

# The Contributions of New Americans in Washington

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# Demographics

**A**fter decades when states such as California, Florida, and New York attracted the majority of immigrants to the United States, Washington has emerged in recent decades as an increasingly popular destination for America's immigrants. In 1990, immigrants accounted for 6.6 percent of Washington's total population. By 2010, that share had more than doubled, reaching 13.3 percent. And between 2010 and 2014, Washington's foreign-born population increased by an additional 35,200 people.

Today, almost 930,000 immigrants call Washington home. These new Americans make up more than one out of eight residents of the state. They also play outsized roles as everything from computer programmers to farm laborers, making them critical contributors to Washington's economic success overall.

Today, almost **930,000 immigrants** call Washington home.

## 929,505

Washington residents were born abroad, more than any other state.



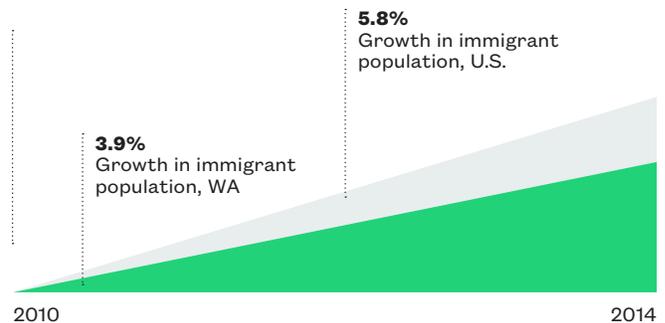
Share of Washington residents born abroad



Share of U.S. residents born abroad

## 35,241

people immigrated to Washington between 2010 and 2014.

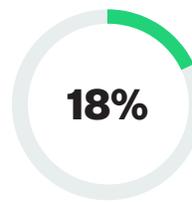


# The Role of Immigrants as Entrepreneurs

**57,780**

immigrants in Washington are self-employed

Immigrant-owned businesses generated **\$1.2B** in business income in 2014.



Share of entrepreneurs in Washington who are immigrants

**141,483** people in Washington are employed at firms owned by immigrants.

\* This is a conservative estimate that excludes large, publicly owned firms.

**G**iven that the act of picking up and moving to another country is inherently brave and risky, it should be little surprise that immigrants have repeatedly been found to be more entrepreneurial than the U.S. population as a whole.<sup>1</sup> According to The Kauffman Foundation, a nonprofit group that studies entrepreneurship, immigrants were almost twice as likely to start a new business in 2015 than the native-born population.<sup>2</sup> The companies they founded ranged from small businesses on Main Street to large firms responsible for thousands of American jobs. Recent studies, for instance, have indicated that immigrants own more than half of the grocery stores in America and 48 percent of nail salons.<sup>3</sup> Foreign-born entrepreneurs are also behind 51 percent of our country's billion dollar startups,<sup>4</sup> and a substantial share of our Fortune 500 firms.

In 2010, roughly **one in 10** American workers with jobs at private firms were employed at immigrant-founded companies.

The super-charged entrepreneurial activity of immigrants provides real and meaningful benefits to everyday Americans. In 2010, roughly one in 10 American workers with jobs at private firms were employed at immigrant-founded companies. Such businesses also generated more than \$775 billion in annual business revenue that year.<sup>5</sup> In Washington, like the country as a whole, immigrants are currently punching above their weight class as entrepreneurs. Foreign-born workers currently make up 17.9 percent of all entrepreneurs in the state, despite accounting for 13.2 percent of Washington's population. Their businesses generated \$1.2 billion in revenue in 2014. Washington

firms with at least one immigrant owner also provided jobs to roughly 141,000 Americans in 2007.<sup>6</sup>

## **Nordstrom, a Fortune 500 fashion retailer headquartered in Seattle, was originally founded by John W. Nordstrom, an immigrant from Sweden.**

Immigrant entrepreneurs have long been a critical part of Washington's economic success story. Nordstrom, a Fortune 500 fashion retailer headquartered in Seattle, was originally founded by John W. Nordstrom, an immigrant from Sweden. Company lore has it that Nordstrom came to New York with no knowledge of English and five dollars in his pocket. Working in mines and logging camps, he eventually made his way to Washington, where he founded a shoe store that would expand into the clothing giant it is today.<sup>7</sup> Five other Fortune 500 firms based in the state—including Costco and Amazon<sup>8</sup>—had at least one founder who either immigrated to the United States or was the child of immigrants. Together, those six companies employ more than 425,000 people globally and bring in almost \$250 billion in revenue each year.

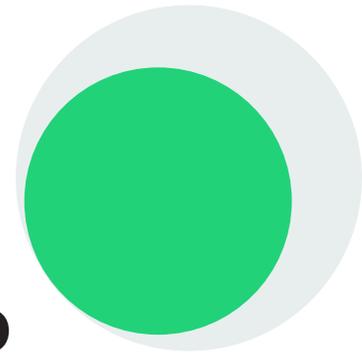
All told, immigrants and their children have played a larger role founding Fortune 500 firms in Washington than they have nationwide. Six of the 10 Fortune 500 firms based in Washington had at least one founder who was an immigrant or the child of an immigrant. For the country as a whole, the equivalent figure is 41.4 percent.

Currently, there is no visa to come to America, start a company, and create jobs for U.S. workers—even if an entrepreneur already has a business plan and has raised hundreds of thousands of dollars to support his or her idea. Trying to exploit that flaw in our system, countries around the world—from Canada to Singapore, Australia to Chile—have enacted startup visas, often with the explicit purpose of luring away entrepreneurs who want to build a U.S. business but cannot get a visa to do so.<sup>9</sup> Here in the United States, many individuals have gone to great lengths to circumnavigate the visa hurdles. Many

entrepreneurs sell a majority stake in their company and then apply for a visa as a high-skilled worker, rather than the owner of their firm. And a few enterprising venture capitalists, led by Jeff Bussgang in Boston and Brad Feld in Colorado, have launched programs that bring over foreign-born entrepreneurs to serve as “entrepreneurs in residence” at colleges and universities. Because nonprofit academic institutions are exempt from the H-1B cap, such entrepreneurs can secure their visas by working as mentors at a school, and then build their startups in their free time.

