

Immigrant Workers in the Construction Labor Force

NAHB Economics

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As the housing industry gains momentum and the demand for workers increases, labor shortages quickly rise on the list of the top impediments to housing recovery. The most recent 2016 American Community Survey (ACS) shows that immigrant workers remain an important source of labor to the construction industry.

The share of foreign-born workers in the US construction labor force has been rising since the housing recovery got underway. Immigrant workers now account for close to one in four workers, the highest share recorded by the ACS. The time-series analysis shows that the rising share of immigrants in construction cannot be explained by an unusually high number of immigrants joining the industry. Rather, a slow, delayed and reluctant post-recession return of native-born workers underlies the shift towards the higher reliance on immigrants in the construction work force.

The share of immigrants is even higher in construction trades, reaching 30%. Concentration of immigrants is particularly high in some of the trades needed to build a home, like carpenters, painters, drywall/ceiling tile installers, brick masons, and construction laborers – trades that require less formal education but consistently register some of the highest labor shortages in [the NAHB/Wells Fargo Housing Market Index \(HMI\) surveys](#) and [NAHB Remodeling Market Index \(RMI\)](#).

In some states, reliance on foreign-born labor is even more pronounced. Immigrants comprise close to 42% of the construction workforce in California and close to 41% in Texas. In New York and Nevada, 37% of the construction labor force is foreign-born and in Florida, 35% of construction industry workers come from abroad.

Data and Methodology

The construction immigrant labor research in this article is based on the American Community Survey (ACS) data. The ACS replaced the decennial Census long form and provides the same detailed data, including information about the country of origin, age, year of entry, industry and employment status of immigrants – but now on an annual basis. The ACS, however, does not gather information on the legal

visa status of immigrants and only differentiates between naturalized citizens and not citizens of the United States. The NAHB estimates in this article include all workers of foreign-born origin regardless of their citizenship status or date of entry into the United States.

The ACS surveys households rather than businesses and, consequently, covers self-employed workers. Counting self-employed is particularly important in the construction industry where they traditionally make up a larger share of the labor force.

The ACS does not report employment data separately for residential and nonresidential construction, but different types of construction can require similar skills and, therefore, often draw workers from the same labor pool. As a result, workers' movement between the residential and nonresidential is flexible for many trades.

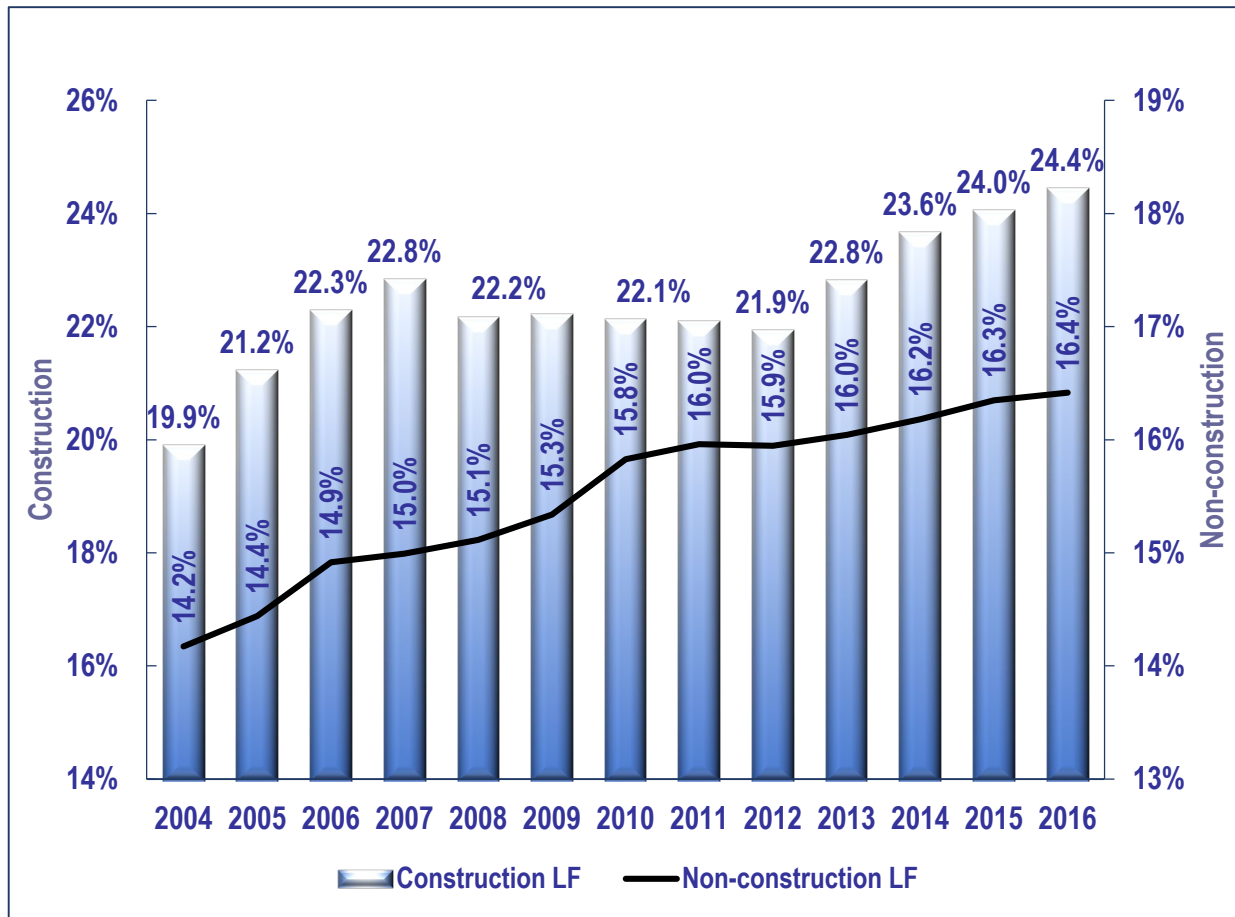
As an annual survey, the ACS allows for tracking over time changes in the construction labor force. To analyze historical trends, NAHB Economics uses the 2004–2016 ACS Public Use Microdata Samples (PUMS). To analyze the composition of the construction labor force, this research relies on the most recent 2016 ACS.

