



## **Immigrant Workers in the Construction Labor Force**

*NAHB Economics*

*February 3, 2015*

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. [Our earlier research published in January](#) this year shows that immigrants have been an important source of new recruits to the construction industry. The immigrant labor flow has been highly variable, adjusting quickly to the changing economic environment and moving in sync with the single-family construction business cycle.

This article examines the detailed 2013 American Community Survey (ACS) data to study what regions and construction occupations immigrants are concentrated in. The analysis shows that while foreign-born workers represent a substantial component of the US construction labor force, accounting for almost 23 percent, their share is even higher in construction trades, reaching 28 percent.

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 41 percent of the construction workforce in California and close to 40 percent in Texas. In New York, 35 percent of the construction labor force are foreign-born and in Nevada, one in 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 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.

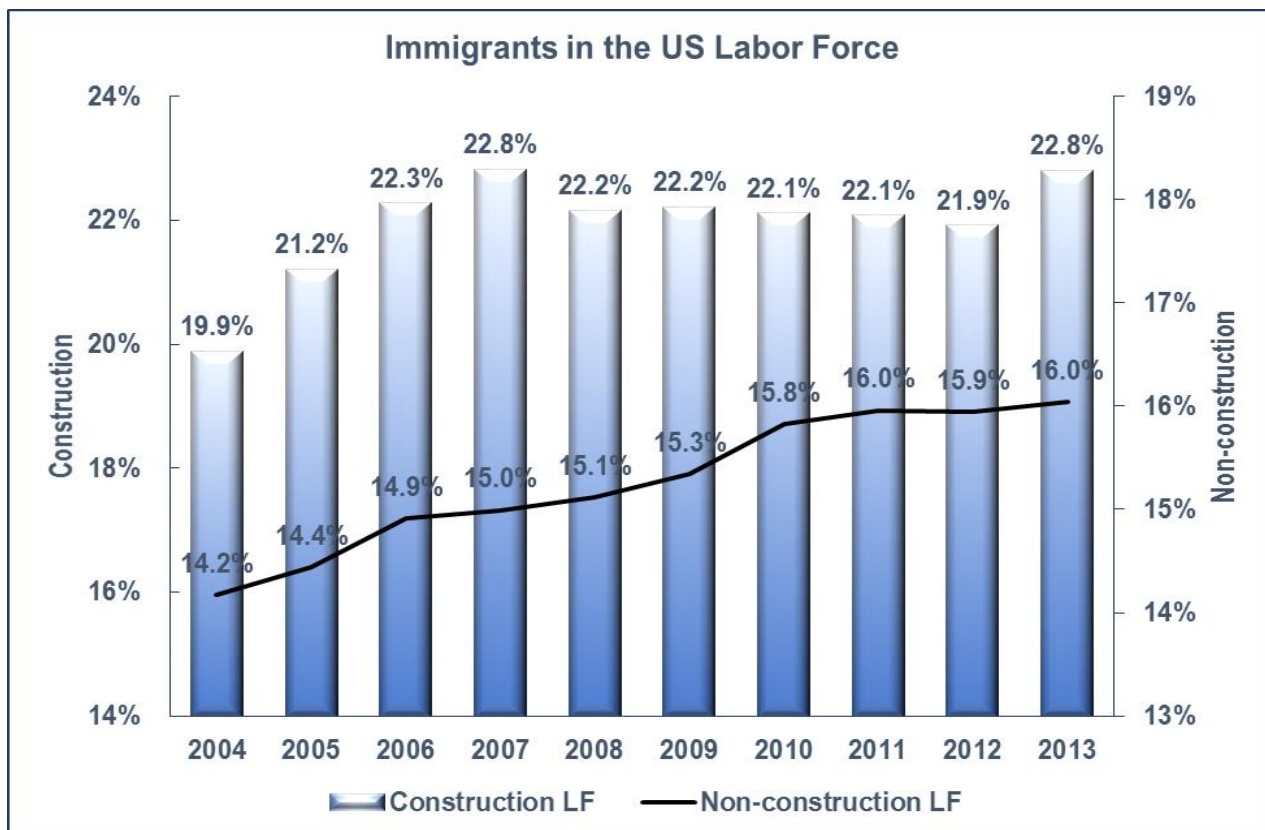
As an annual survey, the ACS allows for tracking over time changes in the construction labor force. To analyze historical trends, NAHB Economics uses the 2004–2013 ACS Public Use Microdata Samples (PUMS). To analyze the composition of the construction labor force, this research relies on the most recent 2013 ACS.