These innovative programs, which are currently available at 13 colleges and universities across the country, are already resulting in meaningful economic contributions. As of mid-2016, 23 entrepreneurs had secured visas through these programs nationally. The companies they founded had created 261 jobs and raised more than \$100 million in funding.<sup>10</sup>

**60%**



**of Fortune 500** companies based in Washington were founded by immigrants or their children.

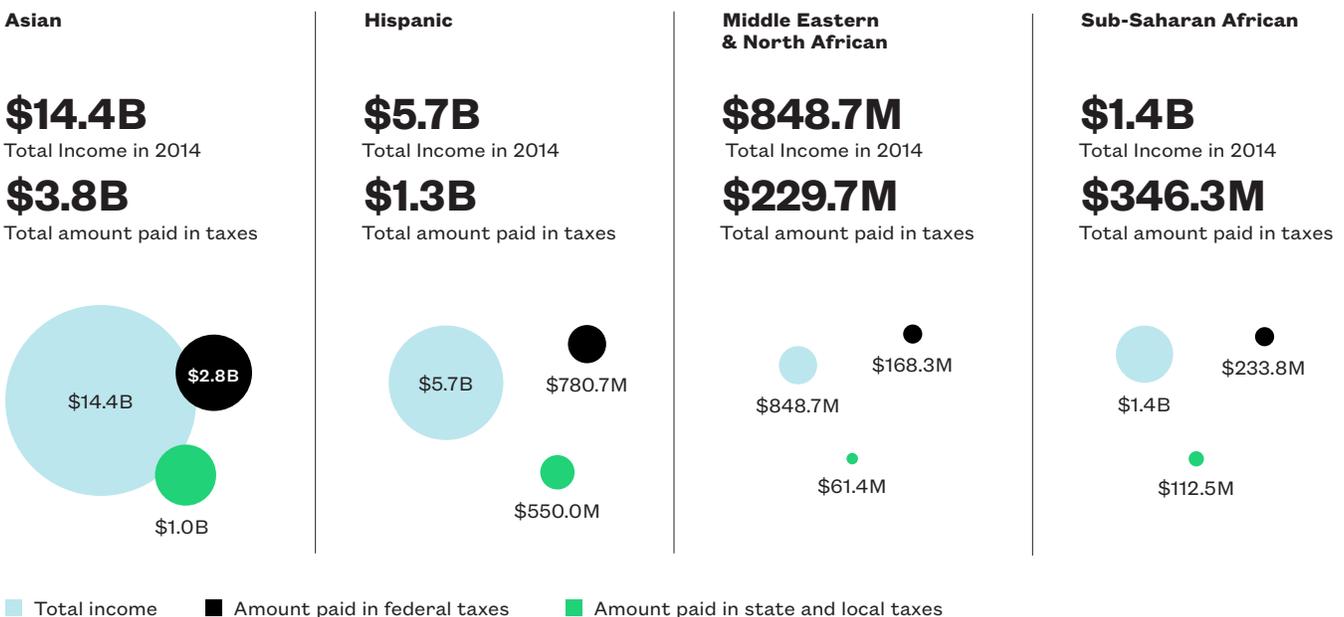
Those firms generate **\$249.9B** in annual revenue, and employ **425,359** people globally.

# Income and Tax Contributions

Immigrants in Washington play an important role contributing to the state as both taxpayers and consumers. In 2014, immigrant-led households in Washington earned \$30.9 billion dollars—or 14.3 percent of all income earned by Washingtonians that year. With those earnings, the state’s foreign-born households were able to contribute more than one in every seven dollars paid by Washington residents in state and local tax revenues, payments that support important public services such as public schools and police. Through their individual wage contributions, immigrants also paid almost \$ 3.8 billion into the Social Security and Medicare programs that year.

By spending the money they earn at businesses such as hair salons, grocery stores, and coffee shops, immigrants also support small business owners and job creation in the communities where they live. In Washington immigrants held \$ 22.8 billion in spending power in 2014, defined in this brief as the net income available to a family after paying federal, state, and local taxes. Some specific ethnic groups within the immigrant community had particular power as consumers, such as Asian immigrants.

## INCOME AND TAX CONTRIBUTIONS OF KEY GROUPS WITHIN WASHINGTON'S IMMIGRANT POPULATION, 2014



In 2014, immigrants in Washington earned **\$30.9B.**



**\$2.4B** — Went to state and local taxes...

**\$5.7B** — Went to federal taxes...

Leaving them with **\$22.8B** in remaining spending power to use at Washington businesses.

#### ENTITLEMENT CONTRIBUTIONS

Washington's immigrants also contribute to our country's entitlement programs. In 2014, through taxes on their individual wages, immigrants contributed **\$815.5M** to Medicare and **\$3.0B** to Social Security.



\$815.5M

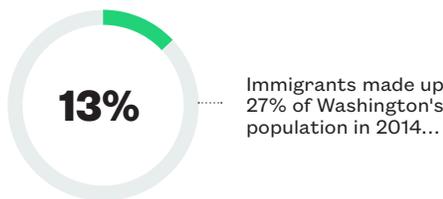
Medicare



\$3.0B

Social Security

# The Role of Immigrants in the Broader Workforce



Because they tended to be working-age,

Immigrants were **33%** more likely to work than native-born Washingtonians.



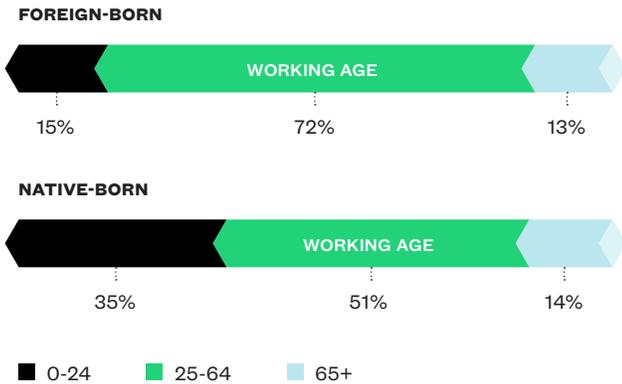
**P**eople who come to the United States often come here to work. Because of that, they frequently have skills that make them a good fit for our labor force—and a strong complement to American workers already here. In the country as a whole, immigrants are much more likely to be working-age than the U.S.-born. They also have a notably different educational profile. The vast majority of Americans – more than 79 percent of the U.S.-born population – fall into the middle of the education spectrum by holding a high school or bachelor’s degree. Immigrants, by contrast, are more likely to gravitate toward either end of the skill spectrum. They are more likely to lack a high school diploma than native born, but also more likely to have an advanced degree. This makes them good candidates for labor-intensive positions, such as housekeeping, that many more educated U.S.-born workers are less

interested in pursuing, as well as high-level positions that allow innovation-driven firms to expand and add jobs for Americans at all skill levels.