Rising Immigrant Share

The 2004–2016 ACS data show that the aging US workforce grew more dependent on foreign-born labor with its share rising from less than 15% in 2004 to 17% in 2016. The reliance of the construction industry on foreign-born workers is even greater. Immigrants now account for almost a quarter of the construction work force. Their share was rising rapidly during the housing boom years, when labor shortages were widespread and severe across construction trades. It increased from less than 20% in 2004 to almost 23% in 2007 (see Figure 1).

Even during the housing downturn the share of immigrants in construction remained relatively high, fluctuating around 22%. In 2013, as the home building industry started its slow recovery, immigrants started to return to the construction industry and the share of immigrants in the construction labor force started to rise again. By 2016, the share exceeded 24%, the highest level recorded by the ACS.

Figure 1. Share of Immigrants in the US Labor Force

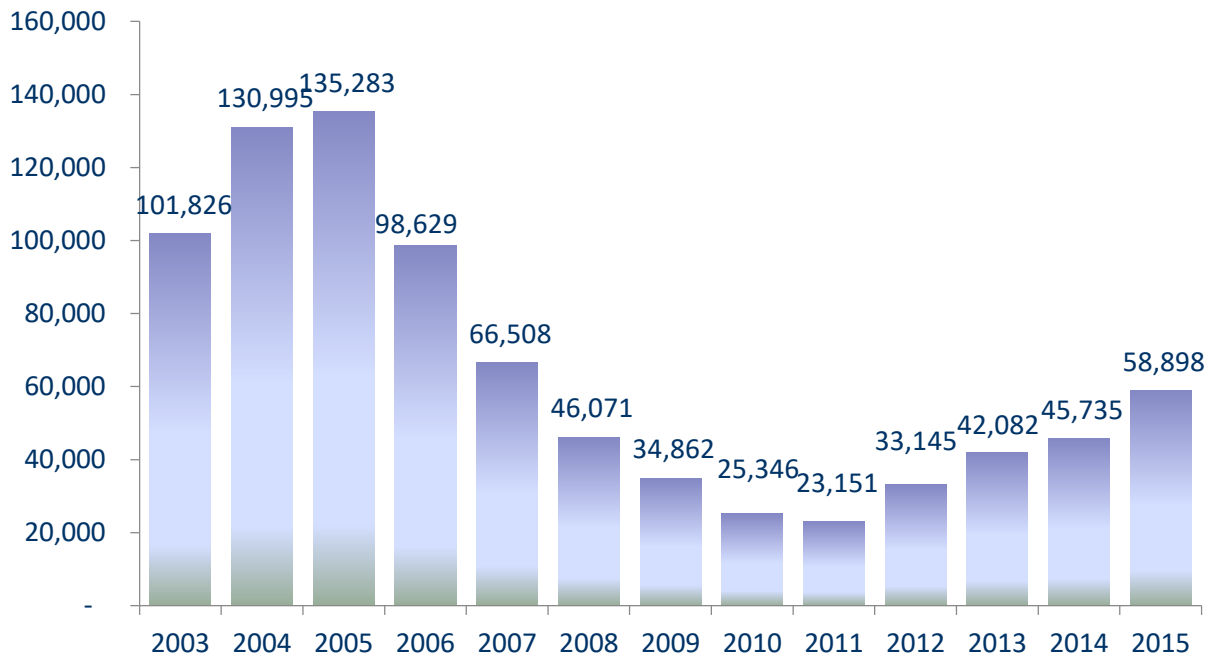


Source: 2004-2016 ACS PUMS, NAHB estimates

Even though the share of immigrants in construction is now at its highest since the ACS was fully implemented in 2004, and their number exceeds 2.5 million, this is still almost 200,000 immigrants (5%) fewer than in 2007. The flow of new immigrants into the construction work force is also significantly slower compared to the housing boom years¹. Less than 60,000 new immigrants entered the construction industry in 2015. In comparison, over 130,000 new immigrants were joining the construction labor force annually in 2004 and 2005 (see Figure 2).

¹ For the methodology to estimate the immigrant inflow into the construction industry, see “Construction Worker Immigrant Flow”, Housing Economics, January 2015.