### Where Construction Workers Come From

The 2004-2013 ACS data show that the aging US workforce grew more dependent on foreign born labor with its share rising from 14 percent in 2004 to 16 percent in 2013. The reliance of the construction industry on foreign born workers is even greater. Immigrants now account for 23 percent 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 percent in 2004 to almost 23 percent in 2007 (see Figure 1).

Even during the housing downturn the share of immigrants in construction remained relatively high, fluctuating around 22 percent. In 2013, as immigrants started to return to the construction industry, the share started to rise again, reaching almost 23 percent, the highest level since 2007.

**Figure 1. Share of Immigrants in the US Labor Force**

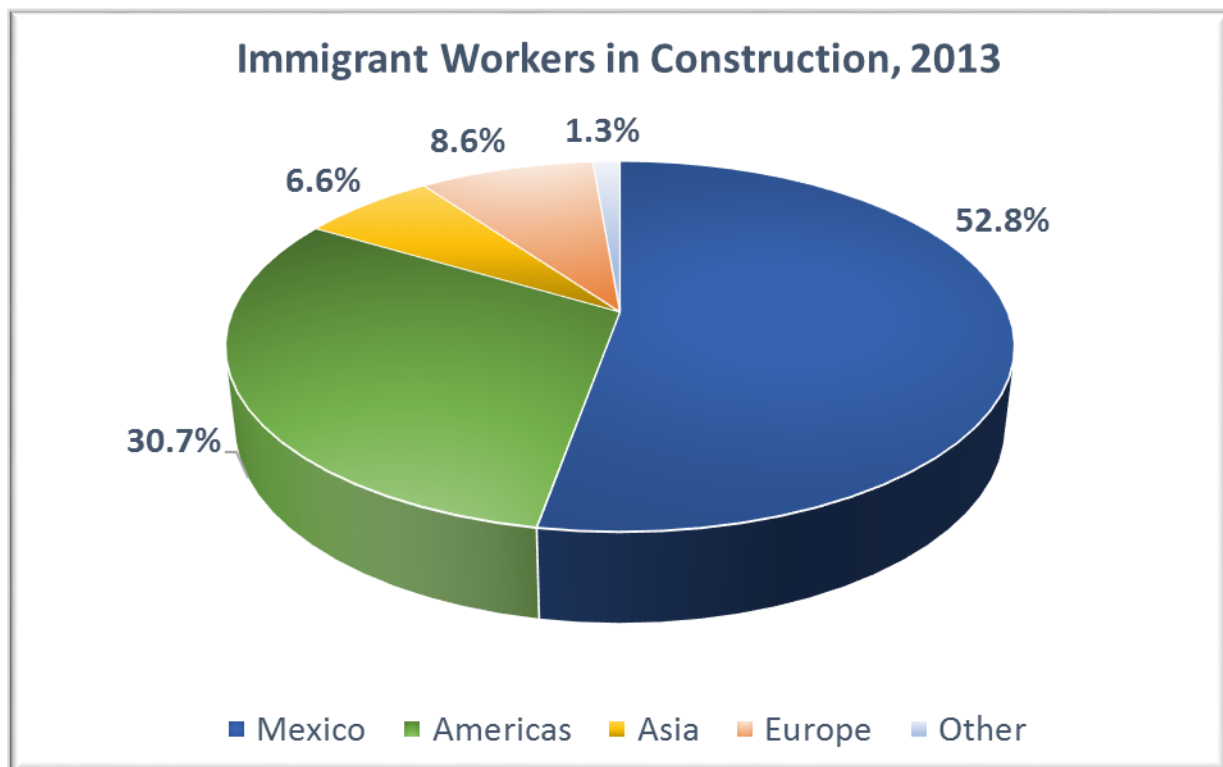


Source: 2004-2013 ACS PUMS, NAHB estimates

The number of foreign-born workers in construction is now close to 2.3 million, this is still almost half a million immigrants fewer than in 2007. By comparison, close to 1.7 million native-born workers left the construction labor force during the housing downturn as their number declined from 9.4 million in 2006 to 7.7 million in 2011. 2013 became the first year since 2007 to register the rising number of immigrants in the construction labor force, while the number of native born workers still did not show any gains.