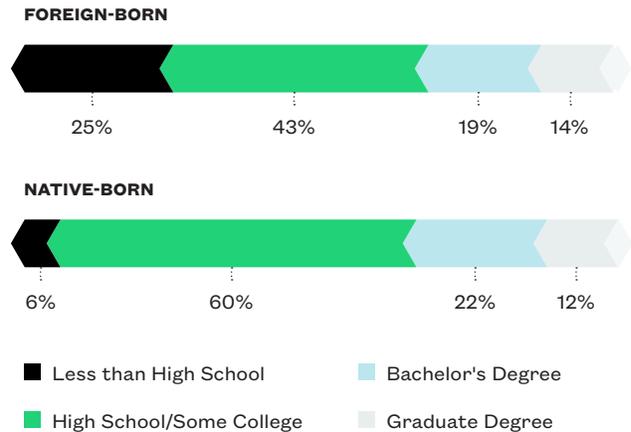
In Washington, **71.6%** of the foreign-born population is of working age, compared to just **51.0%** of the native-born population.

Both these dynamics are strong in the state of Washington. When it comes to educational attainment, immigrants in the state are 20.8 percent more likely to hold a graduate degree than natives. They are also more than three times as likely to be educated at less than a

AGE BREAKDOWN OF WASHINGTON'S FOREIGN-BORN AND NATIVE-BORN POPULATIONS, 2014



EDUCATIONAL ATTAINMENT OF WASHINGTON'S FOREIGN-BORN AND NATIVE-BORN POPULATION (AGES 25+), 2014



high-school level. The foreign-born population is also considerably more likely to be working age, which we define in this brief as ranging in age from 25 to 64. In Washington, 71.6 percent of the foreign-born population falls into that age band, while only 51.0 percent of the native-born population does. That 20.6-percentage point gap has major implications for the state’s workforce. In 2014, Washington’s immigrants were 33.0 percent more likely to be actively employed than the state’s native-born residents—a reality driven largely by the fact that a large share of the native-born population was under the age of 25. Foreign-born individuals punched above their weight class as workers as well: In 2014, they made up 16.8 percent of all employed individuals in the state, despite accounting for 13.2 percent of Washington’s population overall.

The immigrants who are working in Washington contribute to a wide range of different industries in the state—many of which are growing and important parts of the local economy. Foreign-born residents make up 30.2 percent of the employees in the state’s warehousing and storage industry. They also account for more than a third of the state’s workers in computer systems design, contributing to Washington’s sizeable technology industry, whose companies generated \$37 billion in revenues in 2014 and provided private-sector

jobs to almost 240,000 state residents.<sup>11</sup> Immigrants also frequently gravitate toward sectors where employers may struggle to find enough interested U.S.-born workers. Immigrants in Washington, for instance, make up 55.1 percent of workers in crop production, an industry that includes farm laborers who pick fresh fruits and vegetables by hand.

In recent decades, immigrants have also played an important role in Washington’s manufacturing industry, the second largest industry in the state in 2014.<sup>12</sup> Studies have found that the arrival of immigrants to a community can have a powerful impact creating or preserving manufacturing jobs. This is because foreign-born workers give employers access to a large and relatively affordable pool of laborers, making it less attractive for firms to move work to cheaper locations offshore. One study by the Partnership for a New American Economy and the Americas Society/Council of the Americas, for instance, found that every time 1,000 immigrants arrive in a given U.S. county, 46 manufacturing jobs are preserved that would otherwise not exist or have moved elsewhere.<sup>13</sup> The nearly 900,000 immigrants who were living in the state in 2010 were responsible for creating or preserving more than 40,000 manufacturing jobs.

Aside from just looking at overarching industry groups, our work also examines the share of workers that are foreign-born in specific occupations and jobs. Immigrants in Washington, like the country as a whole, are often overrepresented in either high-skilled or particularly labor-intensive positions. While foreign-born workers make up 16.8 percent of the state’s employed population, they account for 63.0 percent of the type of agricultural worker that includes those picking crops by hand. They also make up 45.1 percent of those working as software developers for applications and systems software, and 30.8 percent of dishwashers. Immigrants also play a role caring for the aging population: They made up 30.4 percent of personal care aides in 2014.

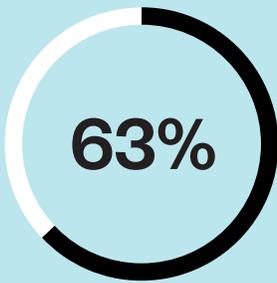
The nearly **900,000 immigrants** who were living in the state in 2010 were responsible for **creating or preserving more than 40,000 manufacturing jobs.**

INDUSTRIES WITH LARGEST SHARE OF FOREIGN-BORN WORKERS, 2014



OCCUPATIONS WITH LARGEST SHARE OF FOREIGN-BORN WORKERS, 2014

**1**  
**Misc. Agricultural Workers**



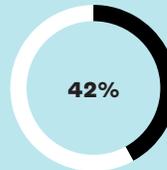
**38,802 immigrant workers**  
61,603 total workers

**2**  
**Software Developers**



**30,378 immigrant workers**  
67,369 total workers

**3**  
**Maids and Housekeeping Cleaners**



**14,512 immigrant workers**  
34,813 total workers

**4**  
**Packers and Packagers, Hand**



**7,357 immigrant workers**  
17,669 total workers

**5**  
**Computer Programmers**



**3,748 immigrant workers**  
11,935 total workers

**6**  
**Dishwashers**



**4,596 immigrant workers**  
14,946 total workers

**7**  
**Personal Care Aides**



**17,620 immigrant workers**  
58,005 total workers

**8**  
**Cooks**



**19,461 immigrant workers**  
66,035 total workers

**9**  
**Misc. Assemblers and Fabricators**



**5,947 immigrant workers**  
20,721 total workers

**10**  
**Other Production Workers**



**7,295 immigrant workers**  
26,519 total workers

# Agriculture

## 58%

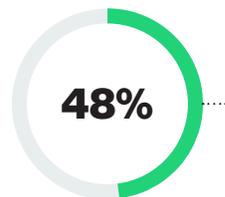
of farms in Washington produced fresh fruits and vegetables in 2014.



Share of miscellaneous agriculture workers who are immigrants (This is the occupation made up largely of laborers who hand pick crops in the field.)

## \$7.5B

Amount agriculture contributes to Washington's GDP annually.



Share of overall agricultural workers in the state who are immigrants.

