Immigrant Workers in the Construction Labor Force

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As the housing industry skilled labor shortage continues, access to workers remains on the list of the top impediments to returning home building to the historically normal levels of production. The most recent 2018 American Community Survey (ACS) shows that immigrant workers remain a vital and flexible source of labor to the construction industry.

Despite the slowing of immigration inflow to the U.S., the share of foreign-born workers in the US construction labor force has been rising since the housing recovery began. Immigrant workers now account for close to one in four workers, a record high share that was reached for the first time in 2016. The story behind the rising share of immigrants in the construction labor force during the housing recovery is twofold – an unusually slow, delayed and reluctant return of native-born workers and a much faster and robust comeback of immigrant workers. Close to 1.7 million native-born workers left the construction labor force during the housing downturn, and the vast majority on a net basis, over 1 million, had not returned to the industry as of 2018. In sharp contrast, the number of immigrant workers in construction has now returned to the 2006 level.

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 40% of the construction workforce in California and Texas. In Florida, New Jersey and New York, close to 37% of the construction labor force is foreign-born and in Nevada, one out of three 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 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 such workers 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.

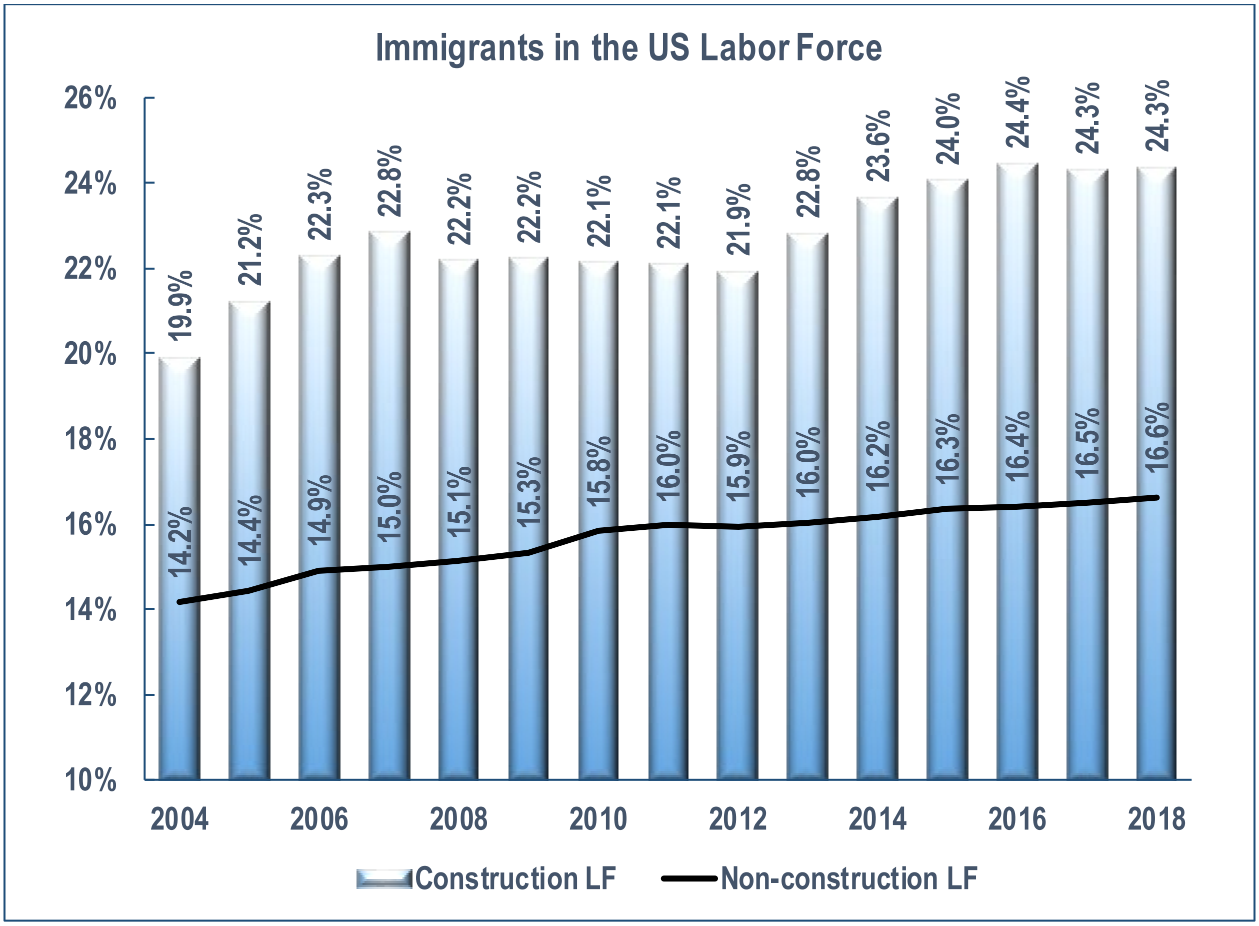
As an annual survey, the ACS allows for tracking over time changes in the construction labor force. To analyze historical trends, NAHB Economics uses the 2004–2018 ACS Public Use Microdata Samples (PUMS). To analyze the composition of the construction labor force, this research relies on the most recent 2018 ACS.