Figure 2. New Immigrants in the Construction Labor Force

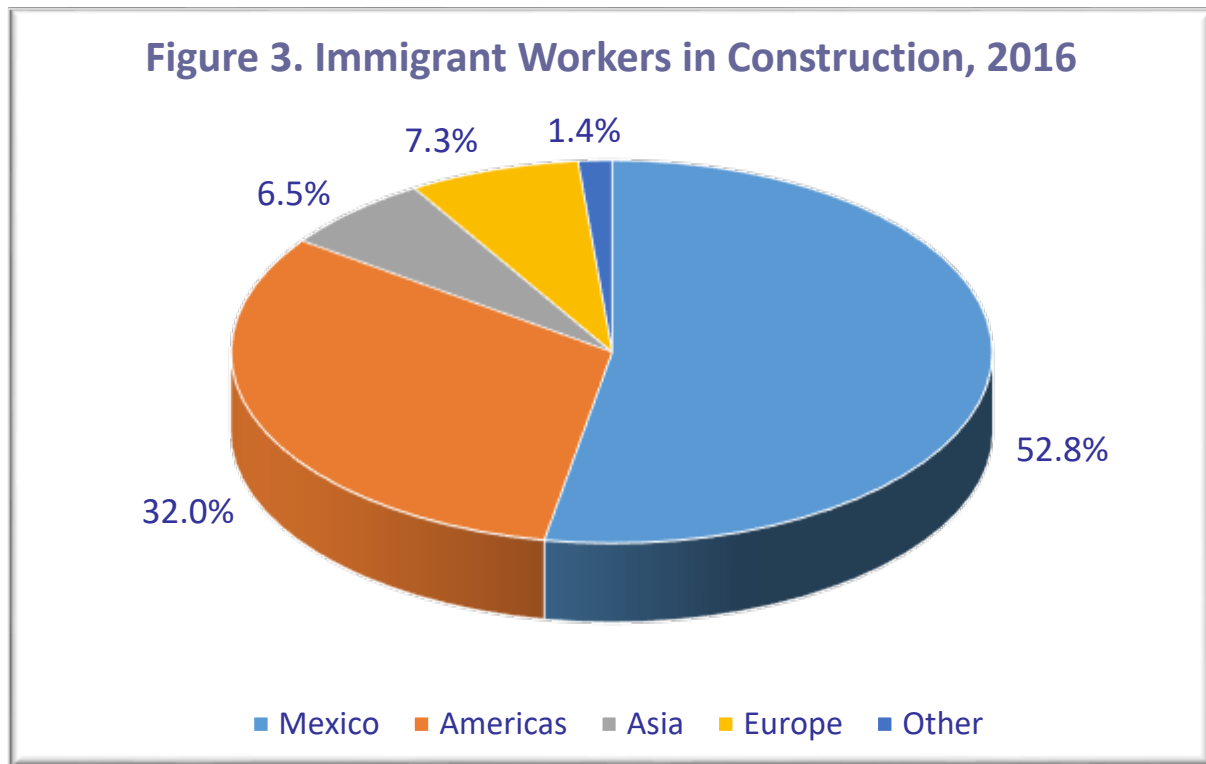


Therefore, the rising share of immigrants in construction cannot be explained by an unusually high and rising number of immigrants joining the industry. Rather, a slow, delayed and reluctant post-recession return of native-born workers underlies the shift towards the higher reliance on immigrants in the construction work force. Close to 1.7 million native-born workers left the construction labor force during the housing downturn, and the vast majority (1.5 million) had not returned to the industry as of 2016. 2015 became the first year since 2006 to register the rising number of native-born workers in the construction labor force, while the number of immigrants started to rise two years prior. As of 2016, the number of native-born workers remained 16% below the cyclical high reached a decade earlier, while the number of immigrants was 5% lower.

Where Construction Workers Originate

Figure 3 illustrates where immigrant construction workers originate. The majority, close to 53%, come from Mexico. An additional 32% come from other countries in

the Americas. Even though the share of Mexican workers declined slightly since 2004, the increase in the share of immigrants from the rest of Americas more than offset the declining share of Mexico-born immigrants. Together, they account for almost 85% of the immigrant construction labor force. Europeans make up 7.3%, and an additional 6.5% come from Asia.



Source: the 2016 ACS, PUMS, NAHB estimates

Characteristics of Immigrant Workers in the Construction Labor Force

The further analysis of the ACS data looks at characteristics of immigrant workers in construction attempting to understand why the construction industry attracts a high share of foreign-born labor. The ACS data show that the construction industry relies heavily on labor that requires less formal education. As shown in Table 1, 21% of construction workers do not have a high school diploma and an additional third of the construction labor force did not study beyond high school. Immigrants who arrive to the United States to work in the construction industry are more likely to be drawn into lower skill trades since roughly half of them do not have a high school diploma and additional 28% did not study beyond high school. By comparison, less than 13% of native-born workers in the construction industry did not graduate from high school and more than half of them went to college. As a

