How Immigrants and Their U.S.-Born Children Fit into the Future U.S. Labor Market

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Executive Summary

As the U.S. economy has transformed from being heavily industrial to mostly service and knowledge based in the past four decades, demand has grown for higher-skilled and more highly educated workers. Long gone are the days when having a high school diploma was enough to support a family. Postsecondary credentials such as college degrees and professional certifications offer pathways to better-paying and higher-quality jobs and function as a protective factor during economic crises. And despite provocative debates about the value of a college education, recent employment projections show that demand for well-educated workers will continue to grow in the next decade: while 62 percent of U.S. adults had postsecondary education or training in 2023, 72 percent of U.S. jobs in 2031 will require this level of education or training.

This report examines the projected educational demands of future U.S. jobs and how well the education and training of today's workers meets those demands. It focuses on the country's 47.6 million immigrant-origin workers, who make up a growing share of the country's workforce—rising from 19 percent in 2000 to 29 percent in 2023. This population consists of immigrants and their U.S.-born children (often referred to as the first and second immigrant generations). The report compares these trends in the immigrant-origin population with those among U.S.-born adults with U.S.-born parents (the third-and-higher generation). To do so, Migration Policy Institute researchers analyzed data from the U.S. Census Bureau's Current Population Survey, the most recent occupational projections from the U.S. Bureau of Labor Statistics, and projections of the future educational requirements of U.S. jobs developed by the Georgetown University Center on Education and the Workforce.

While 62 percent of U.S. adults had postsecondary education or training in 2023, 72 percent of U.S. jobs in 2031 will require this level of education or training.

The report's key findings include:

► **With U.S. birth rates falling, the immigrant-origin population has been a vital source of growth for the U.S. population in the past two decades.** Without immigrants and their U.S.-born children, the prime working-age population (ages 25–54) would have shrunk by more than 8 million people and the population of children and young adults under age 24 would have shrunk by more than 5 million people between 2000 and 2023.

► **Immigrants and their U.S.-born children accounted for all U.S. civilian labor force growth in the past two decades.** Immigrant-origin persons contributed more to the growth of the civilian labor force (102 percent) than to the growth of the overall U.S. population (62 percent). This is in part due to their higher labor force participation rates, with particularly high participation rates among immigrant men and rising rates among immigrant women.

► **Immigrant-origin workers are already an important part of the U.S. workforce across occupations and skill levels.** In 2023, the country's 47.6 million immigrant-origin workers represented 29 percent of all U.S. workers (age 18 and older), but they made up 38 percent of workers

in science, technology, engineering, and mathematics (STEM) occupations, 36 percent of workers in food and personal services, and 34 percent of workers in both health-care support and blue-collar occupations. These four occupational clusters are important as they are projected to grow within the 2022–32 decade.

► **Some immigrant-origin adults are well-positioned to participate in a future labor market that will require a higher level of education and skills.** As of 2023, 75 percent or more of second-generation Asian American and Pacific Islander, Black, and White adults had at least some postsecondary education (some college attendance, an associate's degree, or a bachelor's or higher degree)—a share that exceeds the projection that 72 percent of workers will need this level of education in the future U.S. economy. In contrast, less than 60 percent of Latino adults across immigrant generations and 62 percent of Black immigrants had postsecondary education.

► **Even occupations that have long employed large shares of people without postsecondary education and training (such as health-care support, food and personal services, and some blue-collar jobs) will require higher levels of education in the next decade, increasing the need for upskilling efforts.** Among the 29.8 million immigrant-origin adults with no postsecondary education or training, many are first-generation immigrants who would need to obtain a high school diploma or its equivalent before considering postsecondary options. Additionally, more than 6 million immigrant-origin students are currently enrolled in colleges and universities, many of whom will need to graduate to obtain the benefits of a college education. At the same time, some adults with a college-level education may need assistance converting their international credentials and experience so they will be valued and recognized in the U.S. labor market.

To support the ongoing growth of the U.S. economy, many workers will need to upskill or retrain to acquire in-demand credentials and competencies, or strengthen their general skills and digital literacy. Such efforts could include policies and programs to reduce barriers that affect all workers seeking to increase their skills—including financial strains and family pressures. At the same time, immigrant-origin workers in particular would benefit from assistance with recognition of the credentials and skills they gained abroad and access to quality English language and literacy instruction. With growing numbers of U.S. immigrants holding provisional (liminal) legal statuses that do not offer a path to permanent resident status (such as Deferred Action for Childhood Arrivals, Temporary Protected Status, and various forms of humanitarian parole), Congress could also consider creating ways for them to transition to a more stable status in order to encourage immigrant workers and their employers to invest in upskilling, benefitting both the national and local economies.

To support the ongoing growth of the U.S. economy, many workers will need to upskill or retrain to acquire in-demand credentials and competencies, or strengthen their general skills and digital literacy.

1   Introduction

The U.S. economy—like economies around the world—is in a period of rapid change. Population aging, the rise of new technologies, the push toward green jobs, and major government investments, alongside large and diverse immigration flows, are reshaping the demand for and supply of workers. These megatrends affect the opportunities available to U.S. workers—U.S. and foreign born alike—and the skills required to navigate the U.S. labor market.

This report explores the role of immigrant-origin workers (that is, immigrants and their U.S.-born children) in the evolving U.S. workforce. It seeks to answer several questions:

► How have the U.S. immigrant-origin population and its labor force participation rates changed over the past twenty years?

► Which jobs are projected to grow over the next decade and to what extent are immigrant-origin workers employed in them?

► What are the projected educational requirements of key occupations, and what do those projections suggest about workforce development and training needs?

This analysis considers recent and future trends for immigrants (the first generation), U.S.-born children of immigrants (the second generation), and U.S.-born individuals with U.S.-born parents (the third-and-higher generation). In doing so, the report makes the following contributions to conversations about the future of work in the United States: 1) it offers historical perspective and analysis of the most recent data on population and labor force trends, disaggregating in particular, by immigrant generation; 2) it examines immigrant-origin adults' educational attainment in the occupations where they are concentrated and that are projected to grow; and 3) it sheds some light on the characteristics of recently arrived immigrants and what they mean for new arrivals' integration.

To explore these questions, the report employs data from three primary sources: data on demographic and labor force trends from the U.S. Census Bureau's Current Population Survey; projections of the future growth of different occupational groups from the U.S. Bureau of Labor Statistics; and projections of the future educational requirements of U.S. jobs from the Georgetown University Center on Education and the Workforce. (See Box 1 for additional details on these data sources and definitions of key terms.)

BOX 1
Key Data Sources and Definitions

Data Sources

Demographic and labor force trends. The Current Population Survey (CPS) March Annual Social and Economic Supplement (ASEC) offers consistent data over time on a representative sample of U.S. residents. The survey enables researchers to track demographic and labor force trends during the study period (2000 to 2023) and to disaggregate these trends by immigrant generation and other characteristics.

Employment projections. The U.S. Bureau of Labor Statistics (BLS) publishes projections of changes in employment, by occupational group and by occupation. The data allow researchers to explore likely changes in employment between 2022 and 2032.

Future educational requirements. The Georgetown University Center on Education and the Workforce has developed projections related to the education requirements of future jobs. To do so, the center used three main data sources: data on the highest education level and occupation of U.S. workers from the CPS; data on future Gross Domestic Product (GDP) growth from IHS Markit; and estimates of changes in occupational distribution over time from Lightcast.

Key Definitions

The immigrant-origin population. This population consists of two groups: 1) Immigrants (i.e., the first immigrant generation) are persons who were not U.S. citizens at birth. Immigrants include naturalized U.S. citizens, lawful permanent residents (also called green-card holders), refugees and asylees, certain legal nonimmigrants (including those on student, work, or other temporary visas), and persons residing in the country without authorization. 2) U.S.-born individuals with one or more immigrant parents (i.e., the second generation).

The third-and-higher generation. This population consists of persons born in the United States to only U.S.-born parents.

Occupational groups. For the discussion of future educational requirements by occupation, Migration Policy Institute (MPI) researchers used the same occupational groupings as the Georgetown University research team that developed the projections on which this analysis is based. These groupings divide the occupations available in the CPS data into nine broad clusters: blue collar;* sales and office support; food and personal services; health-care support; managerial and professional office; health-care professional and technical occupations; science, technology, engineering, and mathematics (STEM) and social sciences; education; and community services and arts. More information on these occupational clusters, including the types of occupations that fall within each, is shown in Table 1.

* Blue-collar occupations refer to those in production, construction, agriculture, and transportation (e.g., mechanics, electricians, and construction workers). Defining features of occupations in this group include that they involve routine manual tasks, performed largely by middle- and low-skilled workers who often gain work experience on the job. For more, see Daron Acemoglu and David Autor, "Skills, Tasks and Technologies: Implications for Employment and Earnings," *Handbook of Labor Economics* 4b (2011): 1043–1171; Pinnacle Career Institute, "What Is White-Collar vs. Blue-Collar?" accessed January 9, 2024.
Sources: For additional information about the CPS, see U.S. Census Bureau, "Annual Social and Economic Supplements," updated September 5, 2023. For additional information about BLS employment projections, see BLS, "Employment Projections," accessed September 30, 2023. For additional information about the Georgetown University Center on Education and the Workforce's projections, see Anthony P. Carnevale, Nicole Smith, Martin Van Der Werf, and Michael C. Quinn, *After Everything: Projections of Jobs, Education, and Training Requirements through 2031* (Washington, DC: Georgetown University, Center on Education and the Workforce, 2023).

2   Megatrends Affecting the U.S. Economy

The U.S. population is aging as a result of birth rates that have fallen below replacement level. By 2030, the share of the population age 65 and older is projected to rise to almost 21 percent, surpassing the share of the population under age 18.[1] Falling birth rates also mean that U.S. population growth, and by extension U.S. labor force growth, is slowing. In this context, immigration and the birth of children in the United States to immigrant parents are key to sustaining the growth of the country's younger population. In fact, immigrants and their U.S.-born children were already responsible for all growth in the under-55 population between 2000 and 2023.[2]

The skill levels of the immigrants driving these demographic trends in recent years have varied widely. Take for example the three national-origin groups that contributed the most to the growth of the foreign-born population between 2020 and 2023: Mexicans, Venezuelans, and Indians. The share of recently arrived immigrants with a four-year college degree ranged from 17 percent for immigrants from Mexico to 45 percent for those from Venezuela and 93 percent for those from India.[3]

Immigrants and their U.S.-born children were already responsible for all growth in the under-55 population between 2000 and 2023.

Recent immigrants also hold a mix of legal statuses. Almost 5.4 million visas were issued to migrants to enter the United States in fiscal years (FYs) 2021–23 as lawful permanent residents, refugees, or on longer-lasting temporary visas, such as the H-1B visa for high-skilled specialty workers.[4] More than 1 million more entered the country between 2021 and early 2024 through various humanitarian parole programs. These parolees join the country's growing population of people who hold some kind of provisional or liminal legal status—such as Deferred Action for Childhood Arrivals (DACA) and Temporary Protected Status (TPS)—that confers the right to work but not a clear path to permanent status.[5] As of early 2024, there were more than 2.6 million liminal status holders in the country (see Appendix Table A–1 for data on this population). The precarious status of these millions of migrants raises questions about what roles they are playing in the U.S.