Rising Immigrant Share

The 2004-2018 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 2018. The reliance of the construction industry on foreign-born workers is greater. Immigrants now account for almost a quarter of the construction work force. That 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: 2004-2018 ACS PUMS, NAHB estimates

The share of immigrants in construction stabilized at these record high levels with no further increases in 2017 and 2018. The number of immigrants in construction now approaches 2.7 million, just 60,000 workers short of the peak immigrant employment level reached in 2007.

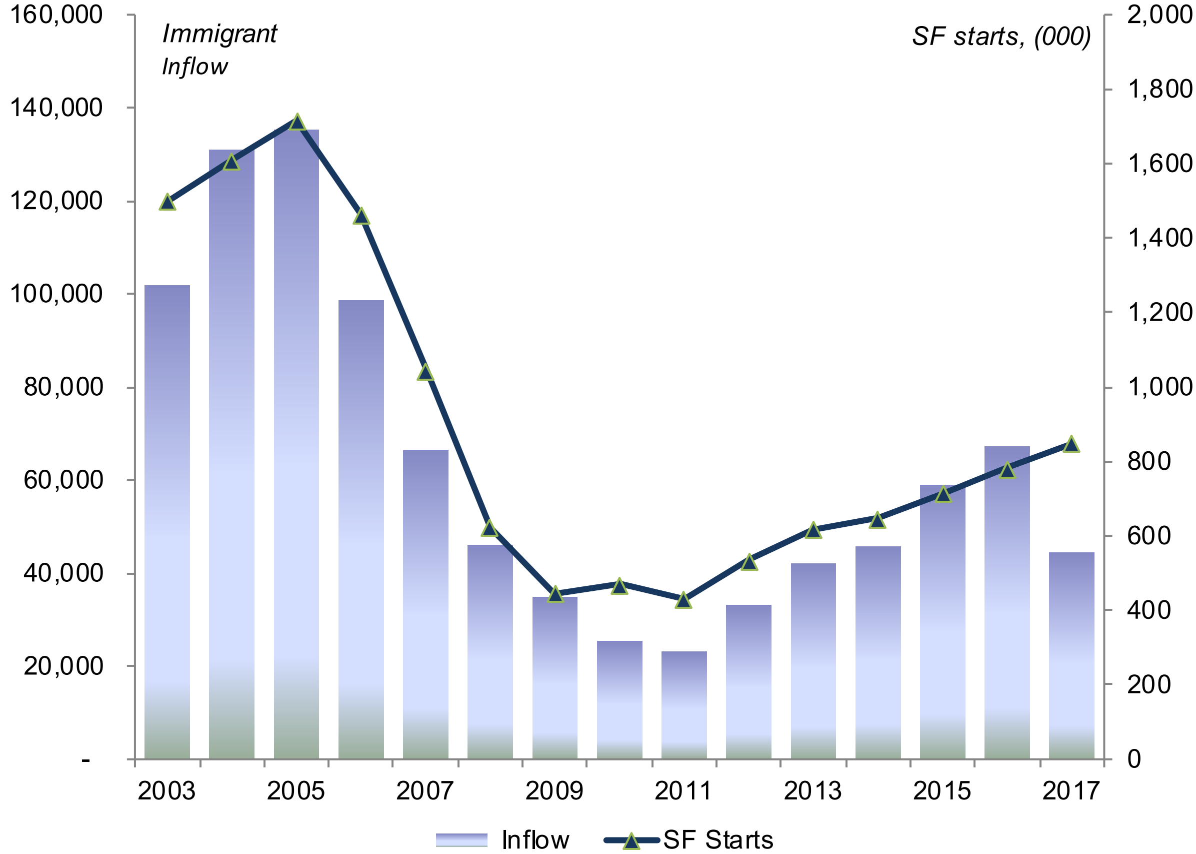
Even though the flow of new immigrants into the construction work force picked up since the housing recovery got underway, it is now significantlysmall in level terms compared to the housing boom years[1]. Just over 44,000 new immigrants entered the construction industry in 2017. This is a substantial drop even compared to the previous year, when over 67,000 new immigrants joined in. In comparison, over 130,000 new immigrants were joining the construction labor force annually in 2004 and 2005 (see Figure 2).