result, immigrants represent more than half of the lowest skill (no high school diploma required) construction labor force, while their overall share in the construction labor force is 23%.

Table 1. Construction Labor Force: Educational Attainment

Place of Birth	Less than High School Diploma	High School Diploma	Some College	Bachelor's Degree	Graduate or Professional Degree	Total
Native	12.5%	34.7%	39.5%	11.1%	2.2%	7,904,967
Foreign Born	47.6%	28.3%	15.9%	5.9%	2.2%	2,554,768
All	21.1%	33.1%	33.8%	9.8%	2.2%	10,459,735

Source: the 2016 ACS, PUMS, NAHB estimates

The 2016 ACS data also show that the construction industry attracts younger immigrants, with half of them age 40 and younger, while the median age of the native population in the construction labor force is 43. The median age of immigrants participating in the US labor force outside of construction is 43. Immigrants who arrived to the US since 2006 and joined the construction labor force are even younger with half of them under the age of 32 while the median age of newly arrived immigrants in the labor force outside of construction is 34.

Immigrants in Construction Trades

According to the government's system for classifying occupations, the construction industry employs workers in over 300 occupations. Out of these, only 31 are construction trades, but they account for two thirds of the construction labor force. The other third of workers are in finance, sales, administration and other off-site activities².

Immigrants account for 30% of all workers in construction trades. Their presence is particularly large among construction occupations needed to build a home, such as carpenters, laborers, painters, roofers, brick masons, drywall/ceiling tile installers, etc. The two most prevalent construction occupations, laborers and carpenters, account for about 30% of the construction labor force. More than a third of all construction laborers (37%) and 31% of carpenters are of foreign-born origin (see Table 2).

² Note, that managers, heating, ventilation, air conditioning, and refrigeration (HVACR) mechanics and installers are not included in the construction group.

