000	280,000
d. Undercount of other legally resident immigrants (LPRs, recent refugee/asylee arrivals) in ACS	610,000	620,000	640,000	650,000
e. Undercount of unauthorized immigrant population in ACS	520,000	470,000	410,000	390,000
f. Estimated foreign-born population, January 1, 2022	38,560,000	38,860,000	38,970,000	39,820,000
2) Legally resident population				
g. LPR, refugee, and asylee flow January 1, 1980–December 31, 2021	32,650,000	33,700,000	34,800,000	36,140,000
h. Mortality 1980–2021	2,570,000	2,780,000	3,000,000	3,450,000
i. Emigration 1980–2021	5,690,000	5,950,000	6,180,000	6,680,000
j. LPR, refugee, and asylee resident population, January 1, 2022	24,390,000	24,970,000	25,630,000	26,010,000
k. Nonimmigrant population on January 1, 2022	2,590,000	2,790,000	2,830,000	2,830,000
l. Estimated legally resident population, January 1, 2022	26,980,000	27,760,000	28,460,000	28,840,000
3) Unauthorized immigrant population				
m. Estimated resident unauthorized immigrant population, January 1, 2022	11,570,000	11,110,000	10,510,000	10,990,000

* The estimate for 2018 has been updated compared to the previous edition of this report.

Notes: Detail may not sum to totals because of rounding. Estimates for 2021 are not available.

Source: Office of Homeland Security Statistics.

Appendix 2: Updated Historical Estimates for January 2000 Through January 2022

Table A2-1

Estimates of the Unauthorized population (in thousands) by Country of Birth and State of Residence: 2000, 2005–2020, and 2022

Country	2000	2005	2006	2007	2008	2009	2010	2010*	2011	2012	2013	2014	2015	2015**	2016	2017	2018	2018**	2019	2020	2022
Total	8,460	10,490	11,310	11,780	11,600	10,750	10,790	11,590	11,510	11,430	11,210	11,460	11,960	11,440	11,750	11,410	11,390	11,570	11,110	10,510	10,990
Mexico	4,680	5,970	6,570	6,980	7,030	6,650	6,640	6,830	6,800	6,720	6,450	6,450	6,580	6,200	5,970	5,860	5,420	5,540	5,350	4,970	4,810
Guatemala	290	370	430	500	430	480	520	520	520	560	590	620	620	600	610	610	620	620	670	780	750
El Salvador	430	470	510	540	570	530	620	670	660	690	690	670	750	720	750	750	730	730	750	750	710
Honduras	160	180	280	280	300	320	330	380	380	360	390	390	440	420	430	500	450	450	450	550	560
Philippines	200	210	280	290	300	270	280	290	270	310	340	330	370	350	410	300	370	370	360	340	350
Venezuela	***	***	***	60	50	50	30	50	50	60	50	40	80	80	100	120	190	190	220	260	320
Colombia	100	110	140	130	130	100	110	120	130	130	160	130	140	130	140	130	210	210	190	190	240
Brazil	100	170	210	190	180	150	180	150	150	130	110	110	100	100	110	150	200	190	180	190	230
India	120	280	210	220	160	200	200	270	240	260	320	390	470	450	560	490	540	480	390	340	220
China	190	230	170	290	220	120	130	300	280	210	190	230	320	320	420	410	410	390	330	270	210
All others	2,180	2,500	2,510	2,290	2,240	1,880	1,750	2,020	2,030	2,010	1,920	2,090	2,110	2,080	2,260	2,090	2,260	2,400	2,220	1,870	2,600

State	2000	2005	2006	2007	2008	2009	2010	2010*	2011	2012	2013	2014	2015	2015**	2016	2017	2018	2018**	2019	2020	2022
Total	8,460	10,500	11,310	11,780	11,600	10,750	10,790	11,590	11,510	11,430	11,210	11,460	11,960	11,440	11,750	11,410	11,390	11,570	11,110	10,510	10,990
California	2,510	2,770	2,790	2,840	2,850	2,600	2,570	2,910	2,830	2,820	2,780	2,730	2,880	2,760	2,860	2,790	2,610	2,640	2,620	2,410	2,600
Texas	1,090	1,360	1,620	1,710	1,680	1,680	1,770	1,780	1,790	1,830	1,750	1,850	1,940	1,860	1,910	1,870	1,940	1,950	1,950	1,900	2,060
Florida	800	850	960	960	840	720	760	730	740	730	740	710	810	540	610	610	660	680	650	610	590
New Jersey	350	380	420	470	400	360	370	440	420	430	410	450	440	420	420	450	460	460	390	400	490
Illinois	440	520	530	560	550	540	490	550	550	540	520	530	450	440	520	440	450	460	440	370	420
New York	540	560	510	640	640	550	460	690	630	580	610	570	590	630	630	620	520	600	510	370	410
North Carolina	260	360	360	380	380	370	390	390	400	360	400	390	390	370	360	320	350	360	340	360	360
Georgia	220	470	490	490	460	480	460	430	440	400	390	410	390	370	400	400	380	390	360	360	340
Washington	170	***	280	260	260	230	200	260	260	270	240	280	270	260	280	280	290	310	330	340	340
Arizona	330	480	490	530	560	460	470	350	360	350	350	350	380	360	330	340	330	340	330	340	290
All others	1,750	2,750	2,860	2,940	2,980	2,760	2,840	3,040	3,100	3,110	3,010	3,190	3,430	3,420	3,430	3,300	3,390	3,380	3,200	3,040	3,090

*Revised to be consistent with estimates derived from the 2010 Census (U.S. Census Bureau, 2011).

**Revised to show the impact of the updated methodology.

***Estimates are not available.

Notes: Detail may not sum to totals because of rounding. Estimates shown for Colombia 2000–2013, Brazil 2010–2015, and Venezuela 2007–2015 are approximations based on historical estimation and project notes. The revised 2018 estimate and the 2019–2020 and 2022 estimates for China include Hong Kong and Macau, whereas the earlier estimates did not. Estimates for 2021 are not available.

Source: Office of Homeland Security Statistics.

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