The 2017 noticeable drop in the number of new immigrants in construction may seem puzzling given favorable economic conditions. Over the last 15 years, the time span these data are available, the annual flow of new immigrant workers into construction remained highly correlated with measures of new home construction, especially new single-family starts. The number of new immigrants in construction rose rapidly when housing starts were rising and declined precipitously when the housing industry was contracting (see Figure 2). The response of

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

immigration has been quite rapid, occurring in the same year as a change in the single-family construction activity. The surprising drop of 2017 in the number of new immigrants in construction most likely reflects a change in the US immigration policy that took place during the first year under the new administration.

Figure 2. Annual Flow of New Immigrants into Construction and New Single-family Starts

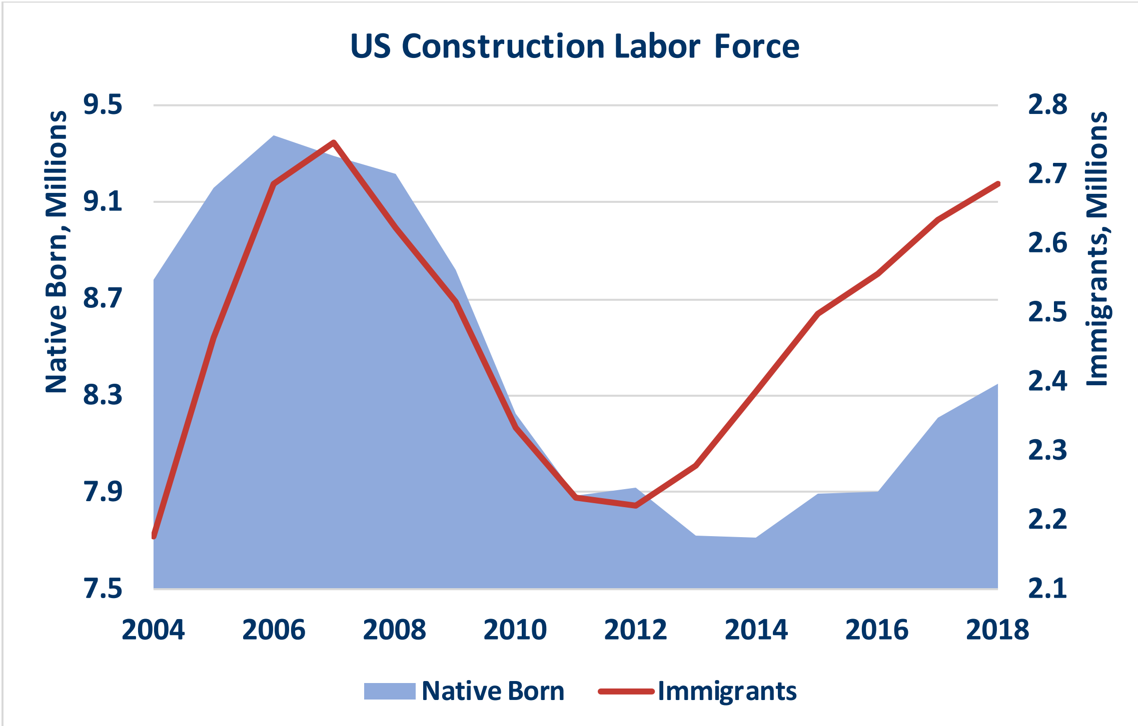


Source: 2004-2018 ACS PUMS, NAHB estimates

The post-recession return of native-born workers into the construction labor force has been much slower (see Figure 3). Close to 1.7 million native-born workers left the construction labor force during the housing downturn, and the vast majority (over 1 million) had not returned to the industry as of 2018. 2015 became the first year since 2006 to register a rising number of native-born workers in the construction labor force, while the number of immigrants started to rise two years prior. As of 2018, the number of native-born workers remained 11% below the cyclical high reached in 2006, while the number of immigrants now returned to the 2006 level.

As Figure 3 highlights, 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.

Figure 3.