One sector of the economy of particular importance to Washington is agriculture. In 2014, the agriculture industry contributed more than \$7.5 billion to Washington's Gross Domestic Product (GDP)—the 8th largest such contribution of any state in the country. Within that massive industry, fresh fruits and vegetables played a prominent role. In 2014, 58.4 percent of farms in Washington grew fresh produce, a figure far higher than the 31.4 percent of farms doing so nationally. Washington also exported more fresh fruit than any other state in the country aside from California in 2014. Growers produced almost \$1.9 billion worth of apples that year alone.

Washington's leading role as a produce producer makes the state's agriculture industry inherently reliant on immigrants.<sup>14</sup> Fresh fruits and vegetables—unlike commodity crops such as corn, soybeans, and wheat—almost always must be harvested by hand. And the so-called “field and crop workers” that perform that work are overwhelmingly immigrant: From 2008-2012, foreign-born workers made up 72.9 percent of field and

crop laborers in the country as a whole. In Washington, that reality means that even when managers, packers, and equipment managers are included, immigrants are still a huge part of the state's overall agricultural workforce. In 2014, almost half the agriculture workers in the state were born in other countries.

Washington also is among the top 10 states in country in terms of the amount of milk it produces each year. In recent years, the dairy industry has also become increasingly reliant on immigrant laborers. One 2015 study found that 51 percent of the laborers on U.S. dairy farms were immigrants. What's more, roughly 70 percent of the dairies that hired immigrant workers reported having “low” or “medium” levels of confidence in the authenticity of their workers' documents—indicating that such establishments are vulnerable to immigration raids or uncertainty surrounding their ability to find sufficient workers in the future.<sup>15</sup> In Washington, more than one in four workers in the animal production industry, the field that includes dairy, were foreign-born in 2014.

# \$4.4B

Farm receipts generated from the sale of fruits, vegetables, and nuts in 2014.

Washington's leading agricultural exports include fresh fruit, other plant products (including sweeteners, cocoa and planting seeds), processed fruits.

TOP FOUR FRESH PRODUCE ITEMS PRODUCED IN THE STATE, AS MEASURED BY FARM RECEIPTS

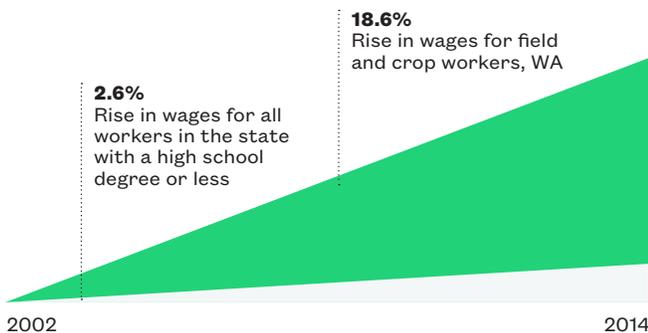


The current visa system for agriculture presents many problems for states like Washington. The H-2A visa program, which is designed to bring in temporary farm laborers, is too expensive and burdensome for many U.S. farms—and it excludes dairy establishments altogether.<sup>16</sup> Growers frequently complain that delays issuing H-2A visas result in workers arriving weeks late, which can lead to crop loss. The visa's lack of portability also means that growers must often commit to pay workers for a longer period than they actually need them. For Washington growers, the lack of a workable visa—coupled with a huge drop-off in the number of farmworkers who have immigrated in recent years—has led to a labor picture that is increasingly untenable. Between 2002 and 2014, the number of field and crop

workers in the country as a whole dropped by more than 20 percent. In Washington State, wage trends indicate farmers were likely dealing with manpower shortages as a result: The wages of the state's field and crop workers rose by 18.6 percent during that period, a strong sign the supply of workers was scarce. For comparison, the wages of all Washington workers with a high school education or less went up by just 2.6 percent during the same period.

The shortage of qualified field and crop workers has made it difficult for many farmers in Washington to keep pace with rising consumer demand for fresh fruits and vegetables. In the period from 1998-2000, for instance, Washington State growers produced 27.7 percent of all

WAGE PATTERNS INDICATE WASHINGTON GROWERS HAVE EXPERIENCED LABOR SHORTAGES IN RECENT YEARS

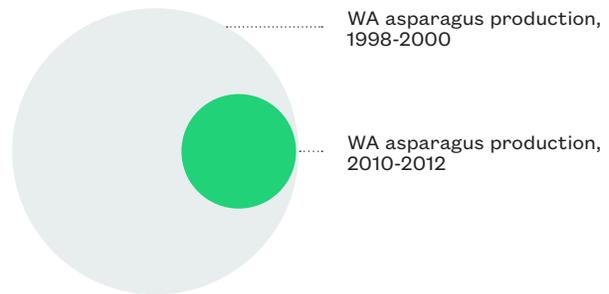


**18.6%** ↑  
increase in wages for field and crop workers in Washington, 2002-2014

From 1998 to 2000, Washington produced **27.7%** of the asparagus Americans ate.

By 2010-2012, that number had **fallen to 5.1%**.

During that period, Washington producers cut asparagus production by **\$43.0 million**.



the asparagus Americans ate. By 2010-2012, that figure had dropped by just 5.1 percent. Many growers say a big reason for that decline was that it was hard to find laborers willing to do the intensely difficult work needed during the asparagus harvest. In 2012, 10 percent of Washington's asparagus crop was lost because there were not enough workers available to cut it.<sup>17</sup>

That story is one that has been repeated across our economy at many U.S. farms. Between the 1998-2000 and 2010-2012 time periods, for instance, the share of produce consumed by Americans that was imported from other countries grew by 79.3 percent. Labor issues explain an estimated 27 percent of that market share loss. Many farmers say a shortage of manpower has forced them to either cut back on the acres devoted to labor intensive crops or abandon expansion plans

altogether.<sup>18</sup> Such moves, in Washington State and elsewhere, cost the U.S. economy. If labor shortages had not been an issue, the country would have been home to an estimated 24,000 additional jobs by 2012, including 17,000 in fields outside agriculture like transportation and irrigation. The U.S. economy would have had \$1.3 billion in additional farm income by 2012 as well.<sup>19</sup>

Many farmers say a **shortage of manpower has forced them to either cut back** on the acres devoted to labor intensive crops or **abandon expansion plans altogether**.