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1   Table 2 (Projected Population by Age Group and Sex) from U.S. Census Bureau, "2023 National Population Projections Tables: Main Series," updated October 31, 2023.

2   The number of first- and second-generation individuals (immigrants and their U.S.-born children) under age 55 grew by 26.6 million between 2000 and 2023, while the number of third-and-higher generation individuals (U.S.-born persons with only U.S.-born parents) under age 55 shrank by 13.3 million. Migration Policy Institute (MPI) analysis of data from the U.S. Census Bureau's Current Population Survey (CPS) March Annual Social and Economic Supplement (ASEC), 2000 and 2023.

3   These figures refer to immigrant adults who arrived between 2020 and 2023, who were ages 18 and older, and who were not enrolled in high school at the time of the CPS survey. For comparison, the share of adults with a bachelor's degree or higher was 36 percent among both all immigrant and U.S.-born adults, and it was 41 percent among all recently arrived immigrant adults. MPI analysis of CPS January–October 2023 monthly data.

4   This figure is based on analysis of the number of immigrant and selected nonimmigrant visas (CW, E, F, H-1B, H-3, H-4, I, J, K, L, M, O, P, Q, R, and TN visas) issued by the U.S. Department of States in fiscal years 2021–23 and the number of refugees admitted through the U.S. Refugee Admissions Program. See Tables I and XV(A) from U.S. Department of State, *Report of the Visa Office 2023* (Washington, DC: U.S. Department of State, 2024); U.S. Department of State, Bureau of Population, Refugees, and Migration, "Refugee Admissions Report," accessed March 15, 2024.

5   This report uses the terms "provisional" and "liminal" status interchangeably to refer to statuses that grant the temporary right to remain in the United States and often to work legally, but do not create any direct path to permanent residence. Such statuses are provisional in the sense that they could be rescinded through executive or legal action.

labor force and whether and how they, governments, and their employers are investing in their skills and training.

Another major trend shaping the workforce is the adoption of various forms of automation. Initial doomsday predictions suggested that automation would see robots replace human workers, particularly in lower- or middle-wage jobs that involve repetitive tasks. These initial expectations did not come to pass. Later estimates suggested that automation, rather than eliminating jobs, would reshape the nature of various occupations.[6] By one prediction, 28 percent of all tasks could be automated by 2031.[7] The rise of ChatGPT and other generative artificial intelligence (AI) tools has captured significant public attention and led to new debates about the impact of new technologies on workers. Generative AI can identify patterns in large datasets and generate new content from them, with limited input from computer programmers or other professionals. While automation had earlier been projected to replace low- and middle-wage jobs, more recent predictions suggest that generative AI could broadly disrupt middle- and high-wage jobs.[8]

Major public investments in infrastructure, green jobs, and semiconductor production are also transforming the U.S. labor market. The $1.2 trillion *Infrastructure Investment and Jobs Act* of 2021 focused on rebuilding the country's roads and bridges, high-speed internet, and charging stations for electric vehicles, among other initiatives.[9] The 2022 *Inflation Reduction Act* will leverage $370 billion in incentives and grants for green energy projects, meant to stimulate investments in electric vehicles, renewable energy production, and efforts to increase resilience to climate change.[10] Finally, the $280 billion *Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act* of 2022 funds scientific research and development for leading-edge technologies and provides investments, subsidies, and tax credits to expand domestic microchip production.[11] These massive infusions of public dollars have the potential to greatly increase the number of jobs and provide workforce development and training across a range of low- to high-skilled occupations.[12] The White House has touted growth in construction jobs since the infrastructure bill's passage, noting that construction employment now exceeds its pre-Great Recession high, and has pointed to strong growth in clean energy jobs across U.S. states.[13]

But while large-scale public investments expand demand for workers, labor force participation rates have fallen over the past twenty years, slowing the U.S. workforce's growth. The U.S. labor force participation rate has been on an overall decline since the recession of 2001, falling from 67 percent in early 2001 to less

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6   See, for example, Mark Muro, Robert Maxim, and Jacob Whiton, *Automation and Artificial Intelligence: How Machines Are Affecting People and Places* (Washington, DC: Brookings Institution, 2019); Automation Doesn't Just Create or Destroy Jobs — It Transforms Them," *Harvard Business Review,* November 2, 2021.

7   Anthony P. Carnevale, Nicole Smith, Martin Van Der Werf, and Michael C. Quinn, *After Everything: Projections of Jobs, Education, and Training Requirements through 2031* (Washington, DC: Georgetown University, Center on Education and the Workforce, 2023).

8   Soumik Majumder, "Top Generative AI Industry Applications: An In-Depth Look," Turing, accessed January 3, 2023; Kweilin Ellingrud et al., "Generative AI and the Future of Work in America," McKinsey Global Institute, July 26, 2023.

9   National Conference of State Legislatures, "Infrastructure Investment and Jobs Act: Implementation and Key Resources," updated October 13, 2022; *Infrastructure Investment and Jobs Act of 2021*, Public Law 117–58, *U.S. Statutes at Large* 135 (2001): 429–1467.

10   Justin Badlam et al., "The Inflation Reduction Act: Here's What's in It, " McKinsey & Company, October 24, 2022.

11   Justin Badlam et al., "The CHIPS and Science Act: Here's What's in It," McKinsey & Company, October 4, 2022.

12   Martha Ross and Mark Muro, *How Federal, State, and Local Leaders Can Leverage the CHIPS and Science Act as a Landmark Workforce Opportunity* (Washington, DC: Brookings Institution, 2024).

13   Heather Boushey, "Bidenomics in Action: Clean Energy Jobs and Investments Taking Hold Across America" (press release, The White House, October 23, 2023); Heather Boushey, "Job Gains in Construction after Two Years of the Bipartisan Infrastructure Law" (press release, The White House, November 15, 2023).

than 63 percent by the end of 2023.[14] This long-term decline has been driven primarily by falling labor force participation among men of prime working age (ages 25–54), whose participation rates fell from 96–97 percent in the 1960s to slightly less than 90 percent in 2023.[15] Women's labor force participation rates grew from the 1950s through the 1990s, topping out at 60 percent, and then declined a few percentage points to 57 percent by the end of 2023.[16] The decline in labor force participation among men of prime working age has variously been explained by the economy's shift away from traditionally male-dominant manufacturing jobs toward female-dominant service jobs, a growing educational mismatch between men out of the labor force and jobs that require higher skill levels, and declining real wages for less-educated male workers, as well as factors such as the opioid epidemic.[17] Scholars examining the phenomenon posit that physical and mental health challenges, the unattractiveness of available jobs and the wages they offer, and the availability of disability benefits may be working together to reduce men's labor force participation rates.[18]

These megatrends will strongly shape the nature of future jobs, what skills will be expected of people who fill them, and the availability of workers able to meet those requirements.

These megatrends will strongly shape the nature of future jobs, what skills will be expected of people who fill them, and the availability of workers able to meet those requirements. Immigrants and their adult U.S.-born offspring—who together comprise the immigrant-origin population this report focuses on—will be key drivers of U.S. productivity and economic progress in the years and decades to come.

3   The Growing U.S. Immigrant-Origin Population

The immigrant-origin population has long been a key component of the overall U.S. population, accounting for one in five U.S. residents in 2000. Between 2000 and 2023, the immigrant-origin population grew six times faster than the population of U.S.-born individuals with only U.S.-born parents: Whereas the immigrant-origin population grew by 63 percent (from 55.8 million to 90.8 million), the third-and-higher generation population grew by 10 percent (from 218.3 million to 239.8 million). As a result of its faster growth, the immigrant-origin share of the U.S. population increased from 20 percent in 2000 to 27 percent in 2023. The immigrant-origin share grew across all age groups except for seniors (age 65 and older), with the fastest growth among teens (ages 12–17) and among prime working-age adults (ages 25–54), as can be seen in Figure 1.

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14   Federal Reserve Bank of St. Louis's Federal Reserve Economic Data, "Labor Force Participation Rate," accessed January 3, 2024.
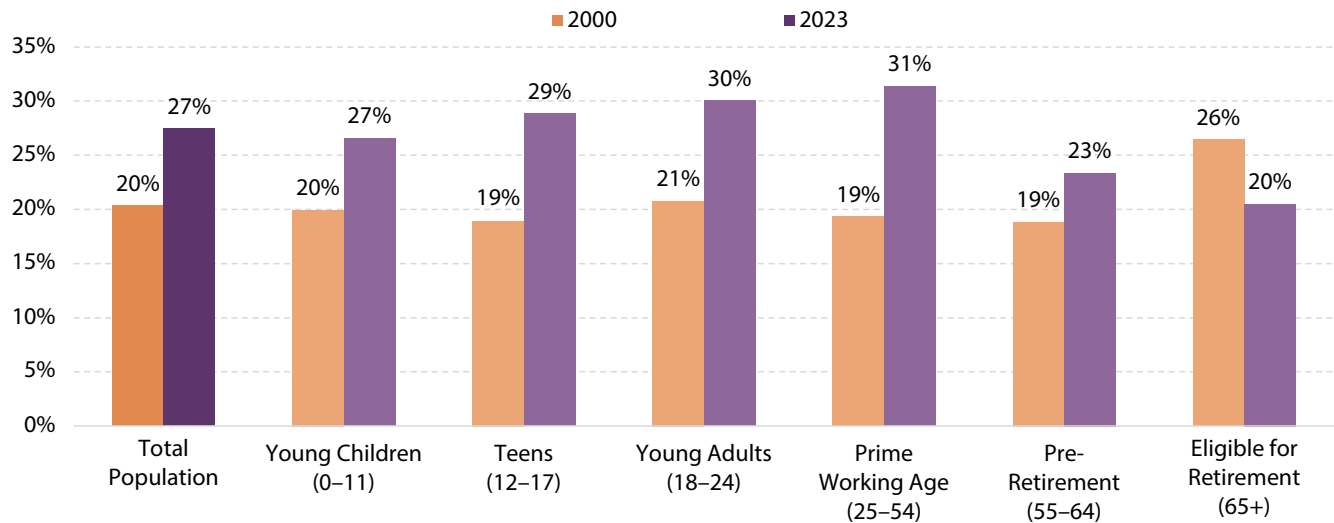
15   Organization for Economic Cooperation and Development (OECD), "Activity Rate: Aged 25-54: Males for United States," retrieved from the Federal Reserve Bank of St. Louis's Federal Reserve Economic Data, accessed January 3, 2024.

16   U.S. Bureau of Labor Statistics (BLS) employment data retrieved from the Federal Reserve Bank of St. Louis's Federal Reserve Economic Data, "Labor Force Participation Rate - Women," accessed January 3, 2024.

17   Daron Acemoglu and David Autor, "Skills, Tasks and Technologies: Implications for Employment and Earnings," *Handbook of Labor Economics* 4b (2011): 1043–1171; Leila Bengali, Evgeniya A. Duzhak, and Cindy Zhao, "Men's Falling Labor Force Participation across Generations," Federal Reserve Bank of San Francisco, October 10, 2023.