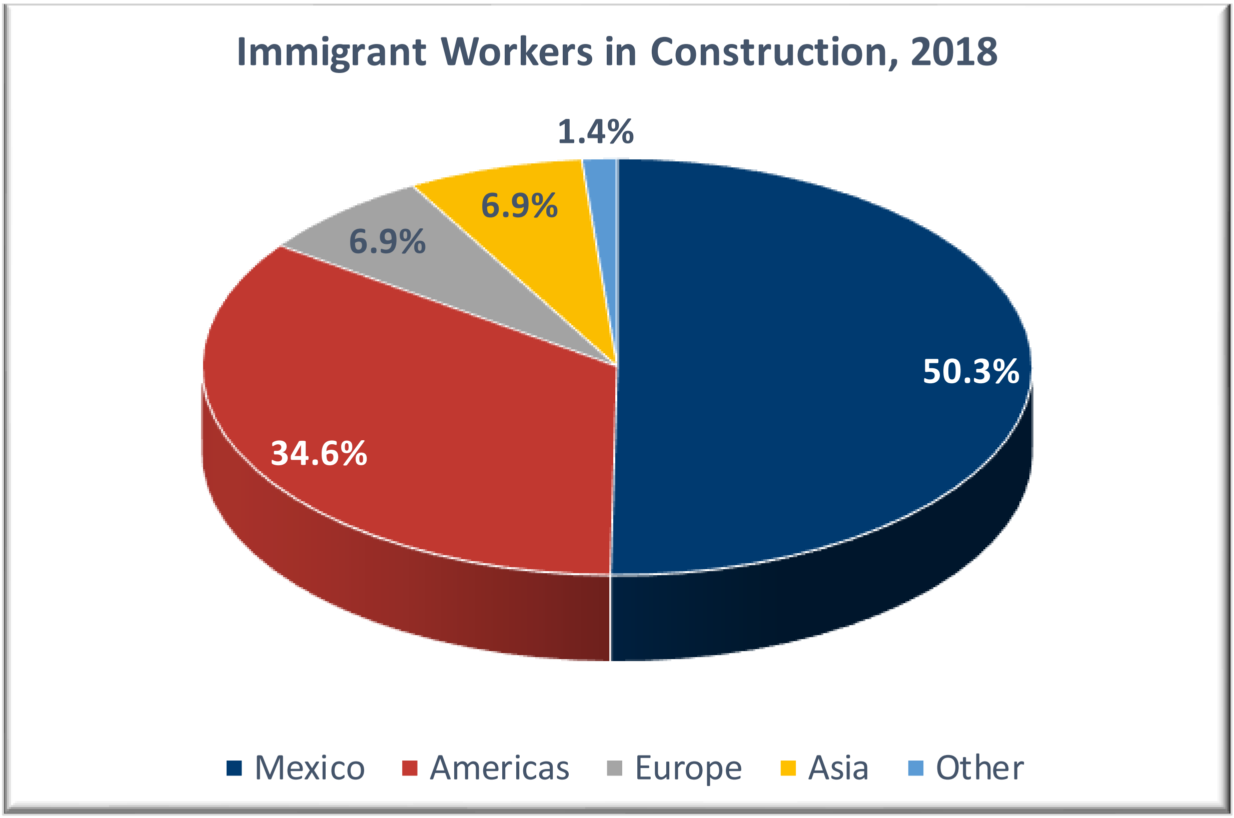


Source: 2004-2018 ACS PUMS, NAHB estimates

Where Construction Workers Originate

Figure 4 illustrates where immigrant construction workers originate. Half of them come from Mexico. An additional 35% 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 85% of the immigrant construction labor force. Europeans and Asian immigrants evenly split the remaining 14% of foreign-born construction workforce.

Figure 4.



Source: the 2018 ACS, PUMS, NAHB estimates

Characteristics of Immigrant Workers in the Construction Labor Force

The ACS data show that the construction industry relies heavily on labor that requires less formal education. As shown in Table 1, one in five 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 work in the construction industry are more likely to be drawn into lower skill trades. Almost half of them (45%) do not have a high school diploma and additional 28% did not study beyond high school. By comparison, less than 12% 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 24%. As the US workforce becomes more credentialed from an education perspective, it will become increasingly harder to attract native-born workers with higher educational attainment into construction work.

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	11.5%	35.2%	39.4%	11.5%	2.5%	8,346,593
Foreign Born	45.0%	28.2%	17.6%	6.9%	2.4%	2,685,548
All	19.7%	33.5%	34.1%	10.3%	2.5%	11,032,141

Source: the 2018 ACS, PUMS, NAHB estimates

The 2018 ACS data also show that the construction industry attracts younger immigrants, with half of them age 41 and younger, while the median age of the native population in the construction labor force is 42. The median age of immigrants participating in the US labor force outside of construction is 43. Immigrants who arrived in the US during the last decade and joined the construction labor force are even younger with half of them under the age of 33 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 360 occupations. Out of these, only 33 are construction trades, but they account for almost two thirds of the construction labor force. The other one-third of workers are in finance, sales, administration and other off-site activities[2].