Figure 2 illustrates where immigrant construction workers come from. The majority, 53 percent, come from Mexico. An additional 31 percent come from other countries in the Americas. And even though the share of Mexican workers declined slightly since 2004, the increase in the share of immigrants from the rest of Americas offset the declining share of Mexico-born immigrants. Together, they account for almost 84 percent of the immigrant construction labor force. Europeans make up close to 9 percent, and an additional 7 percent come from Asia.

**Figure 2. Immigrant Workers in Construction, 2013**



Source: the 2013 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 percent 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 27 percent did not study beyond high school. By comparison, only 13 percent 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 percent.

**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         | 12.8%                         | 35.3%               | 39.6%        | 10.5%             | 1.9%                            | 7,721,077  |
| Foreign Born   | 48.6%                         | 27.7%               | 16.1%        | 5.6%              | 2.0%                            | 2,279,291  |
| All            | 20.9%                         | 33.6%               | 34.2%        | 9.4%              | 1.9%                            | 10,000,368 |

*Source: the 2013 ACS, PUMS, NAHB estimates*

The 2013 ACS data also show that the construction industry attracts younger immigrants with half of them age 39 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 42. Immigrants who arrived to the US since 2000 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 32 are construction trades, but they account for more than two thirds of the construction labor force. The other third of workers are in finance, sales, administration and other off-site activities<sup>1</sup>.

Immigrants account for 28% 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

---

<sup>1</sup> Note, that managers, heating, ventilation, air conditioning, and refrigeration (NVACR) mechanics and installers are not included in the construction group.

construction occupations, laborers and carpenters, account for about 30 percent of the construction labor force. More than a third of all construction laborers and 28 percent of carpenters are of foreign born origin (see Table 2).

**Table 2. Immigrants in Construction Occupations**

| Construction Occupation  | Total     | No High School Diploma | Immigrants' Share |
|--|-----------|------------------------|-------------------|
| Construction laborers  | 1,849,815 | 30.7%                  | 34.1%             |
| Carpenters   | 1,097,577 | 25.2%                  | 27.6%             |
| First-line supervisors of construction trades and extraction workers   | 669,579   | 15.3%                  | 14.7%             |
| Painters and paperhangers  | 575,490   | 36.7%                  | 42.6%             |
| Electricians   | 560,499   | 9.4%                   | 14.1%             |
| Pipelayers, plumbers, pipefitters, and steamfitters  | 451,250   | 16.0%                  | 17.2%             |
| Construction equipment operators except paving, surfacing, and tamping equipment operators                                 | 279,261   | 20.9%                  | 10.8%             |
| Roofers  | 237,133   | 45.6%                  | 43.5%             |
| Brickmasons, blockmasons, stonemasons, and reinforcing iron and rebar workers  | 153,604   | 34.3%                  | 34.8%             |
| Drywall installers, ceiling tile installers, and tapers  | 152,939   | 43.3%                  | 49.2%             |
| Carpet, floor, and tile installers and finishers   | 152,658   | 37.3%                  | 41.0%             |
| Highway maintenance workers  | 86,412    | 11.9%                  | 8.8%              |
| Cement masons, concrete finishers, and terrazzo workers  | 71,361    | 41.7%                  | 35.6%             |
| Sheet metal workers  | 65,880    | 17.0%                  | 15.6%             |
| Structural iron and steel workers  | 55,486    | 15.5%                  | 9.9%              |
| Helpers, construction trades   | 49,823    | 39.3%                  | 32.5%             |
| Insulation workers   | 43,729    | 28.8%                  | 34.4%             |
| Plasterers and stucco masons   | 36,339    | 47.3%                  | 59.0%             |
| Miscellaneous construction workers, including solar photovoltaic installers, septic tank servicers and sewer pipe cleaners | 33,093    | 26.8%                  | 26.7%             |
| Construction and building inspectors   | 31,331    | 5.2%                   | 7.8%              |
| Fence erectors   | 30,731    | 39.3%                  | 24.0%             |
| Glaziers   | 27,758    | 21.1%                  | 13.3%             |
| Earth drillers, except oil and gas   | 20,266    | 18.3%                  | 14.8%             |
| Elevator installers and repairers  | 19,792    | 2.7%                   | 6.4%              |
| Paving, surfacing, and tamping equipment operators   | 14,608    | 23.8%                  | 10.6%             |
| Boilermakers   | 8,032     | 9.5%                   | 6.7%              |
| Hazardous materials removal workers  | 3,841     | 23.1%                  | 43.4%             |
| Miscellaneous extraction workers, including roof bolters and helpers   | 1,380     | 11.8%                  | 8.6%              |
| Explosives workers, ordnance handling experts, and blasters  | 1,173     | 47.9%                  | 27.5%             |
| Rail-track laying and maintenance equipment operators  | 959       | 34.1%                  | 0.0%              |
| Mining machine operators   | 752       | 0.0%                   | 27.9%             |
| Derrick, rotary drill, and service unit operators, and roustabouts, oil, gas, and mining                                   | 510       | 48.0%                  | 0.0%              |