SPOTLIGHT ON

# Alan Schreiber

Grower and Executive Director, Washington Asparagus Commission

In 2012, Washington farmers could not fully harvest their asparagus crops because there simply were not enough workers available. This highlights a larger trend in the state: Between 2002 and 2014, real wages of Washington field and crop workers jumped 18.6 percent, signaling a possible labor shortage. Alan Schreiber, executive director of the Washington Asparagus Commission and a fifth-generation farmer, says that scenario could easily repeat itself, as lack of labor is a serious and constant issue for Washington farmers. “We are not going to have asparagus—or a lot of fruit and vegetables in this country—if we can’t get [immigration policy] fixed,” Schreiber says. Labor shortages pose a critical challenge to Washington, where the agriculture industry contributes more than \$7.5 billion to the state’s GDP, placing it among the top 10 states in terms of size of contribution.

**Labor shortages pose a critical challenge to Washington**, where the agriculture industry contributes more than **\$7.5 billion** to the state’s GDP, placing it among the top 10 states in terms of size of contribution.

On his 112-acre farm, Schreiber grows asparagus, kale, peppers, eggplant, tomatoes, melon, and watermelon. All of these must be harvested by hand, requiring workers to be shuffling along, hunched over, for up to 10 hours a day.<sup>53</sup> Schreiber has tried to hire local American workers for these seasonal jobs. On one occasion, he has sought the services of a labor contractor. “The first crew came at 6 a.m. and quit at 2 p.m.,” he recalls. “The second crew they brought in refused to work the second day.”

Farmers, like Schreiber, are forced to navigate the red tape around the H-2A system, **which still leaves them short of an adequate workforce.**

Even if he had been able to keep those workers, he found their skills inadequate. “The quality of the workforce is not very good,” he laments. Schreiber says the obvious solution would be a guest worker program that allows foreign-born workers the option to come to the United States to work seasonally and then return home. He says it needs to be more streamlined and less bureaucratic than the current program, known as H-2A. “It is so stringent,” he says. Farmers, like Schreiber, are forced to navigate the red tape around this system, which still leaves them short of an adequate workforce. In addition to a revamped guest worker program, Schreiber supports reforms that would allow long-term foreign residents to become naturalized.

The way the system works now, Schreiber says, doesn’t make sense. One of his employees left the farm to visit family in Mexico, which proved disastrous: He was apprehended by border patrol while making his way back into the United States. “I did not know he was undocumented,” Schreiber says. “All in all, the man ended up in a federal penitentiary for seven and a half months.” He was attempting to reenter the States so he could return to a job that was being held for him, Schreiber says. It’s a position that requires 12-hour days at \$12 an hour—work that native-born workers don’t want to do. To Schreiber, this scenario is nonsensical. “That is the kind of guy we need [working] in this country,” he says. “Not in jail.”

# Science, Technology, Engineering, and Math

**B**etween 2014 and 2024, science, technology, engineering, and math—or “STEM”—fields are projected to play a key role in U.S. economic growth, adding almost 800,000 new jobs and growing 37.0 percent faster than the U.S. economy as a whole.<sup>20</sup> Immigrants are already playing a huge part ensuring that Washington remains a leading innovator in STEM fields like software development and biotechnology. Despite making up 13.2 percent of the state’s population, foreign-born Washingtonians made up 24 percent of STEM workers in the state in 2014. Our outdated immigration system, however, makes it difficult for STEM employers to sponsor the high-skilled workers they need to fill critical positions. This is problematic because it can slow the ability of firms to expand and add jobs for U.S.-born workers. It also makes little sense, given the country’s ongoing shortage of STEM talent—an issue that heavily impacts employers here. In 2014, 7.2 STEM jobs were advertised online in Washington for every one unemployed STEM worker in the state.

Immigrants are already playing a huge part **ensuring that Washington remains a leading innovator in STEM** fields like software development and biotechnology.

Immigrants, however, are not just a crucial piece of Washington’s STEM workforce now—they are also likely to power it in the future. In 2014 students on temporary visas made up roughly one out of every 5 students earning a STEM Master’s degree at Washington’s universities, and 29.9 percent of students earning a PhD-level degree in STEM. Even after America’s universities invest in their education, however, many of those students struggle to remain in the country after graduation. Creating visa pathways that would make it easier for them to stay would have a major economic benefit to Washington. A study by the Partnership for a

# 73,490

available STEM jobs were advertised online in 2014, compared to **10,161** unemployed STEM workers.

The resulting ratio of open jobs to available workers was

# 7.2 to 1



New American Economy and the American Enterprise Institute found that every time a state gains 100 foreign-born STEM workers with graduate-level STEM training from a U.S. school, 262 more jobs are created for U.S.-born workers there in the seven years that follow.<sup>21</sup> For Washington, that means that retaining even half of the 708 graduates earning advanced-level STEM degrees in 2014 could result in the creation of more than 925 new positions for U.S.-born workers by 2021.

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If half of Washington's **708** advanced level STEM grads on temporary visas stayed in the state after graduation...

**927**

jobs for U.S.-born workers would be created by 2021.

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# Healthcare

In the coming years, the American healthcare industry is projected to see incredibly rapid growth—adding more new positions from 2014 to 2024 than any other industry in our economy.<sup>22</sup> Already, caregivers are facing near unprecedented levels of demand. Between 2013 and 2015, the number of Americans with health insurance rose by almost 17 million,<sup>23</sup> opening the door for many patients to receive more regular care. The country’s 76.4 million baby boomers are also aging rapidly—at a major cost to our healthcare system. Studies have found that elderly

Americans spend three times more on healthcare services than those of working age each year.<sup>24</sup>

In Washington, a state where almost one out of every seven residents is currently elderly, finding enough healthcare workers remains a challenge—and one that will likely worsen in the future. Currently the state has 269.4 practicing physicians per 100,000 people—a figure that ranks it 26th in the country in terms of physician coverage relative to other states. The ratio of practicing psychiatrists per capita is also low. All this

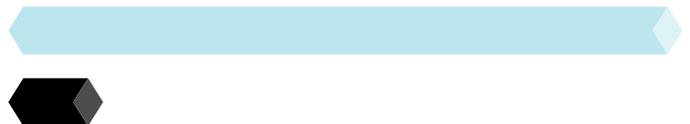
## WASHINGTON HAS A SHORTAGE OF HEALTHCARE WORKERS

# 63,144

available healthcare jobs were advertised online in 2014, compared to **6,216** unemployed healthcare workers.