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 (36%) and 33% of carpenters are of foreign-born origin (see Table 2).

[2] Note, that managers, heating, ventilation, air conditioning, and refrigeration (NVACR) 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	2,087,689	36.0%	30.4%
Carpenters	1,143,228	32.7%	27.0%
First-Line Supervisors Of Construction Trades	755,647	17.2%	15.3%
Electricians	603,096	15.5%	8.3%
Painters And Paperhangers	556,003	47.3%	35.6%
Plumbers, Pipefitters, And Steamfitters	460,614	18.0%	15.7%
Construction Equipment Operators	302,708	13.9%	21.9%
Roofers	229,756	43.6%	42.0%
Brickmasons, Blockmasons, Stonemasons	161,213	39.6%	34.6%
Drywall Installers, Ceiling Tile Installers	153,299	50.0%	45.1%
Carpet, Floor, And Tile Installers And Finishers	131,683	40.2%	31.5%
Highway Maintenance Workers	83,557	7.3%	12.3%
Cement Masons, Concrete Finishers, And Terrazzo Wc	64,932	34.0%	33.7%
Sheet Metal Workers	53,209	17.0%	16.1%
Insulation Workers	43,073	32.1%	23.0%
Structural Iron And Steel Workers	42,011	15.3%	13.2%
Other Construction And Related Workers	36,352	27.1%	26.6%
Pipelayers	35,510	22.7%	30.6%
construction and building inspectors	33,620	9.9%	4.7%
Helpers, Construction Trades	33,494	28.4%	34.2%
Plasterers And Stucco Masons	29,157	47.4%	46.0%
Fence Erectors	28,988	26.9%	29.9%
Glaziers	25,811	10.6%	9.6%
Elevator Installers And Repairers	21,177	11.9%	2.2%
Surface Mining Machine Operators And Earth Drillers	20,468	8.1%	22.0%
Solar Photovoltaic Installers	14,531	18.1%	12.5%
Boilermakers	5,112	2.4%	20.1%
Hazardous Materials Removal Workers	3,576	36.2%	29.0%
Explosives Workers, Ordnance Handling Experts	1,701	0.0%	14.9%
Underground Mining Machine Operators	1,175	11.8%	6.4%
Other Extraction Workers	828	23.7%	7.2%
Rail-Track Laying And Maintenance Equipment Operatc	484	0.0%	0.0%
Derrick, Rotary Drill, And Service Unit Operators	394	0.0%	9.6%

Source: the 2018 ACS, PUMS, NAHB estimates

Table 2 shows that immigrants are concentrated in trades that do not require years of education. Immigrants account for half of drywall/ceiling tile installers, a trade where 45% of workers do not have a high school diploma. Over 47% of all plasterers/stucco masons and painters are immigrants. Workers with no high school diploma make up 46% and 36% of these trades, respectively.

The construction occupations 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 2% of elevator installers/repairers, less than 5% of construction and building inspectors, and 8% of electricians did not graduate from high school.

In addition to drywall/ceiling installers, plasterers/stucco masons and painters, the construction occupations with the highest presence of immigrants are roofers, carpet/floor/tile installers and brickmasons. The share of immigrants in these trades is 40% and higher. Between 32 and 42% 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, heavy vehicle and mobile equipment 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 17%, respectively. Only 11% of chief executives in construction are foreign-born. The immigrant share is as low as 10% among sales representatives and secretaries, 8% among book keepers and accountants, and 6% among general managers.