Source: the 2013 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 43 percent of workers do not have a high school diploma. About 37 percent of all carpet/floor/tile installers and painters did not finish high school, immigrants account for 41 percent 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 5 percent of construction and building inspectors, less than 3 percent of elevator installers/repairers and 9 percent of electricians did not graduate from high school.

The construction occupations with the highest presence of immigrants are plasterers/stucco masons, drywall installers and roofers. The share of immigrants in these trades exceeds 59, 49 and 43 percent respectively. Between 43 and 47 percent 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 and welding/soldering/brazing workers). The immigrant presence in these trades looks less relevant. While the overall share of immigrants in the construction labor force is 23 percent, their share among construction and miscellaneous managers – the top two most common non-construction trades in the industry - is under 12 and 14 percent respectively, it goes further down to 9 percent among chief executives, and to 7 percent among general and operations managers.

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

| Occupation  | Total   | No High School Diploma | Immigrants' Share |
|---|---------|------------------------|-------------------|
| Construction managers   | 563,698 | 7.2%                   | 11.5%             |
| Miscellaneous managers  | 347,088 | 8.6%                   | 13.6%             |
| Heating, air conditioning, and refrigeration mechanics and installers | 271,805 | 12.6%                  | 12.3%             |
| Secretaries and administrative assistants                             | 210,156 | 5.0%                   | 7.4%              |
| Driver/sales workers and truck drivers                                | 194,605 | 23.3%                  | 13.4%             |
| Chief executives and legislators                                      | 101,213 | 3.5%                   | 9.0%              |
| Welding, soldering, and brazing workers                               | 93,006  | 19.1%                  | 19.7%             |
| Bookkeeping, accounting, and auditing clerks                          | 83,527  | 3.1%                   | 7.8%              |
| Sales representatives, services, all other                            | 83,487  | 4.6%                   | 5.8%              |
| Cost estimators   | 80,829  | 6.3%                   | 7.8%              |
| Civil engineers   | 72,142  | 0.7%                   | 17.3%             |
| Heavy vehicle and mobile equipment service technicians and mechanics  | 68,183  | 14.1%                  | 12.3%             |
| Accountants and auditors  | 60,886  | 0.9%                   | 7.6%              |
| Office clerks, general  | 49,862  | 7.4%                   | 9.1%              |
| General and operations managers                                       | 41,854  | 4.3%                   | 7.4%              |

Source: 2013 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 percent of surveyed builders were still reporting some shortages of labor in these trades in June 2012, even though the shortages were not nearly as severe 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, with more than a half of respondents reporting shortages of framing crews and carpenters-rough subcontractors. By June of 2014, 63 percent of builders reported shortages of labor for rough carpentry employed directly by their firms.

### **Immigrant Construction Workers across States**

Traditionally, construction immigrants are concentrated in a few populous states, with more than half of all immigrant construction workers residing in California, Texas, New York, and Florida. These states are most reliant on foreign-born labor as from 30 to more than 40 percent of all construction industry workforce in these states come from abroad.