The resulting ratio of open jobs to available workers was

# 10.2 to 1



Additional number of psychiatrists needed now: **301**



Shortage of dentists projected by 2025: **329**



Shortage of occupational therapists by 2030: **1,552**



Shortage of licensed practical nurses projected by 2025: **1,200**

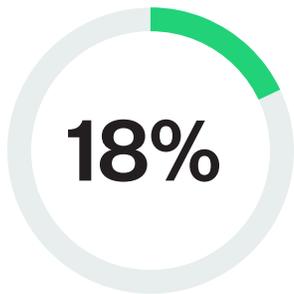


FOREIGN-BORN AND FOREIGN-EDUCATED PROFESSIONALS HELP FILL HEALTHCARE LABOR GAPS

Foreign-Educated

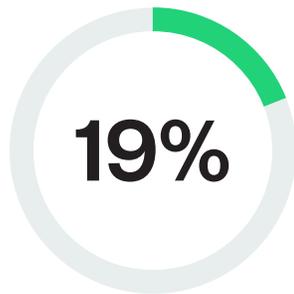
**Doctors**

3,480 graduates of foreign medical schools



**Psychiatrists**

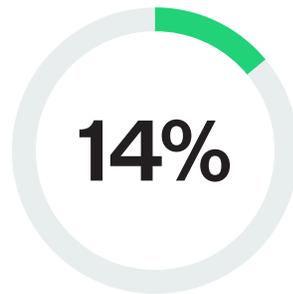
170 graduates of foreign medical schools



Foreign-Born

**Nurses**

9,676 foreign-born workers



**Nursing, Psychiatric, and Home Health Aides**

9,550 foreign-born workers



comes on top of shortages already impacting the state across the entire healthcare workforce. In 2014, 10.2 healthcare jobs were listed online in Washington for every one unemployed healthcare worker in the state. As baby boomers age a variety of other healthcare professions that cater largely to seniors, such as occupational therapists, will feel additional strain.<sup>25</sup>

Immigrants are already playing a valuable role helping Washington meet some of its healthcare workforce gaps. In 2016 more than one in six physicians in Washington graduated from a foreign medical school, a likely sign they were born elsewhere. Immigrant healthcare practitioners also made up 13.9 percent of the state’s nurses in 2014, as well as more than one in

five individuals working as nursing, psychiatric, or home health aides. In fact, only 11 states have a higher share of foreign-born nurses.

In 2016 more than **one in six** physicians in Washington graduated from a foreign medical school, a likely sign they were born elsewhere.

# Housing

Immigrant families have long played an important role helping to build housing wealth in the United States. One study released by the Partnership for a New American Economy and Americas Society/Council of the Americas, for instance, found that in recent decades the country's more than 40 million immigrants collectively raised U.S. housing wealth by \$3.7 trillion. Much of this was possible because immigrants moved into neighborhoods once in decline, helping to revitalize communities and make them more attractive to U.S.-born residents.<sup>26</sup>

In Washington, immigrants are actively strengthening the state's housing market. In 2014, immigrant-led

households held \$71 billion in housing wealth in Washington or more than one out of every seven dollars concentrated in real estate that year. They also paid 17.4 percent of the money Washingtonians spent on rent, despite making up 14.2 percent of the state's households. Because Washington's immigrants are more likely to be working age, they help address another major concern of housing experts as well—that the large wave of baby boomers retiring in the coming years could result in more homes going up for sale than there are buyers to purchase them. In a state where seniors already own 28 percent of homes, immigrant families made up more than one in six new homebuyers from 2010 to 2014.

Immigrants are **bolstering the housing market** by buying the wave of homes coming on the market as the baby boomers retire.



**200,419**

Number of immigrant homeowners in 2014

**\$71.0 B**

Amount of housing wealth held by immigrant households



**\$192.8M**

Amount paid by immigrant-led households in rent



# Visa Demand

One key measure of the demand for immigrant workers involves the number of visas requested by employers in a given state. Before an employer can formally apply for many types of visas, however, it must first obtain “certification” from the Department of Labor—essentially a go-ahead from the DOL that the employer can apply for a visa to fill a given job or role. For the H-1B visa, which is used to sponsor high-skilled workers, an employer gains certification by filing what’s known as a Labor Condition Application, or LCA. In the LCA the employer must detail

the position the foreign national would fill, the salary he would be paid, and the geographic location of the job. Firms must also attest that hiring an immigrant will not adversely impact similarly situated American workers. For two other large work visa categories—the H-2A for agricultural laborers and the H-2B for seasonal or temporary needs—employers file what is known as a Labor Certification application, or a “labor cert” for short. To get a labor cert approved, the employer must demonstrate that it is unable to locate an American worker that is available, willing, and able to fill the job.

## H-1B

Number of positions:

**32,010**

**Top jobs:**

- Software developers, applications
- Computer systems analysts
- Computer occupations, all other

## GREEN CARD

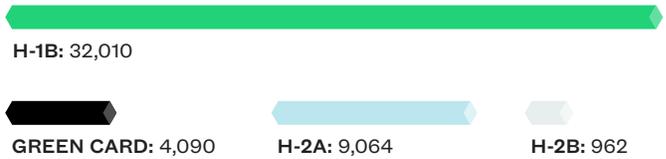
Number of positions:

**4,090**

**Top jobs:**

- Software developers, applications
- Software developers, systems software
- Computer systems analysts

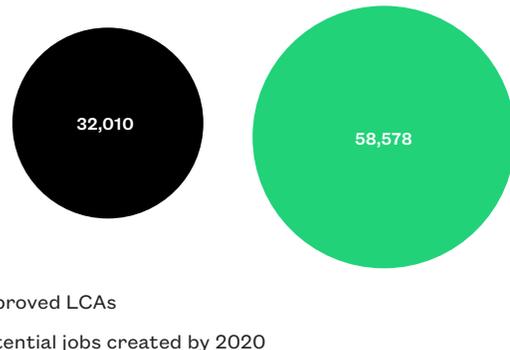
## CERTIFIED POSITIONS BY VISA TYPE, 2014



\* This includes only employment-based green cards

## IF ALL APPROVED LCAs HAD TURNED INTO VISAS...

**32,010 LCAs** for H-1B workers could have created **58,578 jobs**.



## H-2A

Number of positions:

**9,064**

**Top crops or jobs:**

- Apples
- Cherries
- Berries

## H-2B

Number of positions:

**962**

**Top jobs:**

- Forest and conservation workers
- Food batchmakers
- Floral designers

In fiscal year 2014, Washington employers received DOL certification for more than 46,000 positions, including jobs across a wide variety of occupations and geographies within the state. They included more than 32,000 positions for potential workers on H-1B visas, as well as roughly 9,100 for H-2A workers. Federal officials also issued almost 1,000 certifications for H-2B visas, which are frequently used to staff places like hotels, fisheries, and stables during the high season. Given that it is expensive and cumbersome for employers to obtain labor certs—and similarly daunting to formally apply for an H-1B visa—the large interest in all these visa categories indicates Washington employers likely were having real trouble finding the workers they needed on U.S. soil.