Table 2. Immigrants in Construction Occupations

Construction Occupation	Total	Immigrant Share	No High School Diploma
Construction laborers	1,896,422	37%	33%
Carpenters	1,158,099	31%	26%
First-line supervisors of construction trades and extraction workers	710,773	16%	16%
Electricians	585,716	16%	9%
Painters and paperhangers	543,426	48%	36%
Pipelayers, plumbers, pipefitters, and steamfitters	480,089	18%	17%
Construction equipment operators except paving, surfacing, and tamping equipment operators	279,061	11%	22%
Roofers	224,392	45%	46%
Carpet, floor, and tile installers and finishers	155,580	46%	37%
Drywall installers, ceiling tile installers, and tapers	153,807	49%	44%
Brickmasons, blockmasons, stonemasons, and reinforcing iron and rebar workers	152,890	39%	38%
Highway maintenance workers	94,433	6%	11%
Cement masons, concrete finishers, and terrazzo workers	66,055	33%	39%
Miscellaneous construction workers, including solar photovoltaic installers, septic tank servicers and sewer pipe cleaners	57,605	25%	26%
Sheet metal workers	51,044	14%	14%
Structural iron and steel workers	50,222	19%	14%
Insulation workers	46,943	37%	27%
Helpers, construction trades	46,005	29%	28%
Plasterers and stucco masons	34,712	54%	48%
Fence erectors	30,876	33%	40%
Glaziers	29,636	21%	19%
Construction and building inspectors	24,848	10%	3%
Elevator installers and repairers	20,242	7%	4%
Earth drillers, except oil and gas	20,207	13%	22%
Paving, surfacing, and tamping equipment operators	14,180	23%	35%
Boilermakers	6,469	10%	16%
Hazardous materials removal workers	4,859	30%	16%
Explosives workers, ordnance handling experts, and blasters	2,007	38%	45%
Miscellaneous extraction workers, including roof bolters and helpers	1,205	10%	0%
Rail-track laying and maintenance equipment operators	535	0%	0%
Mining machine operators	109	0%	0%

Source: the 2016 ACS, PUMS, NAHB estimates

Table 2 shows that immigrants are concentrated in trades that do not require years of education. Immigrants account for almost half of drywall/ceiling tile installers and tapers, a trade where more than 44% of workers do not have a high school diploma. About 37% of all carpet/floor/tile installers and painters did not finish high school, immigrants account for 46% of workers in these occupations.

The trades with low presence of foreign-born labor, such as construction and building inspectors, boilermakers, elevator installers, electricians, first-line supervisors – tend to recruit better educated workers. Only 3% of construction and building inspectors, less than 4% of elevator installers/repairers and 9% of electricians did not graduate from high school.

The construction occupations with the highest presence of immigrants are plasterers/stucco masons, drywall installers and painters. The share of immigrants in these trades is 54, 49 and 48% respectively. Between 36 and 48% of workers in these occupations do not have high school diploma.

Table 3 presents the top 15 most common non-construction trades in the building industry. The majority of them are management, office and sales occupations. These trades seem to recruit workers with more advanced education and higher skills as share of workers with no high school diploma in these trades is minimal (with the exception of drivers, installation/maintenance/repair workers and welding/soldering/brazing workers). The immigrant presence in these trades is less pronounced. While the overall share of immigrants in the construction labor force exceeds 24%, their share among construction and miscellaneous managers – the top two most common non-construction trades in the industry - is 13 and 14%, respectively. The immigrant share is as low as 9% among chief executives, 8% among cost estimators, and 4% among sales representatives.

Table 3. Immigrants in Top 15 Most Prevalent Non-Construction Trades in the Construction Industry