18   Eleanor Krause and Isabel Sawhill, *What We Know and Don't Know about Declining Labor Force Participation: A Review* (Washington, DC: Brookings Institution, 2017); Laura Dawson Ullrich, "Male Labor Force Participation: Patterns and Trends" (Econ Focus, District Digest, Federal Reserve Bank of Richmond, Virginia, 2021).
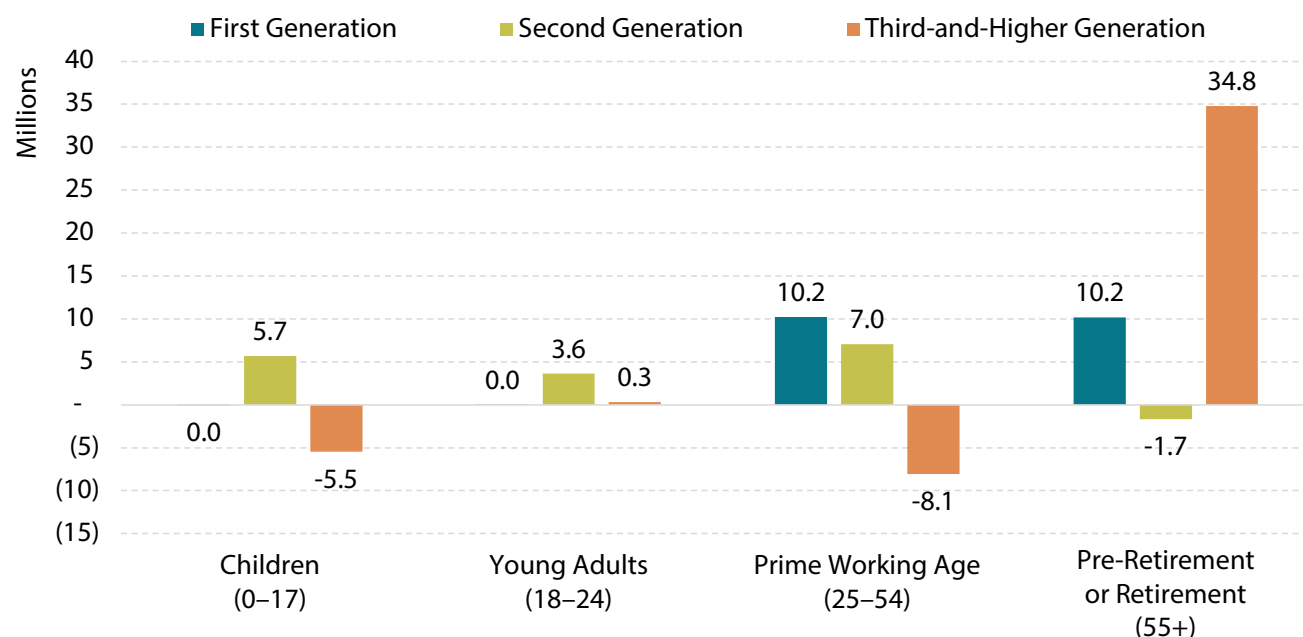
FIGURE 1
Immigrant-Origin Share of the U.S. Population, by Age Group, 2000 and 2023

Source: MPI analysis of data from the CPS March ASEC, 2000 and 2023.

The age structures of the first-, second-, and third-and-higher generations differ in ways that have important implications for labor force growth. The first-generation population experienced substantial growth among adults of prime working-age (ages 25–54) and older adults (age 55 and older) between 2000 and 2023, with each group growing by more than 10 million people (see Figure 2). The second-generation population grew among children, driving all growth in this age group. The number of second-generation young adults and adults of prime working age also rose. In the third-and-higher generation, the older adult population grew by almost 35 million people. At the same time, the number of third-and-higher-generation children and prime working-age adults shrank, and the number of young adults remained about level.

When viewed together, these trends show that all recent growth in the United States' population of adults of prime working age came from immigrants and their U.S.-born offspring. Without those two groups, the prime working-age population would have shrunk by more than 8 million people between 2000 and 2023. Similarly, the U.S. population under age 24 would have declined by more than 5 million people if not for immigrant-origin children and young adults. Immigration, then, can be seen as both expanding the potential labor force and counterbalancing the aging of the U.S. population.

FIGURE 2
Population Change in the United States, by Age Group and Immigrant Generation, 2000 to 2023
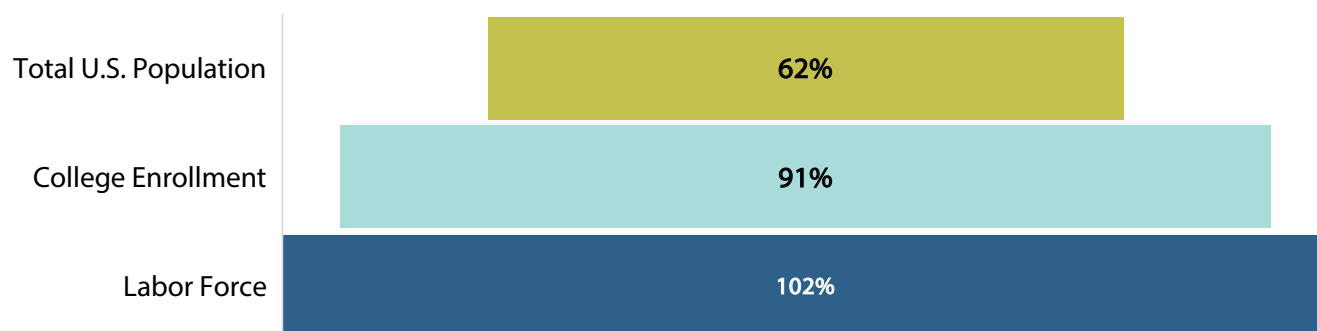

Source: MPI analysis of data from the CPS March ASEC, 2000 and 2023.

4 Immigrant-Origin Workers Driving Labor Force Growth

Just as the immigrant-origin population composes a rising share of the current and future working-age population, this population is also responsible for recent labor force growth. Looking at adults in the civilian labor force (i.e., civilian persons who are employed or actively looking for work), immigrant-origin individuals drove all labor force growth (102 percent) between 2000 and 2023.[19] Immigrant-origin adults contributed more to the growth of the U.S. civilian labor force in the past two decades than to the growth of the overall U.S. population and U.S. college enrollment (102 percent vs. 62 percent and 91 percent, respectively; see Figure 3). This growth is due not only to increases in the size of the immigrant-origin population but also to immigrant-origin adults' relatively high labor force participation rates. While the labor force participation rate of the first generation grew 2 percentage points over this 23-year period (from 75 percent to 77 percent), participation rates fell 3 percentage points among the much larger third-and-higher generation (from 80 percent to 77 percent).

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19 To calculate the share of labor force growth attributable to immigrant-origin adults, the authors calculated the growth in the number of immigrant-origin adults in the labor force between 2000 and 2023, and divided it by the total growth in the number of adults in the U.S. labor force. Because the number of third-and-higher-generation adults in the labor force shrank over this period, immigrant-origin adults accounted for more than 100 percent of labor force growth.

FIGURE 3

Percent Change in the Total U.S. Population, College Student Population, and Labor Force Attributable to the Change in the Immigrant-Origin Population, 2000 to 2023

Total U.S. Population	62%
College Enrollment	91%
Labor Force	102%

Notes: College enrollment refers to adults ages 18–54 with at least a high school diploma or equivalent who were enrolled in either a two- or four-year college or university at the time of the survey. The civilian labor force refers to persons ages 18–64 who were employed or unemployed and actively looking for work at the time of the survey.
Sources: Data on the total U.S. population and adults in the civilian labor force are from MPI analysis of data from the CPS March ASEC, 2000 and 2023. Data on U.S. college enrollment are from MPI analysis of data from the CPS October Supplement, 2000 and 2022.

Labor force participation rates vary by gender, although the gender gap narrowed in the past two decades for each immigrant generation. Historically, the gap between men's and women's labor force participation has been widest among first-generation immigrants: Immigrant women stayed home at high rates while immigrant men had the highest labor force participation rates of all groups examined here. In 2000, first-generation immigrant women had labor force participation rates of 62 percent, compared to 88 percent among first-generation men (see Figure 4). However, immigrant women's labor force participation rose to 66 percent in 2023, while immigrant men's participation held roughly steady at 87 percent, narrowing the gap between them from 26 to 21 percentage points. Immigrant women's increased participation in the labor force has been linked to the smaller size of today's immigrant families compared to those of two decades ago[20] and the rising educational attainment of immigrant women.[21]

Consistent with prior trends, first-generation men had higher labor force participation rates than other men over the 2000–23 period, holding steady at about 87–88 percent. Meanwhile, second- and third-and-higher-generation men saw declines in their labor force participation rates over this period of 3 and 5 percentage points, respectively. In contrast, the rates of second- and third-and-higher-generation women were essentially unchanged. These changes underscore the rising presence of women in the labor force overall
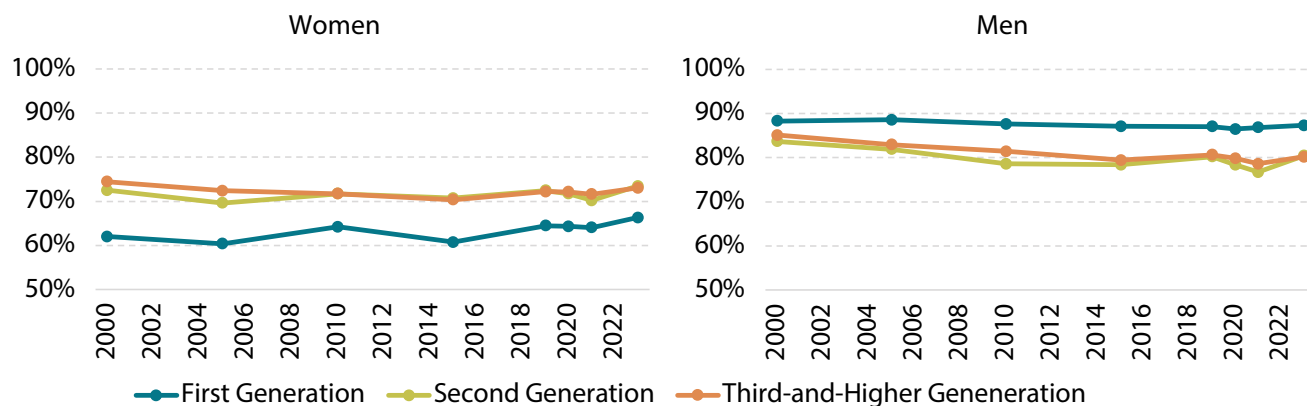
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20   Whereas the average family size of immigrant families was 3.74 in 2000, it fell to 3.54 by 2022. MPI analysis of data from the U.S. Census Bureau's American Community Survey (ACS) 2022 and CPS March ASEC, 2000 and 2023. Also see Figure 12–1 (Families by Type, Nativity of Householder, and Number of Related Children) from U.S. Census Bureau, *Profile of the Foreign-Born Population in the United States: 2000* (Washington, DC: U.S. Government Printing Office, 2001).
21   For instance, the share of high school graduates among immigrant women went up from 67 percent in 2000 to 80 percent in 2023, a gain of 13 percentage points. MPI analysis of data from the CPS March ASEC, 2000 and 2023. See Sandra Florian, Chenoa Flippen, and Emilio Parrado, "The Labor Force Trajectories of Immigrant Women in the United States: Intersecting Individual and Gendered Cohort Characteristics," *International Migration Review* 57, no. 1 (2023): 95–127.

relative to men, reflecting growth in the number of jobs in the service and public sectors, opportunities to work part time, smaller families, and women's rising education.[22]

FIGURE 4
Civilian Labor Force Participation Rates of Women and Men Aged 18 to 64, By Immigrant Generation

Source: MPI analysis of data from the CPS March ASEC, 2000–23.