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

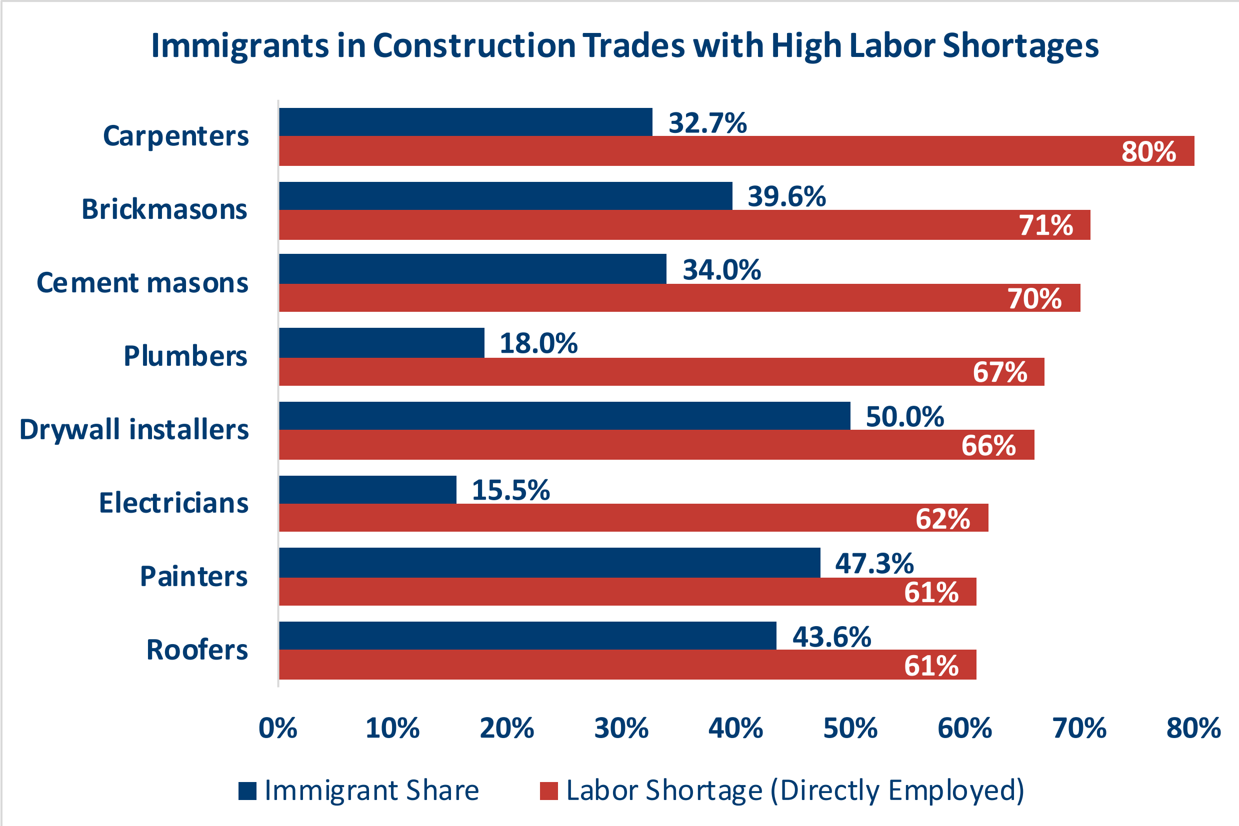
Occupation	Total	Immigrants' Share	No High School Diploma
Construction Managers	695,498	13%	7%
Other Managers	495,065	17%	10%
Heating, Air Conditioning, And Refrigeration	336,627	16%	11%
Driver/Sales Workers And Truck Drivers	208,039	15%	20%
Secretaries And Administrative, Except Legal,	196,180	10%	5%
Chief Executives And Legislators	107,687	11%	4%
Sales Representatives Of Services	101,633	10%	4%
Welding, Soldering, And Brazing Workers	94,762	18%	14%
Cost Estimators	90,417	10%	3%
Bookkeeping, Accounting, And Auditing Clerks	84,569	8%	3%
Civil Engineers	82,980	17%	1%
Accountants And Auditors	78,300	15%	0%
Heavy Vehicle And Mobile Equipment Service	70,636	10%	15%
Office Clerks, General	67,460	11%	7%
General And Operations Managers	49,160	6%	7%

Source: 2018 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 2019) survey showed even more acute shortages, with over 80% of builders reporting shortages of carpenters and framing crews directly employed by their firms.

Figure 5.