Applying for certification, however, is not the same as receiving a visa. The H-1B program is currently capped at 85,000 visas a year for private sector employers. In the country as a whole, this resulted in almost half of all such applications being rejected in fiscal year 2014 alone. The H-2B program is similarly limited to just 66,000 visas per year. Even permanent immigrants get ensnared in the limitations of our outdated immigration system. Only seven percent of all green cards can go to nationals of any one country in a given year—resulting in backlogs lasting years for many Indian, Chinese, Mexican, and Filipino workers.<sup>27</sup>

When companies are denied the visas they need, company expansion is commonly slowed—often at a real and meaningful cost to the U.S.-born population. One study by the Partnership for a New American Economy and the American Enterprise Institute estimated that when a state receives 100 H-2B visas, 464 jobs are created for U.S.-born workers in the seven years that follow.<sup>28</sup> The fact that H-1B visa holders actually create—not take away—jobs from Americans has also been widely supported in the literature. A 2013 paper written by professors at Harvard University looking at the 1995 to 2008 period found that 1 additional young, high-skilled immigrant worker hired by a firm created 3.1 jobs for U.S.-born workers at that same company during the period studied.<sup>29</sup> Other academics have tied each H-1B visa award or labor request with the creation of

CITIES ARE DEMANDING VISAS ALL OVER THE STATE

H-1B

Top cities:

- 1 Redmond
- 2 Seattle
- 3 Bellevue

H-2A

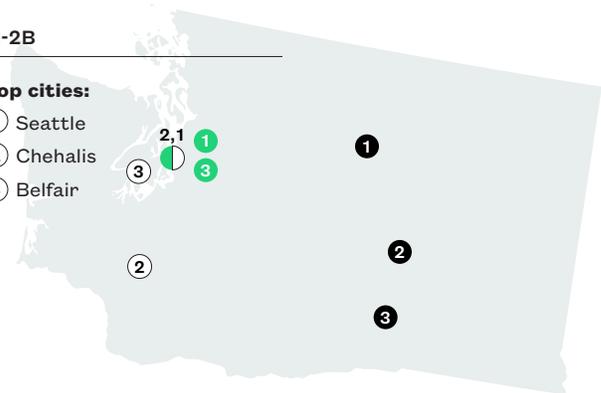
Top cities:

- 1 Brewster
- 2 Royal City
- 3 Prosser

H-2B

Top cities:

- 1 Seattle
- 2 Chehalis
- 3 Belfair



four<sup>30</sup> or five<sup>31</sup> American jobs in the immediate years that follow.

In this brief, we rely on a more conservative estimate of the impact of the H-1B program on the American workforce. Specifically, we use the estimate that every 1 additional H-1B visa awarded to a state was associated with the creation of 1.83 more jobs for U.S.-born workers there in the following seven years.<sup>32</sup> On the first page of this section, we show the number of jobs that would have been created for U.S.-born workers in Washington by 2020 if all the fiscal year 2014 LCAs for H-1Bs had turned into actual visas. We also show how the large number of H-1B visas denied to the Seattle metropolitan area in 2007 and 2008 cost U.S.-born tech workers there in the two years that followed.

SEATTLE

**2,026 H-1B denials** for tech workers in the metro area cost computer workers there...

**2,183** ↓

Potential new jobs and **\$32.1M** in aggregate wage growth in the two years that followed.

# Naturalization

**W**ashington’s immigrants are not only living in the state, they are also laying down roots in the state as well. Our analysis found that immigrants in Washington are naturalizing, or becoming citizens, at similar rates to immigrants in the country as a whole. In 2014, 46.2 percent of immigrants in the state were already U.S. citizens, a slight 2.4 percent lower than the national average.

Like almost all parts of the country, however, Washington is also home to a population of immigrants who are eligible to naturalize, but have not yet taken that step. Embracing public policies that would help those individuals navigate the naturalization process could have an important economic impact on the state. Studies have found that immigrants who become citizens seek

out higher education at greater rates than non-citizens.<sup>33</sup> Because citizenship allows immigrants to pursue a greater range of positions, including public and private sector jobs requiring a security clearance, it also has been found to raise a person’s annual wages. One study by researchers at the University of Southern California pegged the size of that wage increase at 8 to 11 percent.<sup>34</sup> If the average non-citizen in Washington saw a wage boost at the low end of that range, or 8 percent, she would earn almost \$3,300 more per year—money that could be reinvested in the state’s economy through her spending at local businesses. Multiplied by the roughly 263,000 non-citizens in Washington currently eligible to naturalize, such policy initiatives could collectively boost wages in the state by \$867.3 million.

## 263,118

Number of non-citizens eligible to naturalize in 2014

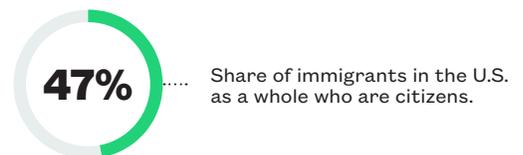
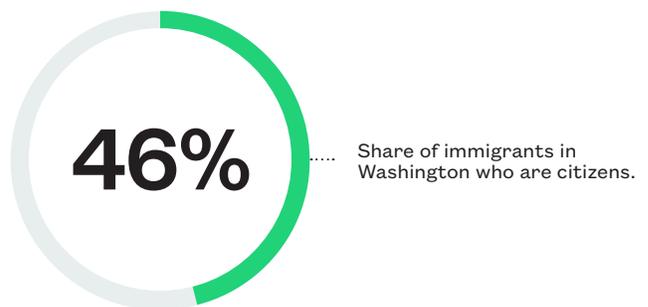


The average non-citizen in Washington earns **\$41,203** per year. If they naturalized, they each could earn an average of **\$3,296 more** per year.

## \$867.3M

Aggregate additional earnings if eligible non-citizens naturalized.

### NATURALIZATION RATES IN WASHINGTON



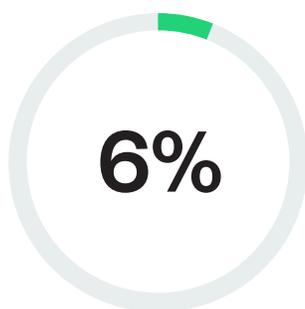
# International Students

**P**olicymakers are increasingly realizing that international students provide huge benefits to the communities where they live and study. The World Bank has found that an increase in the number of international graduate students studying at American schools leads to large boosts in the number of patents awarded to local research universities in the years that follow.<sup>35</sup> Through their tuition payments and day-to-day spending, international students in the broader United States also contributed more than \$30.5 billion to the U.S. economy in the 2014-2015 school year and supported more than 370,000 jobs.<sup>36</sup>

In Washington, the roughly 21,000 international college students studying on temporary visas make up just 6.2 percent of all college students in the state. Still, their economic contribution is enormous. They support more than 6,100 jobs in the state, including positions in transportation, health insurance, and retail.