5   Immigrant-Origin Workers in Occupations Projected to Grow

Given the immigrant-origin population's fast rate of growth among prime-working age adults, it should not be surprising that immigrants and their U.S.-born children are already an important component of the U.S. workforce across occupations and skill levels. In 2023, the 47.6 million immigrant-origin workers represented 29 percent of all U.S. workers ages 18 and older, up from 19 percent in 2000. But the immigrant-origin share of workers is much higher in certain occupations. For instance, immigrant-origin workers are heavily represented in the science, technology, engineering, and mathematics (STEM) and social sciences workforce. In 2023, they made up 38 percent of workers in STEM-related occupations, where college-educated workers predominate and where the median salary and wage income is $90,900 per year (see Table 1).

At the same time, immigrant-origin adults made up 36 percent of workers in food and personal services, an occupational group characterized by lower skill levels and where the median salary is $30,000. Immigrant-origin workers are also overrepresented in health-care support and blue-collar occupational groups, accounting for 34 percent of workers in each. These two occupational groups vary in terms of their gender composition and average incomes. The health-care support workforce (including home health aides and personal care aides) is overwhelmingly female (84 percent) and has a median salary of $31,200. Occupations in the blue-collar cluster are predominantly male (83 percent) and offer a higher median wage ($41,600).

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22   Anne Winkler, "Women's Labor Force Participation (Updated)," IZA World of Labor, February 2022; Alex Arnon, Aidan O'Connell, Jesús Villero, and Youran Wu, "Explaining the Rise in Prime Age Women's Employment," Penn Wharton Budget Model, University of Pennsylvania, November 27, 2023. The average size of families headed by a U.S.-born person has also declined over time, from 3.1 to 3.01 persons between 2000 and 2022. MPI analysis of data from the ACS 2022 and U.S. Census Bureau, *Profile of the Foreign-Born Population*.

TABLE 1
Number of Workers (age 18 and older) and Selected Characteristics, by Occupational Group, 2023

	Number of Workers	Median Salary*	Female Share of Workers	Share of All Workers Who Are…			
				First Generation	Second Generation	Immigrant Origin (First & Second Gen.)	Third-and-Higher Generation
All occupations	**163,826,000**	**$49,000**	**47%**	**19%**	**10%**	**29%**	**71%**
STEM and social sciences	**12,344,000**	**$90,900**	**27%**	**25%**	**13%**	**38%**	**62%**
Computer and mathematical	6,824,000	$98,000	28%	29%	13%	41%	59%
Architecture and engineering	3,622,000	$95,000	16%	19%	12%	31%	69%
Life, physical, and social sciences	1,897,000	$69,100	49%	23%	14%	37%	63%
Food and personal services	**20,776,000**	**$30,000**	**50%**	**26%**	**10%**	**36%**	**64%**
Food preparation and serving	8,083,000	$25,000	52%	25%	12%	37%	63%
Personal care and services	4,024,000	$25,000	78%	21%	12%	33%	67%
Building and grounds cleaning and maintenance	5,689,000	$28,000	41%	40%	6%	46%	54%
Protective service	2,982,000	$52,500	21%	8%	9%	17%	83%
Health-care support	**5,264,000**	**$31,200**	**84%**	**23%**	**11%**	**34%**	**66%**
Blue collar	**35,704,000**	**$41,600**	**17%**	**25%**	**9%**	**34%**	**66%**
Transportation and material moving	12,442,000	$36,000	22%	23%	11%	33%	67%
Production	8,597,000	$42,000	30%	23%	8%	31%	69%
Construction and extraction	8,770,000	$45,000	4%	33%	9%	42%	58%
Installation, maintenance, and repair	4,970,000	$53,000	4%	17%	9%	26%	74%
Farming, fishing, and forestry	925,000	$30,000	26%	40%	7%	47%	53%
Health-care professional and technical	**10,206,000**	**$70,000**	**77%**	**16%**	**11%**	**27%**	**73%**

TABLE 1 (cont.)
Number of Workers (age 18 and older) and Selected Characteristics, by Occupational Group, 2023

	Number of Workers	Median Salary*	Female Share of Workers	Share of All Workers Who Are…			
				First Generation	Second Generation	Immigrant Origin (First & Second Gen.)	Third-and-Higher Generation
Managerial and professional	**32,455,000**	**$80,000**	**46%**	**14%**	**10%**	**24%**	**76%**
Management	20,979,000	$84,000	41%	14%	9%	23%	77%
Business and financial operations	9,664,000	$70,000	55%	13%	12%	25%	75%
Legal	1,812,000	$92,000	53%	10%	11%	22%	78%
Sales and office support	**30,585,000**	**$40,000**	**61%**	**13%**	**11%**	**24%**	**76%**
Office and administrative support	16,295,000	$40,000	72%	12%	12%	24%	76%
Sales and related occupations	14,290,000	$40,000	50%	14%	11%	25%	75%
Community services and arts	**6,273,000**	**$52,000**	**57%**	**11%**	**11%**	**23%**	**77%**
Arts, design, entertainment, sports, and media	3,503,000	$53,000	47%	13%	11%	24%	76%
Community and social services	2,770,000	$52,000	70%	9%	12%	21%	79%
Education, training, and library	**10,219,000**	**$50,000**	**73%**	**12%**	**10%**	**22%**	**78%**

* Median salary refers to the total pre-tax salary and wage income of persons who worked in 2022 and reported salary or wage income in that year. The CPS March ASEC captures data on workers' wage and salary income from the prior calendar year.
Notes: The universe of employed workers excludes the self-employed, owners and partners in unincorporated firms, and household workers. The shares of workers by immigrant generation may not sum to 100 percent due to rounding.
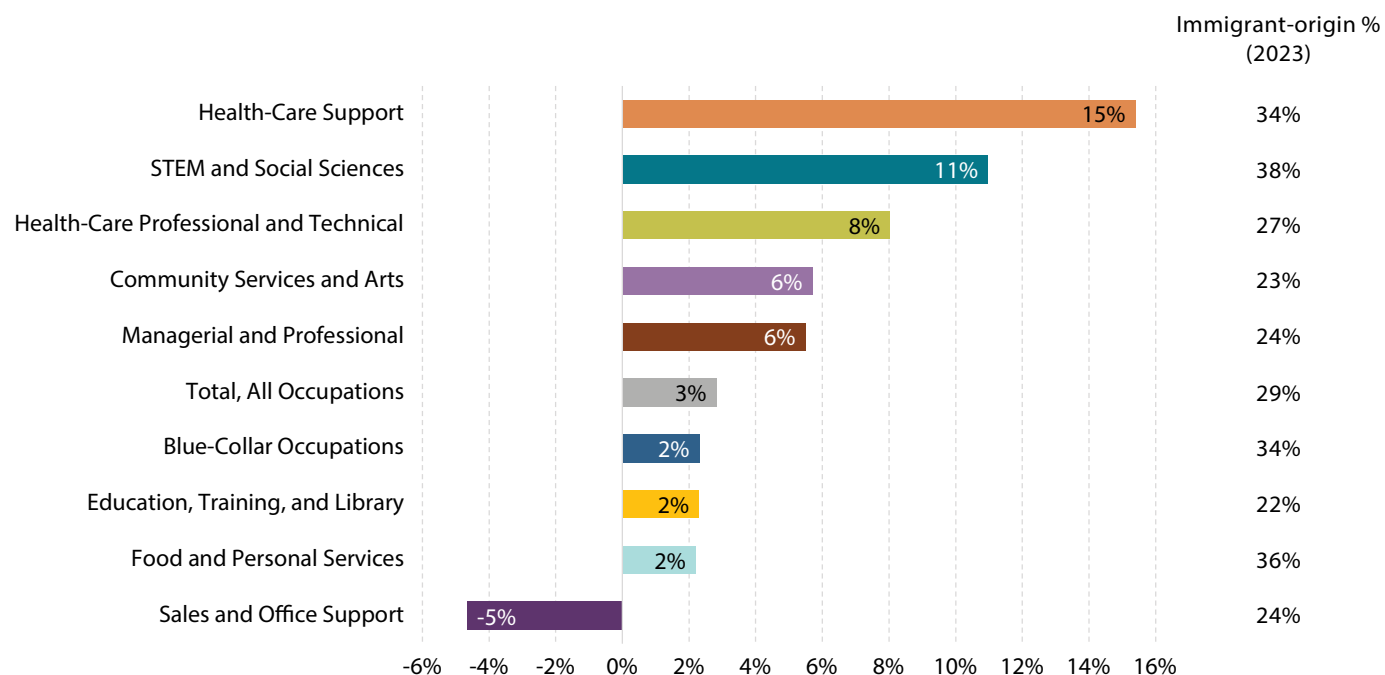Source: MPI analysis of data from the CPS March ASEC, 2023.

Collectively, these four occupational groups—STEM, food and personal services, health-care support, and blue-collar occupations—employed 45 percent of all U.S. workers and 55 percent of immigrant-origin workers in 2023. Looking to the future, the U.S. economy is projected to grow by nearly 3 percent between 2022 and 2032, adding close to 4.7 million jobs, with employment rising to 169.1 million. Between 2022 and 2032, the U.S. Bureau of Labor Statistics projects that health-care support occupations will grow most rapidly (by 15 percent), as shown in Figure 5. The United States' growing elderly population is driving demand for elder care and health-care support services. Jobs in STEM-related occupations are also expected to expand significantly, by 11 percent. The wider adoption of AI and other technologies, continuing digitalization of the U.S. economy, and the rise in cyberattacks and data breaches on U.S. businesses and governments are expected to lead to a greater demand for STEM workers in the coming years. These two

fast-growing occupational groups currently rely heavily on immigrant-origin workers: 38 percent of STEM workers and 34 percent of health-care support workers were of immigrant origins in 2023.