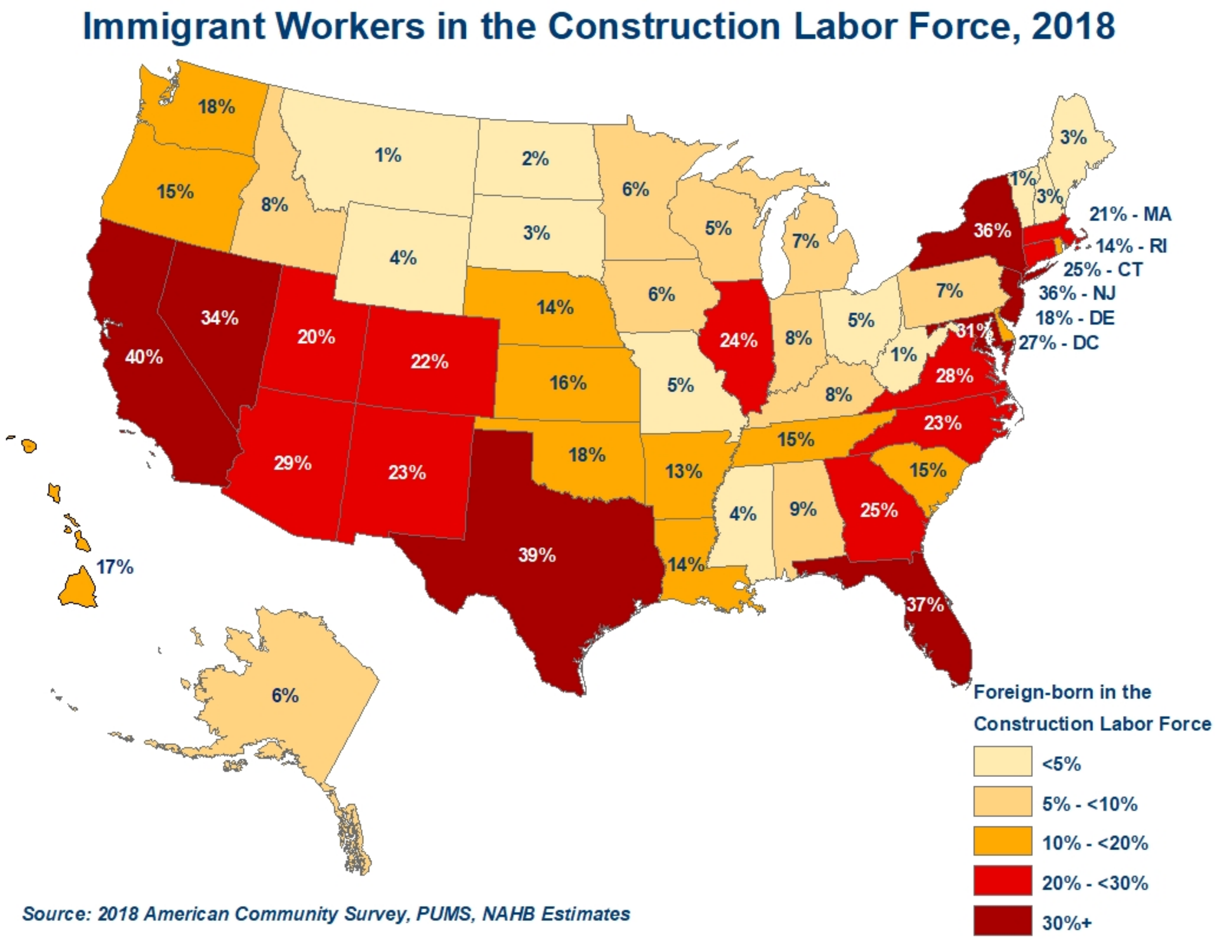
Source: 2018 ACS PUMS/NAHB estimates, July 2019 NAHB/Wells Fargo HMI Survey.

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, Florida, and New York. 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 Texas take the lead on the state list with close to 40% of the construction labor force coming from abroad (Figure 6). The foreign-born share is similarly high in Florida, New Jersey, and New York, between 36 and 37%. In Nevada, one of out three workers in construction is foreign-born.

Figure 6.



However, the reliance on foreign-born labor is also evident outside of these traditional immigrant magnets. This is evident in states like Maryland, Arizona, and Virginia, where immigrants, as of 2018, account for between 28 and 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, 2018