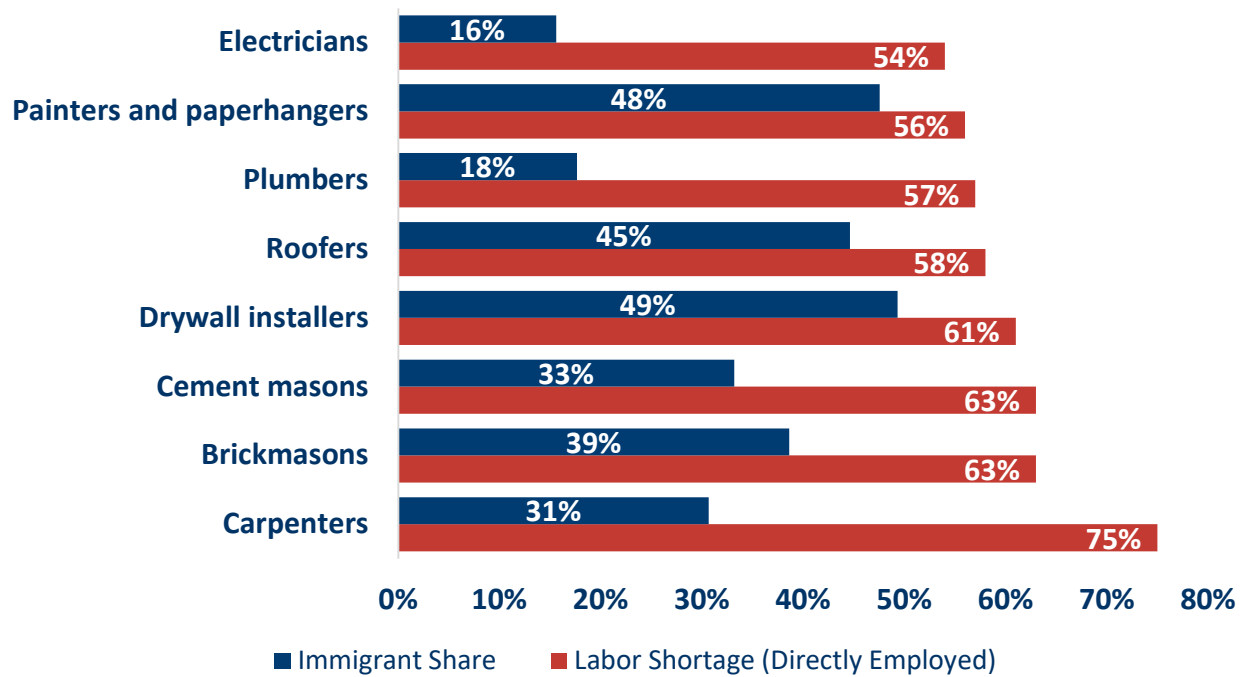
Occupation	Total	Immigrants' Share	No High School Diploma
Construction managers	645,997	13%	8%
Miscellaneous managers, including funeral service managers and postmasters and mail superintendents	444,294	14%	10%
Heating, air conditioning, and refrigeration mechanics and installers	311,002	16%	12%
Secretaries and administrative assistants	203,278	9%	4%
Driver/sales workers and truck drivers	194,783	15%	22%
Chief executives and legislators	100,176	9%	3%
Welding, soldering, and brazing workers	93,340	22%	18%
Sales representatives, services, all other	88,349	4%	4%
Cost estimators	82,952	8%	3%
Bookkeeping, accounting, and auditing clerks	79,914	10%	3%
Civil engineers	75,591	19%	1%
Heavy vehicle and mobile equipment service technicians and mechanics	67,473	14%	15%
Accountants and auditors	62,621	12%	0%
Office clerks, general	57,025	12%	9%
Miscellaneous installation, maintenance, and repair workers, including wind turbine service technicians	41,686	20%	19%
First-line supervisors of office and administrative support workers	41,600	7%	5%
General and operations managers	37,479	11%	9%

Source: 2016 ACS, PUMS, NAHB estimates

The Census data, therefore, highlight that immigrants in the construction labor force are concentrated in trades that do not require years of education or advanced skills. It turns out these trades also tend to have more vacancies and labor shortages. According to NAHB's monthly HMI surveys, construction trades with the most consistent labor shortages are framing crews, carpenters and bricklayers.

About 30% of surveyed builders were reporting some shortages of labor in these trades in June 2012. At this stage of the recovery, the shortages were not nearly as widespread as in the midst of the housing boom. Nine months later, in March 2013, reported labor shortages got worse across all trades, but particularly among framing crews and carpenters. By June of 2014, 63% of builders reported shortages of labor for rough carpentry employed directly by their firms. The most recent (July 2017) survey showed even more acute shortages, with two out of three builders reporting shortages of carpenters and framing crews directly employed by their firms.