FIGURE 5

Projected Percent Change in the Number of Workers in Major Occupational Groups between 2022 and 2032 and the Immigrant-Origin Share of Workers as of 2023
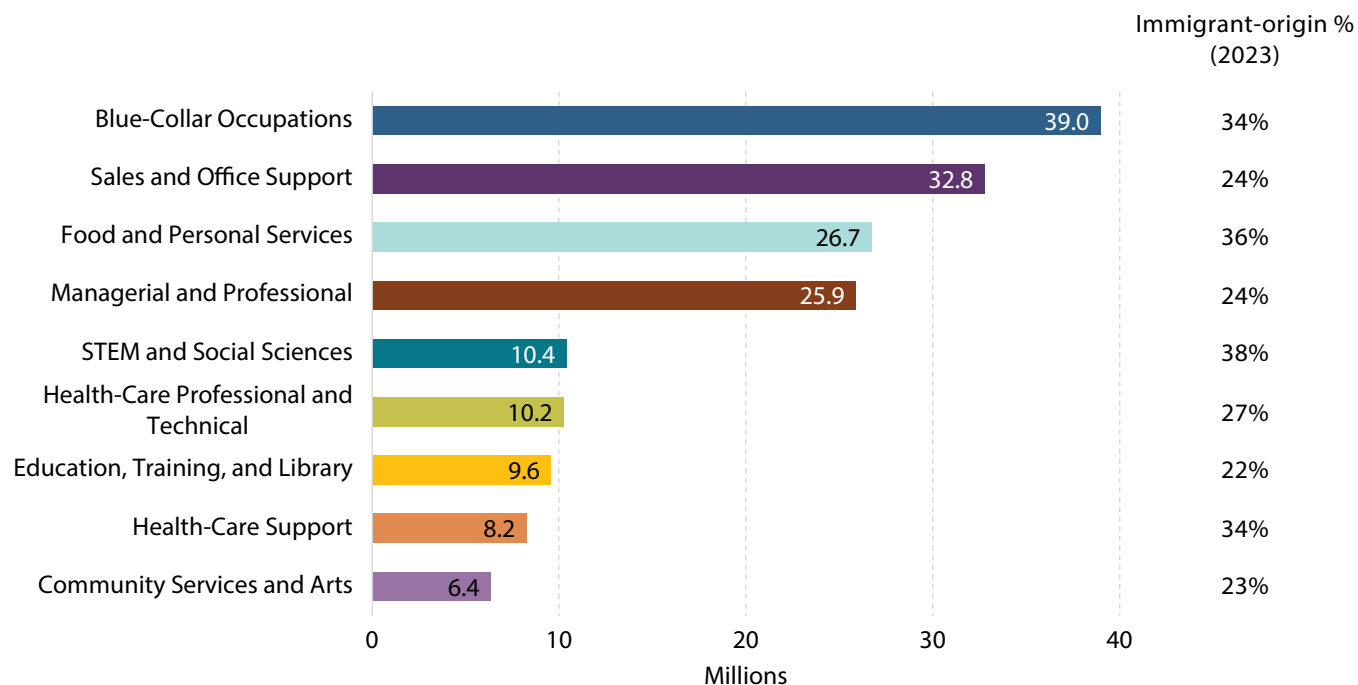

Sources: For occupational projections, see "Table 1.1 Employment by Major Occupational Group, 2022 and Projected 2032" from BLS, "Employment Projections Data Tables," accessed November 5, 2023. The immigrant-origin shares of employed U.S. workers (age 18 and older) by occupational group are from MPI analysis of data from the CPS March ASEC, 2023.

Another way to view future labor demand is to explore which occupational groups will employ the largest number of workers. Blue-collar occupations, sales and office support, and food and personal services occupations are projected to offer the most jobs in 2032 (see Figure 6), just as they offer large numbers of jobs today (see Table 1). Immigrant-origin workers are overrepresented in two of the top three groups: blue-collar and food and personal services occupations. If current trends persist, jobs of the future—expressed either in terms of the rate of employment growth or the total number of workers—will almost certainly heavily rely on immigrant-origin workers.

If current trends persist, jobs of the future ... will almost certainly heavily rely on immigrant-origin workers.

FIGURE 6

Projected Total Employment in 2032 by Major Occupational Group (in millions) and the Immigrant-Origin Share of Workers as of 2023

	Immigrant-origin % (2023)
Blue-Collar Occupations — 39.0	34%
Sales and Office Support — 32.8	24%
Food and Personal Services — 26.7	36%
Managerial and Professional — 25.9	24%
STEM and Social Sciences — 10.4	38%
Health-Care Professional and Technical — 10.2	27%
Education, Training, and Library — 9.6	22%
Health-Care Support — 8.2	34%
Community Services and Arts — 6.4	23%

Sources: For occupational projections, see Table 1.1 from BLS, "Employment Projections Data Tables." The immigrant-origin shares of employed U.S. workers (age 18 and older) by occupational group are from MPI analysis of data from the CPS March ASEC, 2023.

6   U.S. Adults' Skills Today versus Those Expected in the Future

Even before the COVID-19 pandemic, U.S. employers regularly noted a mismatch between the skills they needed to expand their businesses and those of job applicants, citing it as a barrier to being able to innovate and compete.[23] At the same time, research has demonstrated the high return on investment of higher levels of education for workers and their families in terms of economic outcomes such as employment and wages as well as noneconomic markers of well-being such as better health.[24] During the pandemic-induced recession, workers with postsecondary education and training were better able to weather labor market declines than others, in many cases by shifting to remote work.[25] Besides the benefits of higher education to individual employers and workers, structural changes over the last four decades
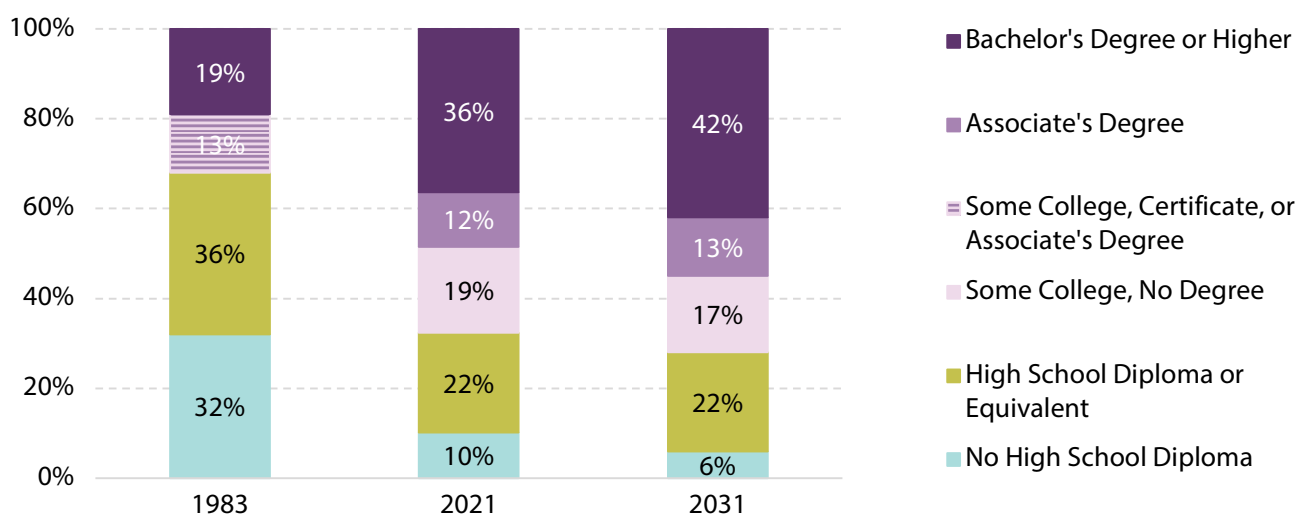
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23   Sarah A. Donovan, Adam Stoll, David H. Bradley, and Benjamin Collins, *Skills Gaps: A Review of Underlying Concepts and Evidence* (Washington, DC: Congressional Research Service, 2022).

24   Candace Hester and Sami Kitmitto, *The Relative Returns to Credit- and Non-Credit-Bearing Credentials* (Washington, DC: American Institutes for Research, 2020); OECD, *Skills Matter: Further Results from the Survey of Adult Skills* (Paris: OECD Publishing, 2016).

25   For instance, MPI analysis of 2020–22 monthly data from the CPS showed that degree and nondegree postsecondary credential holders had higher employment rates and average weekly wages compared to their peers without such credentials. See also Matthew Dey, Harley Frazis, Mark A. Loewenstein, and Hugette Sun, "Ability to Work from Home: Evidence from Two Surveys and Implications for the Labor Market in the COVID-19 Pandemic," *BLS Monthly Labor Review*, June 2020; Vasil Yasenov, "Who Can Work from Home?" (discussion paper no. 13197, Institute of Labor Economics, Bonn, Germany, April 2020).

have moved the U.S. economy toward skilled labor and away from unskilled labor. As the U.S. economy has transitioned from one that is heavily industrial to one that is mostly service oriented and knowledge based, the share of jobs that require postsecondary education and training (e.g., some college attendance,[26] an associate's degree, or a bachelor's degree or higher) more than doubled from 32 percent in 1983 to 68 percent in 2021 (see Figure 7).[27]

FIGURE 7
Educational Requirements of U.S. Jobs, 1983, 2021, and 2031

Notes: Before 1992, the education variable in the CPS did not distinguish between "some college or certificate" and "associate's degree," so those groupings were combined into one for the 1983 column in this figure. The values within each column may not sum to 100 percent due to rounding.
Source: Adapted from Carnevale, Smith, Van Der Werf, and Quinn, *After Everything*, Figure 2 and Table 6.

Projections by Georgetown University's Center on Education and the Workforce indicate that by 2031, 72 percent of U.S. jobs will require postsecondary education or training, including 42 percent that will require at least a bachelor's degree (see Figure 7). The U.S. Bureau of Labor Statistics' employment projections also show that more occupations will require postsecondary education and training in the coming decade, leaving fewer opportunities for those with lower education levels.[28]