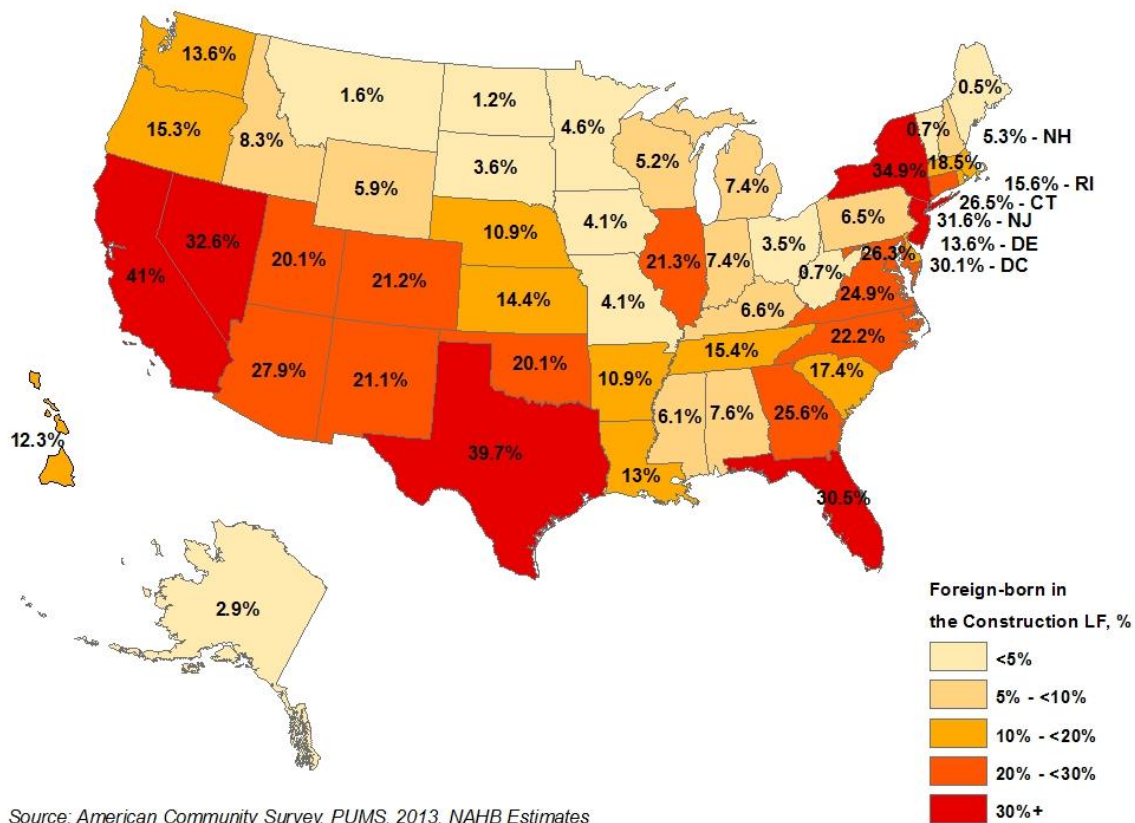
California takes the lead on the state list with 41 percent of its construction labor force coming from abroad (see the state map below). The foreign-born share is similarly high in Texas, reaching close to 40 percent. In New York, 35 percent of the construction work force is foreign-

born, and in Florida the share exceeds 30 percent. In addition, New Jersey and District of Columbia register shares of immigrants in excess of 30 percent. In Nevada, one in three construction workers come from abroad.

However, the reliance on foreign born labor continues to spread outside of these traditional immigrant magnets. This is evident in states like Connecticut, Georgia, and Maryland, where immigrants, as of 2013, account for more than a quarter 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 Midwest (see Table 5).

### Immigrant Workers in the Construction Labor Force, 2013



Source: American Community Survey, PUMS, 2013, NAHB Estimates

The last column of Table 4 highlights the uneven losses in the construction labor force that took place across states since 2007. More than a third of all building industry workforce, native and foreign born workers included, left the industry in Nevada and Arizona. Losses of similar proportions took place in Florida and Utah where about 30 percent of all workers left the industry. All four 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. Nevada lost 43 percent of foreign born construction workers and Florida saw its construction immigrant labor pool shrink by a third.