State	Number of Workers, 2018	Place of Birth						Change since 2007		
		US	Mexico	Americas	Asia	Europe	Other	Overall	US	Immigrants
AL	152,636	91%	8%	1%	0%	0%	0%	-18%	-20%	7%
AK	24,883	94%	0%	3%	1%	1%		-13%	-14%	-7%
AZ	230,641	71%	25%	2%	1%	1%	0%	-29%	-22%	-43%
AR	97,807	87%	9%	3%	0%	0%		-7%	-8%	-5%
CA	1,300,407	60%	25%	8%	5%	2%	0%	-11%	-8%	-15%
CO	244,710	78%	18%	3%	1%	1%	0%	-8%	-8%	-8%
CT	115,485	75%	3%	16%	1%	5%	1%	-10%	-11%	-7%
DE	32,418	82%	8%	6%	4%	0%		-14%	-24%	97%
DC	11,258	73%	1%	20%	1%	3%	2%	11%	49%	-34%
FL	795,380	63%	6%	28%	1%	2%	0%	-13%	-19%	1%
GA	350,740	75%	14%	9%	1%	1%	1%	-18%	-18%	-20%
HI	56,614	83%	1%	3%	12%	0%	1%	3%	6%	-11%
ID	68,176	92%	7%	1%		0%		-12%	-13%	9%
IL	364,585	76%	15%	1%	1%	7%	0%	-22%	-22%	-20%
IN	202,865	92%	5%	2%	0%	0%	0%	-8%	-10%	8%
IA	104,858	94%	4%	0%	1%	0%	1%	-7%	-9%	34%
KS	95,488	84%	12%	3%	0%	1%	0%	8%	5%	26%
KY	130,294	92%	4%	3%	1%	0%	0%	-10%	-14%	146%
LA	179,255	86%	5%	8%	1%	0%		-8%	-14%	43%
ME	47,936	97%		0%	1%	1%	1%	-12%	-13%	-2%
MD	226,918	69%	4%	23%	2%	1%	1%	-7%	-18%	30%
MA	218,844	79%	0%	13%	2%	5%	1%	-3%	-7%	17%
MI	270,499	93%	4%	1%	1%	1%	0%	-12%	-14%	27%
MN	184,593	94%	3%	1%	0%	1%	0%	-11%	-12%	-11%
MS	83,595	96%	3%	1%			1%	-23%	-21%	-45%
MO	204,651	95%	3%	1%	0%	1%		-12%	-14%	121%
MT	36,959	99%	1%		0%	0%	0%	-25%	-25%	51%
NE	74,888	86%	8%	4%	0%	1%	0%	13%	6%	89%
NV	113,282	66%	27%	5%	1%	0%	0%	-20%	-17%	-25%
NH	49,894	97%	0%	2%	0%	1%	0%	-17%	-15%	-43%
NJ	284,761	64%	4%	22%	2%	7%	1%	-8%	-11%	-2%
NM	68,786	77%	23%	0%				-21%	-18%	-28%
NY	571,454	64%	4%	20%	5%	7%	1%	-7%	-9%	-3%
NC	341,937	77%	15%	6%	1%	1%	0%	-15%	-17%	-7%
ND	28,535	98%		1%	1%			5%	3%	
OH	328,709	95%	2%	1%	1%	1%	0%	-11%	-12%	20%
OK	126,482	82%	14%	3%	0%	0%	0%	6%	1%	37%
OR	139,358	85%	10%	3%	1%	1%	0%	-8%	-11%	13%
PA	396,550	93%	1%	3%	1%	2%	0%	-6%	-8%	30%
RI	30,443	86%	0%	10%	0%	3%	1%	-14%	-17%	12%
SC	166,822	85%	10%	4%	1%	1%	0%	-13%	-16%	14%
SD	31,118	97%	1%	2%		0%	0%	22%	19%	206%
TN	216,076	85%	9%	5%	0%	1%	0%	-8%	-13%	35%
TX	1,239,484	61%	30%	7%	1%	0%	0%	16%	19%	12%
UT	118,504	80%	14%	4%	0%	0%	1%	-7%	-8%	-5%
VT	25,124	99%		1%		0%		-18%	-15%	-80%
VA	307,077	72%	5%	20%	3%	1%	0%	-5%	-13%	29%
WA	274,785	82%	9%	3%	2%	3%	0%	2%	-3%	26%
WV	48,087	99%		0%	0%	0%	0%	-25%	-25%	200%
WI	187,791	95%	3%	1%	0%	1%		-4%	-4%	-12%
WY	29,699	96%	3%	0%	0%			15%	20%	-41%

The last three columns of Table 4 highlights the uneven losses in the construction labor force that took place across states since 2007. The construction workforce (including both native and foreign-born workers) in Arizona is now 29% smaller than in 2007. The state experienced particularly large losses of immigrant workers, their numbers are down 43% since 2007. Montana and West Virginia that barely have any immigrants in construction lost a quarter of their workforce. Their persistent losses are entirely due to native-born workers not returning to construction.

While most states were unable to restore their construction work force to the 2007 levels, ten states registered labor gains enough to surpass it. All ten states, except for Washington, stand out for being the only states where the number of native-born workers in construction now exceeds the 2007 levels.

The building industry of North and South Dakota continued to absorb new workers, largely native-born, throughout the local oil boom. Neighboring Wyoming, Nebraska, and Kansas also expanded their construction labor force. Texas, where housing is booming, now has a construction workforce that is 16% larger compared to 2007, with both native-born and immigrant workers now exceeding their pre-recession totals. The remaining four states that managed to surpass the 2007 construction workforce levels are DC, Oklahoma, Hawaii and Washington.