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26   For the purposes of this analysis, MPI researchers followed the classification of educational attainment offered by Carnevale, Smith, Van Der Werf, and Quinn, *After Everything*. This classification includes the "some college, no degree" category in the broader "postsecondary education/training" category. MPI analysis of data from the CPS 2023 found that 29 percent of U.S. adults who reported this level of educational attainment were still enrolled in college, while the remaining 71 percent were not. There is no firm consensus in the higher education literature on the economic value of having an incomplete college degree. Some researchers find that it offers no labor market advantage compared to having a high school education only, while others find that the employment and earnings of adults with an incomplete college degree are higher than those who never attended college. See Matt Giani, Paul Attewell, and David Walling, "The Value of an Incomplete Degree: Heterogeneity in the Labor Market Benefits of College Non-Completion," *The Journal of Higher Education* 91, no. 4 (2020): 514–39; Changhwan Kim and Christopher R. Tamborini, "Are They Still Worth It? The Long-Run Earnings Benefits of an Associate Degree, Vocational Diploma or Certificate, and Some College," *The Russell Sage Foundation Journal of the Social Sciences* 5, no. 3 (2019): 64–85.
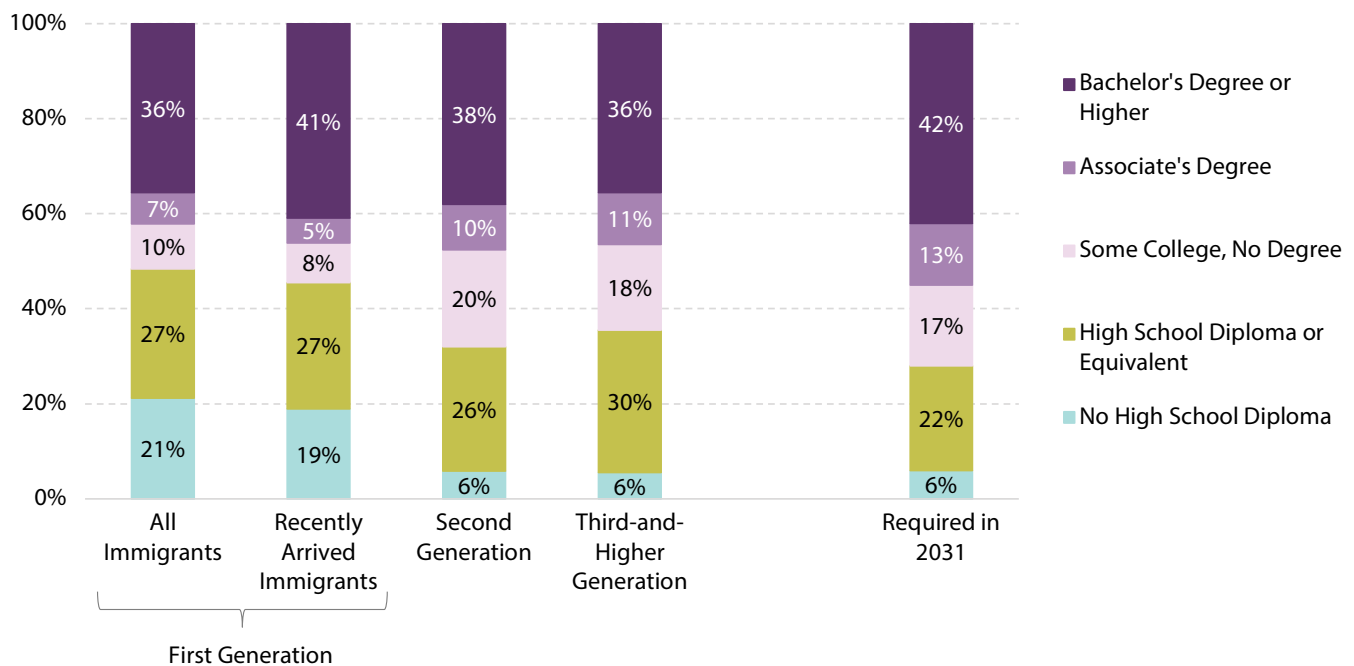
27   Note that the figure for 2021 (68 percent) is based on the underlying dataset and, thus, slightly different to what would be a total of the rounded figures from Figure 7. See Carnevale, Smith, Van Der Werf, and Quinn, *After Everything*.

28   BLS, "Employment Projections — 2022–2032" (news release, September 6, 2023); Carnevale, Smith, Van Der Werf, and Quinn, *After Everything*.

Many immigrant-origin and other U.S. adults are well-prepared to meet the educational and skill demands of future jobs, but some may face challenges. Data suggest that *recently arrived* first-generation immigrants (i.e., those who entered the United States between 2020 and 2023) may be among those best prepared for the high four-year college attainment requirements of future jobs: as of 2023, 41 percent had a bachelor's degree or higher, a level almost equal to the 42 percent expected for future job holders (see Figure 8). Among other groups—including the overall first generation (all immigrants) as well as the second and third-and-higher generations—the share with at least a bachelor's degree was 36–38 percent in 2023, somewhat lower than the projected 42 percent needed.

FIGURE 8

Educational Attainment of All U.S. Adults (age 18 and older) in 2023, by Immigrant Generation and Recency of Arrival, versus Projected Educational Requirements of U.S. Jobs in 2031

Notes: This figure excludes adults enrolled in high school at the time of the survey in 2023. The values within each column may not sum to 100 percent due to rounding.
Sources: Estimates of the level of educational attainment of U.S. adults by immigrant generation are based on MPI analysis of data from the CPS March ASEC, 2023. Estimates for recent arrivals are based on MPI analysis of monthly data from the CPS January–October 2023. Projections for the educational attainment requirements of future U.S. jobs are from Carnevale, Smith, Van Der Werf, and Quinn, *After Everything,* Table 6.

However, having a college degree—particularly one that was earned abroad—does not necessarily translate into a high-skill job.[29] MPI research has shown that immigrant college graduates are more likely to be underemployed (i.e., to be unemployed or employed in jobs requiring no more than a high school education) than their U.S.-born counterparts, and recently arrived immigrants are more likely to experience underemployment than immigrants who have been in the country for longer.[30]

At the other end of the educational spectrum, projections indicate that the jobs of the future will offer fewer opportunities for people without a high school education (see Figure 8). In 2031, only 6 percent of jobs will not require a high school diploma or its equivalent. But as of 2023, 21 percent of immigrants overall (and 19 percent of recent arrivals) did not have a high school education. These adults, like the 6 percent of U.S.-born adults with less than a high school education, will face steeper barriers to better-paid jobs as more employers prioritize postsecondary education and training.

Projections indicate that the jobs of the future will offer fewer opportunities for people without a high school education.

The current educational attainment of second-generation adults aligns most closely with the levels of education likely to be expected in future jobs. In 2023, 68 percent had some form of postsecondary training or education—a share that exceeds that of the third-and-higher generation (64 percent) and first generation (52 percent)[31] and that is only somewhat lower than the 72 percent expected for the future economy (see Figure 8).

The fit between current education levels and future needs is closer for younger adults (ages 18–44), the population that will remain in the prime working-age group within the next decade. As of 2023, 56 percent of the first-generation adults, 66 percent of the third-and-higher generation, and 68 percent of the second-generation adults in this age group had at least some postsecondary education (see Figure 9). However, even in this age group, 17 percent of first-generation immigrants lacked a high school diploma.
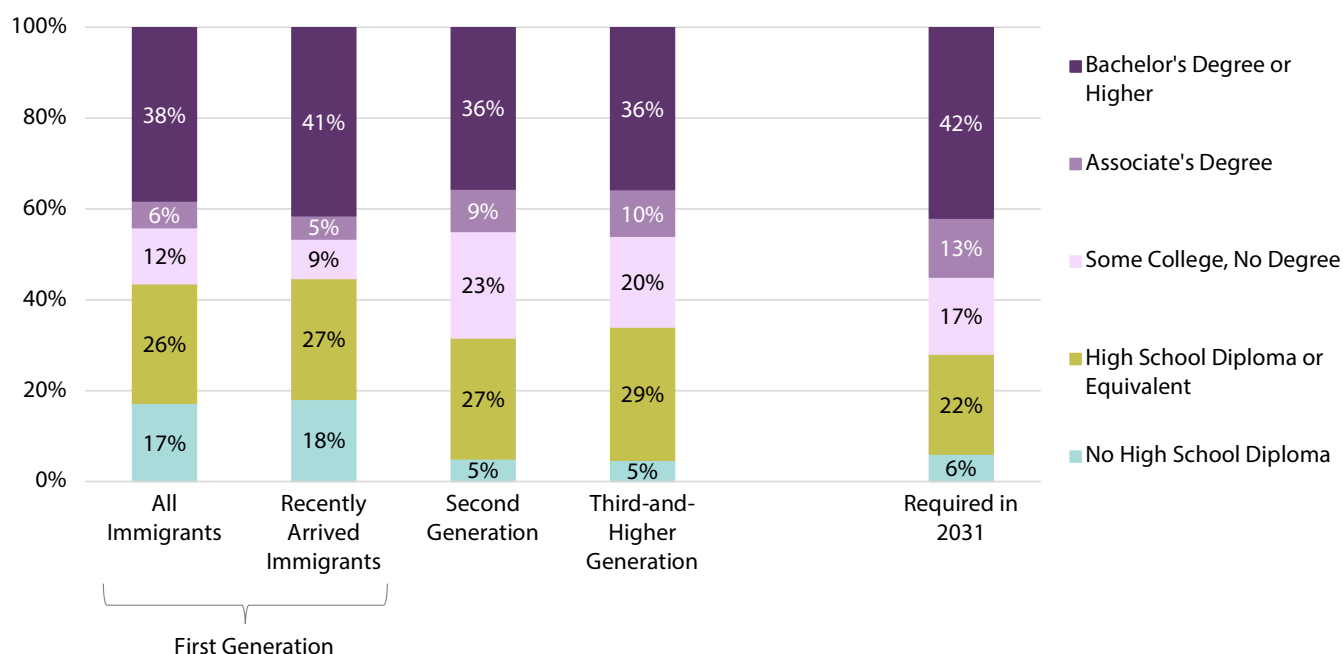
29   OECD and European Commission, *Indicators of Immigrant Integration 2023: Settling In* (Paris: OECD Publishing, 2023); Jeanne Batalova and Michael Fix, *Tapping the Talents of Highly Skilled Immigrants in the United States: Takeaways from Experts Summit* (Washington, DC: MPI, 2018).

30   Jeanne Batalova and Michael Fix, *Leaving Money on the Table: The Persistence of Brain Waste among College-Educated Immigrants* (Washington, DC: MPI, 2021).

31   Note that these figures for 2023 (64 and 52 percent) are based on the underlying dataset and, thus, slightly different to what would be a total of the rounded figures from Figure 8.

FIGURE 9

Educational Attainment of U.S. Adults Ages 18 to 44 in 2023, by Immigrant Generation and Recency of Arrival, versus Projected Educational Requirements of U.S. Jobs in 2031

Notes: This figure excludes adults enrolled in high school at the time of the survey in 2023. The values within each column may not sum to 100 percent due to rounding.
Sources: Estimates of the level of educational attainment of U.S. adults by immigrant generation are based on MPI analysis of data from the CPS March ASEC, 2023. Estimates for recent arrivals are based on MPI analysis of monthly data from the CPS January–October 2023. Projections for the educational attainment requirements of future U.S. jobs are from Carnevale, Smith, Van Der Werf, and Quinn, *After Everything,* Table 6.

Education levels vary by race and ethnicity as well as generation. Latino first-generation immigrants are likely to face the longest road to postsecondary training or educational attainment as, in 2023, 36 percent did not have a high school diploma (see Table 2). Latino adults of all immigrant generations as well as first- and third-and-higher generation Black adults also had lower-than-average levels of postsecondary educational attainment. For example, 55–56 percent of second- and third-and-higher-generation Latinos had some form of postsecondary education in 2023, compared to 62 percent for all U.S. adults. In contrast, more than 75 percent of Asian American and Pacific Islander (AAPI), White, and Black second-generation adults had that level of education as of 2023, as did more than 70 percent of AAPI and White first-generation immigrant adults.

Overall, the population of 29.8 million immigrant-origin adults without postsecondary training and education is made up mostly of members of racial and ethnic minorities, highlighting both the racial equity and immigrant integration imperatives for addressing education and training gaps. In 2023, 94 percent of immigrant adults without a high school diploma were not White. Of immigrants without a high school diploma, 80 percent were Latinos, 11 percent were AAPI, and 4 percent were Black (see Appendix Table A–2). Non-White adults also made up the overwhelming majority (81 percent) among second-generation adults without a high school diploma.