**Table 4. Construction Labor Force by State, 2013**

| State | Place of Birth |        |          |       |        |       | Number of Workers, 2013 | Change since 2007 |
|-------|----------------|--------|----------|-------|--------|-------|-------------------------|-------------------|
|       | US             | Mexico | Americas | Asia  | Europe | Other |                         |                   |
| AK    | 97.1%          | 0.4%   | 1.8%     | 0.0%  | 0.7%   | 0.0%  | 35,121                  | 22.4%             |
| AL    | 92.4%          | 5.6%   | 1.4%     | 0.2%  | 0.1%   | 0.2%  | 147,542                 | -20.4%            |
| AR    | 89.1%          | 6.9%   | 3.1%     | 0.3%  | 0.6%   | 0.0%  | 89,748                  | -15.1%            |
| AZ    | 72.1%          | 24.0%  | 2.4%     | 0.5%  | 0.7%   | 0.3%  | 215,862                 | -33.8%            |
| CA    | 59.0%          | 27.0%  | 7.3%     | 4.2%  | 2.2%   | 0.3%  | 1,169,816               | -19.5%            |
| CO    | 78.8%          | 17.5%  | 1.9%     | 0.3%  | 1.3%   | 0.1%  | 204,149                 | -23.0%            |
| CT    | 73.5%          | 2.4%   | 14.8%    | 0.8%  | 8.2%   | 0.3%  | 115,220                 | -10.1%            |
| DC    | 69.9%          | 0.0%   | 23.3%    | 0.0%  | 1.2%   | 5.6%  | 10,064                  | -0.7%             |
| DE    | 86.4%          | 8.6%   | 3.7%     | 0.0%  | 1.0%   | 0.4%  | 29,115                  | -23.0%            |
| FL    | 69.5%          | 6.0%   | 21.7%    | 0.9%  | 1.6%   | 0.3%  | 644,866                 | -29.1%            |
| GA    | 74.4%          | 16.4%  | 7.4%     | 0.8%  | 0.8%   | 0.1%  | 314,095                 | -26.8%            |
| HI    | 87.7%          | 1.0%   | 0.3%     | 10.1% | 0.2%   | 0.7%  | 49,963                  | -9.2%             |
| IA    | 95.9%          | 2.1%   | 0.7%     | 1.0%  | 0.3%   | 0.0%  | 104,147                 | -8.0%             |
| ID    | 91.7%          | 7.6%   | 0.2%     | 0.0%  | 0.4%   | 0.0%  | 56,424                  | -26.8%            |
| IL    | 78.7%          | 10.9%  | 1.3%     | 1.0%  | 8.0%   | 0.2%  | 355,339                 | -23.6%            |
| IN    | 92.6%          | 5.6%   | 1.0%     | 0.4%  | 0.3%   | 0.0%  | 197,808                 | -10.7%            |
| KS    | 85.6%          | 10.8%  | 3.1%     | 0.2%  | 0.1%   | 0.3%  | 92,192                  | 3.9%              |
| KY    | 93.4%          | 5.4%   | 0.9%     | 0.0%  | 0.2%   | 0.0%  | 127,655                 | -11.4%            |
| LA    | 87.0%          | 4.9%   | 6.7%     | 0.9%  | 0.3%   | 0.2%  | 184,193                 | -5.9%             |
| MA    | 81.5%          | 1.3%   | 9.5%     | 1.5%  | 5.8%   | 0.4%  | 198,929                 | -11.8%            |
| MD    | 73.7%          | 4.6%   | 18.3%    | 2.0%  | 0.9%   | 0.5%  | 207,250                 | -15.5%            |
| ME    | 99.5%          | 0.0%   | 0.4%     | 0.0%  | 0.0%   | 0.1%  | 51,060                  | -6.6%             |
| MI    | 92.6%          | 2.9%   | 1.5%     | 1.3%  | 1.6%   | 0.1%  | 244,650                 | -20.8%            |
| MN    | 95.4%          | 1.7%   | 1.5%     | 0.5%  | 0.7%   | 0.1%  | 164,352                 | -21.2%            |
| MO    | 95.9%          | 2.1%   | 0.8%     | 0.5%  | 0.6%   | 0.1%  | 188,500                 | -18.5%            |
| MS    | 93.9%          | 4.7%   | 1.2%     | 0.1%  | 0.0%   | 0.0%  | 87,723                  | -19.0%            |
| MT    | 98.4%          | 1.1%   | 0.5%     | 0.0%  | 0.0%   | 0.0%  | 41,781                  | -15.1%            |