Figure 4. Immigrants in Construction Trades with High Labor Shortages



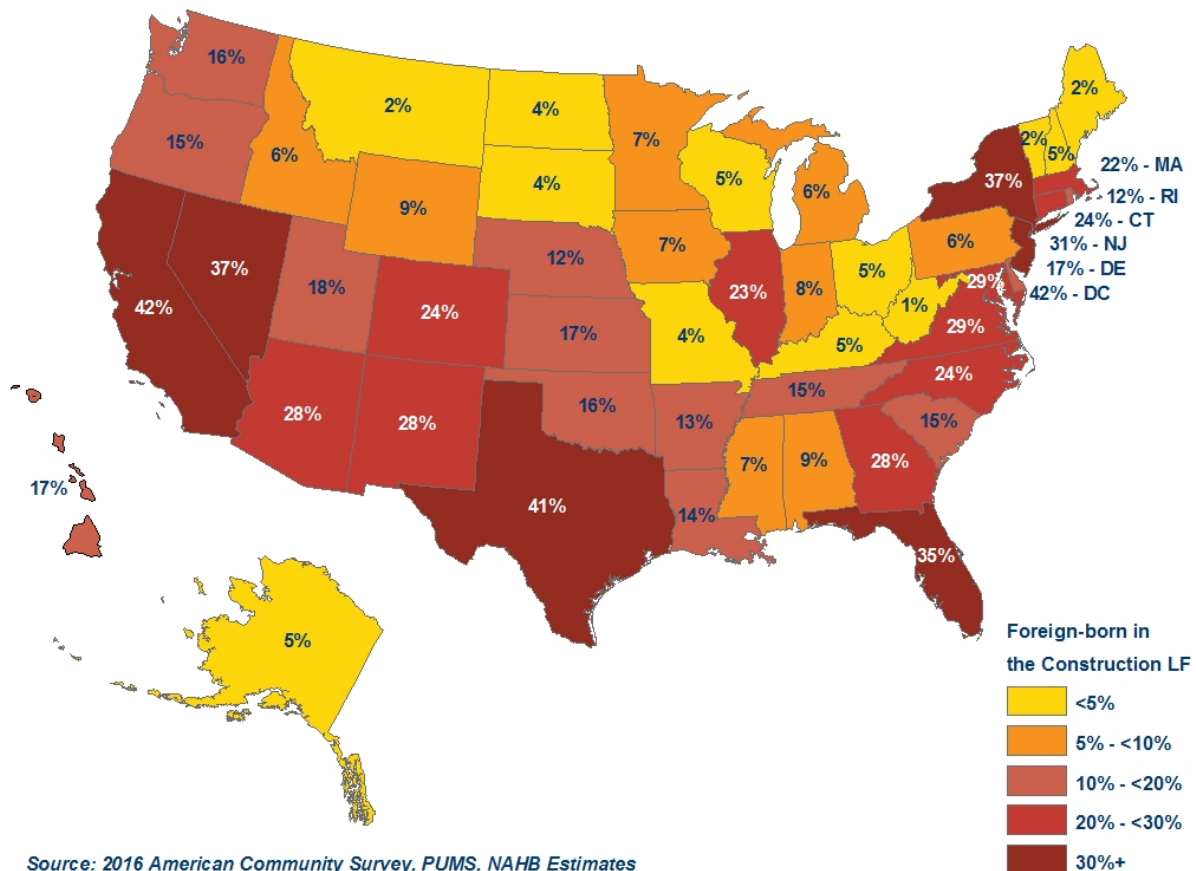
Immigrant Construction Workers across States

Traditionally, construction immigrants are concentrated in a few populous states, with more than half of all immigrant construction workers (56%) residing in California, Texas, New York, and Florida. These are not only the most populous states in the U.S. (together accounting for nearly a third of the country's population), they are also particularly reliant on foreign-born construction labor, as more than a third of the construction industry workforce in these states comes from abroad.

California and the District of Columbia take the lead on the state list with 42% of the construction labor force coming from abroad (Figure 5). The foreign-born share is similarly high in Texas, exceeding 41%. In New York and Nevada, around 37% of the construction work force is foreign-born, and in Florida the share approaches 35%.

Figure 5.

Immigrant Workers in the Construction Labor Force, 2016



However, the reliance on foreign-born labor is also evident outside of these traditional immigrant magnets. This is evident in states like Georgia, Virginia and Maryland, where immigrants, as of 2016, account for close to 30% of the construction labor force.

While most states draw the majority of immigrant foreign-born workers from the Americas, Hawaii relies more heavily on Asian immigrants. European immigrants are a significant source of construction labor in North East and Illinois (see Table 4).