TABLE 2

Educational Attainment of U.S. Adults (age 18 and older), by Immigrant Generation and Race/Ethnicity, 2023

	Number of Adults	No High School Diploma	High School Diploma or Equivalent	Some College, No Degree	Associate's Degree	Bachelor's Degree or Higher
Projected educational needs (2031)	–	**6%**	**22%**	**17%**	**13%**	**42%**
Educational attainment (2023)						
All U.S. adults	**253,938,000**	**8%**	**29%**	**17%**	**10%**	**36%**
First generation	45,605,000	21%	27%	10%	7%	36%
Second generation	24,180,000	6%	26%	20%	10%	38%
Third-and-higher generation	184,153,000	6%	30%	18%	11%	36%
Latino adults	**44,064,000**	**23%**	**34%**	**16%**	**8%**	**20%**
First generation	21,188,000	36%	33%	9%	5%	16%
Second generation	10,415,000	9%	35%	23%	11%	22%
Third-and-higher generation	12,461,000	10%	35%	21%	11%	23%
Black adults	**32,045,000**	**8%**	**35%**	**20%**	**11%**	**27%**
First generation	4,262,000	8%	30%	16%	10%	36%
Second generation	1,596,000	4%	21%	26%	11%	38%
Third-and-higher generation	26,187,000	9%	36%	20%	11%	24%
Asian American and Pacific Islander adults	**18,736,000**	**7%**	**18%**	**12%**	**7%**	**57%**
First generation	12,388,000	9%	18%	8%	6%	59%
Second generation	4,496,000	3%	15%	19%	7%	55%
Third-and-higher generation	1,852,000	2%	24%	19%	9%	45%
White adults	**156,134,000**	**5%**	**28%**	**17%**	**11%**	**40%**
First generation	7,665,000	7%	23%	10%	9%	51%
Second generation	7,583,000	3%	21%	17%	9%	49%
Third-and-higher generation	140,886,000	5%	28%	17%	11%	39%

Notes: This table excludes adults enrolled in high school at the time of the survey. Latinos can be of any race. The other racial groups refer to non-Latinos. Black refers to non-Latino persons who reported their race as "Black alone" or "Black in combination with other race." Asian American and Pacific Islander (AAPI) refers to non-Latino persons who reported their race as "AAPI alone" or "AAPI in combination with other race," except Black. White refers to non-Latino persons who reported their race as "White alone." The remainder is a group called "other races" that is too small to display; it includes non-Latino people who reported their race as "American Indian alone," "American Indian and White," or unspecified multiracial group. The shares by educational attainment may not sum to 100 percent due to rounding.
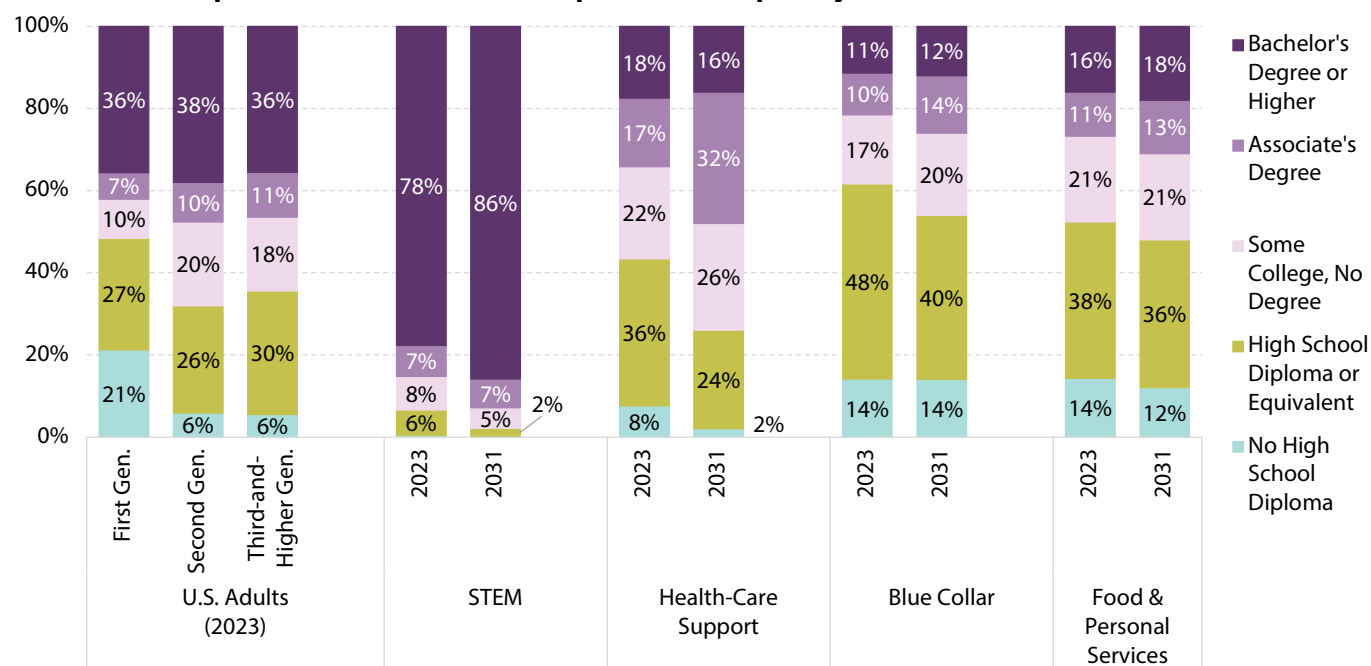Sources: MPI analysis of data from the CPS March ASEC, 2023. Projections for the educational attainment requirements of future U.S. jobs are from Carnevale, Smith, Van Der Werf, and Quinn, *After Everything,* Table 6.

7   The Educational Requirements of Jobs of the Future

How, then, do the educational credentials of immigrant-origin adults compare to the projected human capital requirements of future jobs in the four occupational clusters discussed above that employ many immigrant-origin workers and are projected to grow into the future: STEM, health-care support, blue-collar, and food and personal services occupations? As Figure 10 shows, the proportion of workers with postsecondary education and training is projected to rise within each occupational cluster between 2023 and 2031. One particularly striking projected increase is in the share of health-care support occupations in which workers are expected to have some college or an associate's degree: While in 2023, 39 percent of workers in these occupations held an associate's degree or had attended at least some college, that share is projected to rise to 58 percent in 2031.

FIGURE 10

Educational Attainment of All U.S. Adults (age 18 and older) in 2023, by Immigrant Generation, versus Educational Requirements of Selected Occupational Groups Projected for 2031*

* In this figure, each occupational cluster's educational levels for 2023 are based on the educational attainment of workers in these clusters in that year.
Note: The values within each column may not sum to 100 percent due to rounding.
Sources: Estimates of the level of educational attainment of U.S. adults (age 18 and older) by immigrant generation (on the left) and of workers (age 18 and older) in four occupational clusters (on the right) are based on MPI analysis of data from the CPS March ASEC, 2023. Projections for the educational attainment requirements of the occupational clusters in 2031 are from Carnevale, Smith, Van Der Werf, and Quinn, *After Everything*, Table 6.

STEM-related occupations will tilt even further toward requiring a bachelor's or higher degree. Even though some types of work in this occupational cluster may be at risk amid the widening adoption of generative AI (e.g., some computer programmers already see ChatGPT generate code faster than they do), it is likely that it is tasks rather than entire jobs that will be replaced. At the same time, an indeterminate number of new

jobs could be created as new technologies proliferate.[32] To navigate this fast-growing but potentially volatile field, many U.S. workers would have to upskill to fill STEM jobs, given that today, only about one-third of U.S. adults have a bachelor's degree or higher. Latino immigrant-origin workers face perhaps the greatest challenge to obtaining jobs in this field, given their relatively low current rates of four-year college degree attainment (as shown in Table 2).

Health-care support occupations provide more opportunities for workers with less than a bachelor's degree. In 2031, only 16 percent of health-care support occupations are expected to require a bachelor's or higher degree, but most health-care support jobs (58 percent) will likely require either an associate's degree or some college education short of a bachelor's degree. More broadly, 98 percent will require at least a high school diploma, meaning that the 21 percent of immigrants who lack one will have a strong incentive to earn an equivalency degree if they wish to work in these jobs.

Meanwhile, both blue-collar occupations and food and personal services will continue to employ large numbers of workers without a postsecondary education. Roughly half of jobs in both occupational clusters are expected to be available to workers with at most a high school diploma. Correspondingly, many jobs within these two clusters are lower paid (e.g., farming, food preparation, and personal care services). Some are susceptible to rapid changes in economic conditions and demand (e.g., construction), while others may be at a high risk of automation (e.g., food preparation, transportation, and material-moving jobs) and the use of AI-enabled robots (e.g., assembly workers).[33] However, these two clusters are also expected to continue to offer many opportunities to workers with postsecondary training and college degrees. Jobs in these clusters requiring more education and training could offer more stable employment. For instance, expanding investments in semiconductor manufacturing will increase demand for blue-collar jobs such as semiconductor processing technicians.[34]

Expanding investments in semiconductor manufacturing will increase demand for blue-collar jobs such as semiconductor processing technicians.

8   Conclusion and Implications

Powerful forces are increasing the pace of change in the U.S. economy and labor force. The increased adoption of automation, rise of generative AI, and major public investments in construction, the green economy, and semiconductor production will reshape labor demand over the next decade. An estimated 72 percent of jobs in 2031 will require a form of postsecondary education or training—a significantly higher share than the 62 percent of U.S. adults with at least some college education in 2023. At the same time, the falling labor force participation of U.S. men, the changing educational profile of immigrant and U.S.-born workers, and the post-pandemic arrival of millions of immigrants with provisional legal statuses that do not

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32   Jacob Zinkula and Aaron Mok, "ChatGPT May Be Coming for Our Jobs. Here Are the 10 Roles that AI Is Most Likely to Replace," *Business Insider*, September 4, 2023.

33   OECD, "What Happened to Jobs at High Risk Of Automation?" (Policy Brief on the Future of Work, OECD Publishing, Paris, January 2021).

34   BLS, "Employment Projections and Occupational Outlook Handbook News Release" (news release, September 6, 2023).

offer a path to permanent U.S. residence are altering the profile of today's workers and their ability to obtain needed education and training. In determining labor force strategies for the future, policymakers, education and workforce training providers, and business leaders will need to take fully into account the immigrant-origin population.

Immigrant-origin individuals make up more than one-quarter of the U.S. population today, and this share is growing. Between 2000 and 2023, immigrant-origin individuals played a major role in driving growth in the young and prime-working age population, accounting for all growth in the U.S. population under age 55. Given falling U.S. birth rates, without immigrants and their U.S.-born children, the prime working-age population (adults ages 25–54) would have shrunk by more than 8 million people and the population of children and young adults under age 24 would have shrunk by more than 5 million people.

The presence of immigrant-origin individuals is even more prominent in the labor market, accounting for all growth in the U.S. civilian labor force between 2000 and 2023. This is due not only to their rising numbers, but also to immigrant men's high, sustained employment rates and immigrant women's increased entry into the labor market. Immigrant-origin workers were 29 percent of all workers in 2023, and they composed even higher shares of workers in several occupational groups across skill level: 38 percent of workers in STEM-related occupations, 36 percent of workers in food and personal services, and 34 percent of workers in both health-care support and blue-collar occupations. These four occupational clusters are notable because they are projected to employ large numbers of workers within the 2022–32 decade. Health-care support and STEM-related occupations are projected to see the fastest growth over the next ten years, while blue-collar and food and personal care jobs are among those projected to employ the most workers in 2032.

The presence of immigrant-origin individuals is even more prominent in the labor market ... due not only to their rising numbers, but also to immigrant men's high, sustained employment rates and immigrant women's increased entry into the labor market.