| NC    | 77.8%          | 14.7%  | 6.2%     | 0.4%  | 0.7%   | 0.1%  | 310,934                 | -22.9%            |
| ND    | 98.8%          | 0.0%   | 0.0%     | 0.0%  | 0.0%   | 1.2%  | 34,856                  | 28.2%             |
| NE    | 89.1%          | 8.9%   | 1.6%     | 0.0%  | 0.1%   | 0.3%  | 70,095                  | 5.5%              |
| NH    | 94.7%          | 0.0%   | 3.7%     | 0.5%  | 1.1%   | 0.0%  | 49,233                  | -17.6%            |
| NJ    | 68.4%          | 4.9%   | 17.2%    | 2.6%  | 6.3%   | 0.6%  | 273,051                 | -12.0%            |
| NM    | 78.9%          | 19.6%  | 1.1%     | 0.1%  | 0.4%   | 0.0%  | 68,015                  | -21.4%            |
| NV    | 67.4%          | 26.0%  | 4.3%     | 1.3%  | 0.7%   | 0.3%  | 89,499                  | -36.8%            |
| NY    | 65.1%          | 4.4%   | 19.0%    | 4.1%  | 6.6%   | 0.8%  | 583,080                 | -4.8%             |
| OH    | 96.5%          | 1.6%   | 0.7%     | 0.3%  | 0.7%   | 0.1%  | 312,507                 | -15.4%            |
| OK    | 79.9%          | 17.5%  | 1.6%     | 0.8%  | 0.1%   | 0.2%  | 128,718                 | 7.9%              |
| OR    | 84.7%          | 10.6%  | 1.4%     | 1.0%  | 2.2%   | 0.1%  | 119,522                 | -20.9%            |
| PA    | 93.5%          | 0.6%   | 2.5%     | 1.4%  | 1.9%   | 0.1%  | 378,740                 | -10.6%            |
| RI    | 84.4%          | 2.3%   | 7.1%     | 0.4%  | 4.6%   | 1.2%  | 30,327                  | -14.6%            |
| SC    | 82.6%          | 11.1%  | 4.7%     | 0.6%  | 0.8%   | 0.3%  | 148,466                 | -22.2%            |
| SD    | 96.4%          | 0.6%   | 3.0%     | 0.0%  | 0.0%   | 0.0%  | 31,604                  | 23.5%             |
| TN    | 84.6%          | 9.7%   | 4.6%     | 0.3%  | 0.6%   | 0.3%  | 195,348                 | -17.0%            |
| TX    | 60.3%          | 32.1%  | 6.0%     | 1.0%  | 0.5%   | 0.1%  | 998,263                 | -6.8%             |
| UT    | 79.9%          | 14.9%  | 2.4%     | 0.7%  | 0.4%   | 1.6%  | 91,286                  | -28.6%            |
| VA    | 75.1%          | 5.3%   | 15.0%    | 2.3%  | 1.1%   | 1.2%  | 275,900                 | -14.4%            |
| VT    | 99.3%          | 0.0%   | 0.3%     | 0.0%  | 0.0%   | 0.4%  | 24,433                  | -20.6%            |
| WA    | 86.4%          | 6.9%   | 1.6%     | 1.5%  | 3.0%   | 0.6%  | 220,983                 | -18.3%            |
| WI    | 94.8%          | 3.9%   | 0.3%     | 0.4%  | 0.6%   | 0.0%  | 162,026                 | -17.6%            |
| WV    | 99.3%          | 0.1%   | 0.0%     | 0.2%  | 0.4%   | 0.0%  | 53,805                  | -15.8%            |
| WY    | 94.1%          | 4.7%   | 0.6%     | 0.0%  | 0.5%   | 0.1%  | 22,113                  | -14.2%            |

While most states saw their construction work force shrink, the building industry of North and South Dakota, fueled by the local oil boom, and Alaska continued to absorb new workers through 2013 but largely native-born.

In summary, analysis of the 2013 ACS data highlights the significant presence of foreign born labor in the construction work force across the United States. They are concentrated in positions that require less formal education. 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. States that traditionally rely on foreign born labor but lost its significant share during the housing downturn are most likely to experience difficulties in filling out construction job vacancies once home building takes off.