Table 4. Construction Labor Force by State, 2016

State	Number of Workers,	Place of Birth						Change since 2007
		US	Mexico	Americas	Asia	Europe	Other	
AL	136,038	91%	7%	2%		0%	0%	-26.6%
AK	31,565	95%	0%		1%	3%		10.0%
AZ	221,579	72%	24%	2%	1%	1%	0%	-32.0%
AR	83,228	87%	10%	2%	0%	0%	0%	-21.3%
CA	1,181,373	58%	28%	7%	5%	2%	0%	-18.7%
CO	240,966	76%	19%	3%	0%	1%	0%	-9.1%
CT	115,761	76%	3%	13%	1%	6%	1%	-9.7%
DE	32,578	83%	8%	9%	0%			-13.9%
DC	10,026	58%	8%	32%	2%		1%	-1.1%
FL	728,465	65%	7%	25%	1%	2%	0%	-19.9%
GA	330,294	72%	18%	7%	2%	1%	0%	-23.0%
HI	55,998	83%	3%	0%	10%	2%	2%	1.8%
ID	47,549	94%	5%	0%		1%		-38.3%
IL	358,248	77%	14%	2%	1%	6%	0%	-23.0%
IN	201,366	92%	6%	2%	0%	0%		-9.1%
IA	109,813	93%	5%	1%	0%	0%		-3.0%
KS	90,436	83%	14%	2%	0%	0%	0%	1.9%
KY	126,267	95%	3%	1%	0%	0%	0%	-12.4%
LA	180,209	86%	4%	9%	1%	0%	0%	-8.0%
ME	46,881	98%		2%				-14.3%
MD	211,807	71%	3%	23%	1%	1%	1%	-13.6%
MA	218,363	78%	0%	13%	2%	5%	1%	-3.2%
MI	262,401	94%	2%	0%	2%	2%	0%	-15.0%
MN	179,679	93%	3%	2%	0%	1%	0%	-13.8%
MS	86,458	93%	4%	2%		0%		-20.1%
MO	188,687	96%	2%	1%	0%	1%		-18.4%
MT	51,224	98%	0%	0%	1%	0%		4.1%
NE	72,784	88%	11%	1%	0%			9.5%
NV	98,786	63%	29%	6%	2%	1%	0%	-30.3%
NH	53,526	95%	1%	2%	1%	1%		-10.4%
NJ	269,915	69%	4%	18%	2%	6%	1%	-13.0%
NM	64,547	72%	26%	1%		1%		-25.4%
NY	565,684	63%	4%	21%	4%	7%	1%	-7.7%
NC	326,150	76%	16%	6%	1%	1%	0%	-19.1%
ND	34,368	96%	1%	1%	0%	0%	2%	26.4%
OH	315,123	95%	2%	1%	0%	1%	0%	-14.7%
OK	132,561	84%	13%	2%	0%	0%		11.1%
OR	124,312	85%	11%	1%	1%	2%		-17.7%
PA	372,958	94%	1%	2%	1%	2%	0%	-11.9%
RI	31,239	88%	1%	5%	1%	4%	1%	-12.0%
SC	152,617	85%	9%	4%	1%	0%	0%	-20.0%
SD	35,225	96%	0%	3%			1%	37.6%
TN	201,293	85%	11%	3%	1%	0%	0%	-14.4%
TX	1,174,774	59%	33%	7%	1%	0%	0%	9.7%
UT	96,560	82%	14%	3%	0%	0%	1%	-24.5%
VT	22,873	98%		1%	1%	1%		-25.7%
VA	285,025	71%	5%	20%	3%	1%	0%	-11.5%
WA	247,898	84%	9%	2%	2%	3%	1%	-8.3%
WV	53,468	99%	0%	0%	0%	0%		-16.4%
WI	175,000	95%	3%	0%	0%	1%		-11.0%
WY	25,790	91%	8%	0%		1%		0.1%

The last column of Table 4 highlights the uneven losses in the construction labor force that took place across states since 2007. The construction workforce (both native and foreign-born workers included) in Idaho is 38% smaller than in 2007. Close to a third of workers left the construction industry in Nevada and Arizona since 2007. All three states registered drastic declines in immigrant workers as part of the overall declines in the construction labor force. In Arizona, about half of all immigrant workers left the building industry. Idaho lost 45% of foreign-born construction workers and Nevada saw its construction immigrant labor pool shrink by 29%.

While most states saw their construction work force shrink since 2007, the building industry of North and South Dakota, fueled by the local oil boom, continued to absorb new workers through 2016, but largely native-born. In addition, eight more states registered gains in the construction workforce. Compared to 2007, Oklahoma, Alaska, Texas, and Nebraska registered gains between 10 and 11%. Montana, Kansas, Hawaii, and Wyoming have registered smaller gains.

In summary, analysis of the 2016 ACS data highlights the significant presence of foreign-born labor in the construction work force across the United States. They are concentrated in occupations that require less formal education and are needed in substantial numbers to build homes. The distribution of immigrant construction workers is not even across the US, with some states drawing more than a third of their construction workers from abroad.