Given the key role the immigrant-origin population has played in the U.S. labor force and is projected to play in the next decades, greater research and policy attention are needed to help workers prepare to meet the education and training needs of future jobs. MPI analysis shows that some immigrant-origin adults are well-positioned to participate in a labor market that continues its shift toward requiring higher skills. For instance, among second-generation AAPI, Black, and White adults, more than 75 percent had some form of postsecondary education or training in 2023—a share that is even higher than the projection that 72 percent of workers will need this level of education in the future economy.

That said, other immigrant-origin subgroups have further to go to develop skills likely to be needed in many future jobs. Less than 60 percent of Latino adults in each generational group (first, second, and third and higher) and 62 percent of Black immigrants had postsecondary education or training in 2023. Among immigrant adults overall, 21 percent lacked a high school diploma or equivalent, which is typically a prerequisite for postsecondary credentials. For the 29.8 million immigrant-origin adults without postsecondary education or training in 2023, the imperatives to upskill may be growing because even

jobs that used to employ large shares of workers without postsecondary education or even a high school diploma—health-care support, food and personal services, and some blue-collar jobs—are shifting toward higher educational requirements. For example, while 39 percent of health-care support workers had an associate's degree or some college attendance in 2023, the share with at least some college is projected to rise to 58 percent by 2031. At the same time, first-generation immigrant workers without a high school education can be expected to continue to complement other U.S. workers in jobs with low education requirements, and low pay.

These trends have far-reaching implications across policy domains, but perhaps most notably education, workforce development, and immigration. While many first-generation immigrants have a college education, many others will need to obtain a high school diploma or its equivalent before they can consider pursuing postsecondary education or training to meet the requirements of future jobs. Immigrant-origin workers, overall, may need assistance in obtaining in-demand postsecondary credentials, whether through two- or four-year colleges or through industry-based credentialing programs. The key here is to offer high-quality credentials that ensure not only access to employment but economic mobility and self-sufficiency.[35]

While more than 6 million immigrant-origin adults are already in college and pursuing a postsecondary credential,[36] others—racial and ethnic minorities in particular—would benefit from on-ramps to these programs. In part, this entails addressing barriers to enrollment and completion that affect many people seeking to build their skills, U.S. and foreign born alike; these include financial strain and negotiating competing family and work pressures. It will also require tackling immigrant-specific barriers, such as those related to legal status and limited English proficiency. For adults with less than a high school education, especially if accompanied by low English literacy, the barriers to full economic integration are higher. Past MPI research has pointed to important ways in which the nation's somewhat inflexible adult education system can be made more responsive to the characteristics and learning needs of such adults.[37] Finally, helping all students and workers to build soft skills (such as communications skills and problem-solving), digital literacy, and the skills to utilize AI and other technological tools can help to prepare them to shift jobs over the course of their lives as broader forces continue to disrupt the country's industry and occupation mix.[38]

Immigrant-origin workers with higher education and professional credentials, meanwhile, may need help obtaining professional recognition of the education and skills they acquired outside of the United States. MPI researchers estimated that before the pandemic, more than 2 million, or one in five, immigrant college graduates were either unemployed or worked in jobs requiring no more than a high school education.[39] Among those who arrived between 2020 and 2023, 41 percent are college graduates. Many are likely to experience underemployment as well. For immigrant professionals facing barriers such as limited English proficiency, lack of a professional network in the United States, or unrecognized international credentials,

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35   Jacob Hofstetter and Margie McHugh, *Leveraging Data to Ensure Equitable and Effective Adult Skills Programming for Immigrants* (Washington, DC: MPI, 2023).

36   Jeanne Batalova and Michael Fix, *Shared Gains: Immigrant-Origin Students in U.S. Colleges* (Washington, DC: MPI, 2023).

37   Hofstetter and McHugh, *Leveraging Data*.

38   U.S. Government Accountability Office, *Workforce Automation: Insights into Skills and Training Programs for Impacted Workers* (Washington, DC: U.S. Government Accountability Office, 2022).

39   Batalova and Fix, *Leaving Money on the Table*.

career counseling and access to additional training could help them to narrow educational and language gaps and fully apply their skills. At the same time, rethinking licensing laws that often impose high, economically inefficient requirements on workers could be a critical step toward boosting recognition of internationally earned credentials and skills—an issue that promising state-level models are addressing.[40]

Immigration trends since global mobility bounced back from its pandemic-era slowdown also indicate that legal status is likely to play a large role in shaping many immigrants' educational and employment options. Millions have entered the United States since 2020. Some have come through permanent and temporary visa pathways and thus hold stable legal status, others have arrived at the U.S.-Mexico border seeking humanitarian protection, and yet others have been allowed into the country with humanitarian parole. These newcomers bring to the country a wide range of backgrounds and skill levels.

The ability of newly arrived immigrants, as well as some longer-standing populations (such as the more than 1.2 million DACA and TPS beneficiaries[41]), to fully integrate into the U.S. workforce may be tempered by the fact that they lack a durable legal status. Finding ways to address this challenge—for instance, by speeding approvals of work authorization for those who qualify and by considering legislation to open paths to permanent residence for long-term residents such as DACA and TPS holders and humanitarian groups such as Afghan parolees—would go a long way to helping them fully contribute to the U.S. economy.

While legal status challenges may be unique to the nation's immigrant population, disparities in education and workforce outcomes are not. U.S. residents overall, whether immigrant-origin or not, would benefit from assistance in addressing barriers to labor force participation that have been slowing the country's labor force expansion. In an economy marked as much by its growth as by wide, sustained mismatches between the skills workers have and those employers need, policymakers will need to ensure that more workers across the immigrant generation, gender, racial and ethnic, and other groups described here are equipped for the increasingly demanding jobs of the future.

U.S. residents overall, whether immigrant-origin or not, would benefit from assistance in addressing barriers to labor force participation that have been slowing the country's labor force expansion.

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40   Sara McElmurry, "State Investments Address Workforce Challenges," World Education Services (WES) Global Talent Bridge Partner Blog, March 30, 2023.
41   See Appendix Table A–1 for data on these and other liminal status populations.

Appendix

Immigrants with Liminal Statuses in the United States, 2023–24

Program	Number of Beneficiaries
Total Population	**2,602,000**
Entrants via New Forms of Parole	**1,158,000**
Processed via CBP One App	501,000
Cuban, Haitian, Nicaraguan, and Venezuelan (CHNV) Parole	386,000
Uniting for Ukraine Parole Program	196,000
Afghans Paroled via Operation Allies Welcome	75,000
Longer-Term Residents	**1,444,000**
Temporary Protected Status (TPS)	698,000
Deferred Action for Childhood Arrivals (DACA)	530,000
Deferred Action – U Visa	137,000
Deferred Action – Special Immigrant Juvenile Status	80,000

Notes: CBP One numbers are for successfully scheduled appointments made through the app; not every appointment results in an individual being processed into the country. Table shows the number of parolees via the CBP One app and through the Cuban, Haitian, Nicaraguan, and Venezuelan (CHNV) parole program through February 2024. The Uniting for Ukraine number is through November 8, 2023, and includes 20,000 Ukrainians paroled at the border before the program was created in April 2022. The number of Afghans assisted through Operation Allies Welcome is as of March 2023. The number of holders of Deferred Action for Childhood Arrivals (DACA) is as of December 2023 and the number of holders of Temporary Protected Status (TPS) is as of September 2023. The figure for deferred action for Special Immigrant Juvenile Status (SIJS) shows the number of holders as of April 2023. Deferred action for U visa applicants reflects the number of holders as of December 2023. Numbers for the SIJS and U visa types of deferred action indicate the number of people initially granted deferred action. Some parolees and grantees of deferred action may have obtained a different immigration status, including asylum, TPS, or lawful permanent residence.

Sources: Camilo Montoya-Galvez, "Biden Administration Has Admitted More than 1 Million Migrants into U.S. Under Parole Policy Congress Is Considering Restricting," CBS News, January 22, 2024; U.S. Customs and Border Protection (CBP), "CBP Releases February 2024 Monthly Operational Data" (press release, March 22, 2024); U.S. Citizenship and Naturalization Services (USCIS), "Count of Active DACA Recipients as of December 31, 2023," accessed April 1, 2024; USCIS, "Number of Form I-918, Petition for U Nonimmigrant Status, Bona Fide Determination (BFD) Reviews, Fiscal Years 2021-2024," accessed April 1, 2024; U.S. Department of Homeland Security (DHS), Citizenship and Immigration Services Ombudsman, *Annual Report 2023* (Washington, DC: DHS, 2023); Jill H. Wilson, *Temporary Protected Status and Deferred Enforced Departure* (Washington, DC: Congressional Research Service, 2023); the SIJS number comes from panel discussion at the spring conference of the American Immigration Lawyers Association, Washington, DC, April 27–28, 2023.

TABLE A–2

U.S. Adults (age 18 and older), by Educational Attainment, Immigrant Generation, and Race/Ethnicity, 2023

	Total Adults	No High School Diploma	High School Diploma or Equivalent	Some College, No Degree	Associate's Degree	Bachelor's or Higher Degree
All U.S. adults	**253,938,000**	**21,279,000**	**74,004,000**	**42,382,000**	**25,307,000**	**90,965,000**
Latino	17%	47%	20%	16%	14%	9%
Black	13%	12%	15%	15%	13%	9%
Asian American and Pacific Islander	7%	6%	5%	5%	5%	12%
White	61%	34%	59%	62%	66%	69%
First generation	**45,605,000**	**9,682,000**	**12,374,000**	**4,337,000**	**2,974,000**	**16,238,000**
Latino	46%	80%	57%	44%	37%	21%
Black	9%	4%	10%	16%	14%	9%
Asian American and Pacific Islander	27%	11%	18%	22%	25%	45%
White	17%	6%	14%	18%	23%	24%
Second generation	**24,180,000**	**1,427,000**	**6,304,000**	**4,938,000**	**2,318,000**	**9,193,000**
Latino	43%	66%	58%	48%	47%	25%
Black	7%	5%	5%	8%	8%	7%
Asian American and Pacific Islander	19%	10%	11%	18%	14%	27%
White	31%	19%	26%	26%	31%	41%
Third-and-higher generation	**184,153,000**	**10,170,000**	**55,326,000**	**33,108,000**	**20,015,000**	**65,534,000**
Latino	7%	12%	8%	8%	7%	4%
Black	14%	22%	17%	16%	14%	10%
Asian American and Pacific Islander	1%	0%	1%	1%	1%	1%
White	77%	63%	72%	73%	77%	84%

Notes: This table excludes adults enrolled in high school at the time of the survey. Latinos can be of any race. The other racial groups refer to non-Latinos. Black refers to non-Latino persons who reported their race as "Black alone" or "Black in combination with other race." Asian American and Pacific Islander (AAPI) refers to non-Latino persons who reported their race as "AAPI alone" or "AAPI in combination with other race," except Black. White refers to non-Latino persons who reported their race as "White alone." The remainder is a group called "other races" that is too small to display; it includes non-Latino people who reported their race as "American Indian alone," "American Indian and White," or unspecified multiracial group.
Source: MPI analysis of data from the CPS 2023 March ASEC data.

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