Through their tuition payments and day-to-day spending, international students in the broader United States also contributed more than **\$30.5B** to the U.S. economy in the 2014-2015 school year and **supported more than 370,000 jobs.**

International students represent a very small portion of all students in Washington, but they make a big impact...



International students make up only **6%** of all students in Washington.

**\$615.6M** **6,166**

Economic contribution of international students to the state, 2015.

Jobs supported by international students, 2015.

# Voting Power

Immigrants in Washington do not only make a difference to the state's economy, they also play a large role at the voting booth. In 2014, Washington was home to more than 405,000 foreign-born residents who were eligible to vote—a group that made up more than one in 12 of the state's eligible voters. An estimated almost 242,000 foreign-born Washingtonians had also taken the step of formally registering. Although few would call Washington a swing state, the sheer size of the immigrant voting bloc here means it has a powerful impact on the way the state votes in both national and state elections. In 2012, for instance, Barack Obama won Washington by roughly 465,000 votes. The total number of eligible immigrant voters in the state is only 53,000 less than that margin.

## 405,129

Number of immigrants eligible to vote.



## 242,448

Number of immigrants registered to vote.

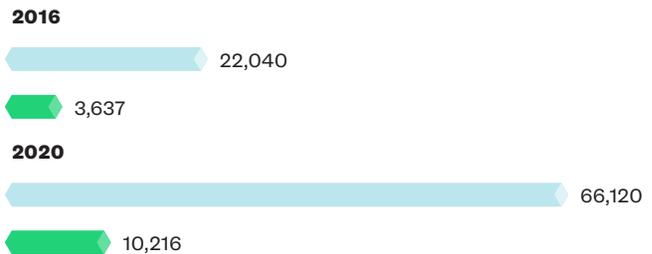
## 464,726

Margin of victory in the 2012 presidential election.

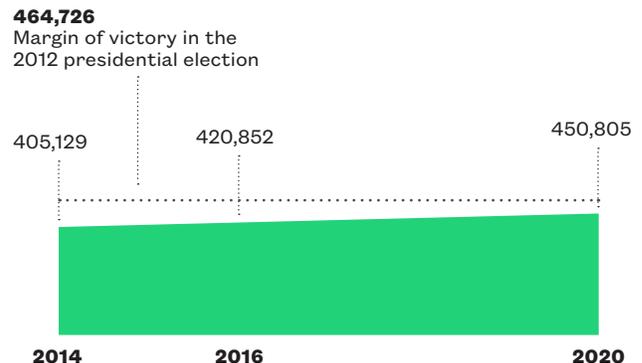
The power of immigrant voters is likely to continue to be a large factor in upcoming elections. Based on participation patterns in recent years, we would expect almost 189,000 foreign-born voters to cast formal ballots in the presidential election this year. An additional roughly 76,000 more immigrants will either naturalize or turn 18 by 2020, expanding the estimated pool of eligible new American voters in Washington to almost 451,000 people.

### THE GROWING POWER OF THE IMMIGRANT VOTE

- Immigrants who will become eligible to vote by turning 18
- Immigrants who will become eligible to vote through naturalization



### PROJECTED POOL OF ELIGIBLE IMMIGRANT VOTERS, 2014-2020



# Undocumented Population

**T**he United States is currently home to an estimated 11.4 million undocumented immigrants, the vast majority of whom have lived in the United States for more than five years. While politicians continue to debate what to do about illegal immigration without any resolution, millions of undocumented immigrants are actively working across the country. Collectively, these immigrants have a large impact on the U.S. economy. One recent study found that 86.6 percent of undocumented males in the country were employed in 2012 and 2013, suggesting that most immigrants who come here illegally do so because of work opportunities.<sup>37</sup> And because employers are required by law to gather Social Security numbers for all their hires, many undocumented individuals are paying into our tax system as well—often under falsified or incorrect Social Security numbers.<sup>38</sup> Despite that, undocumented immigrants generally lack access to

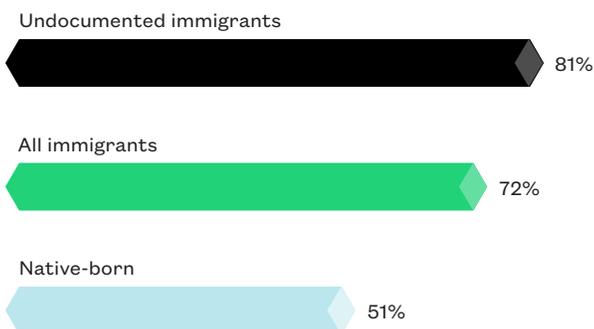
federal aid programs such as Medicaid, food stamps, and Temporary Assistance for Needy Families.<sup>39</sup>

One recent study found that **86.6%** of undocumented males in the country were employed in 2012 and 2013, suggesting that **most immigrants who come here illegally do so because of work opportunities.**

Of course, there are many compelling reasons that having a large undocumented population is a problem for a society. It undermines law and order, permits a shadow economy that is far harder to regulate, and is simply unfair to the millions of people who have come

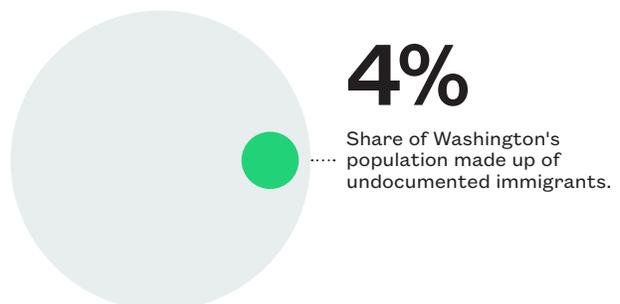
## UNDOCUMENTED IMMIGRANTS ARE MORE LIKELY TO BE WORKING-AGED THAN NATIVES OR OTHER IMMIGRANTS

Share of population ages 25-64, 2014



# 251,703

Estimated number of undocumented immigrants in Washington.



# 14,827

Estimated number of undocumented entrepreneurs in Washington.



Rate of entrepreneurship among undocumented population (ages 25-64).

# \$304.5M

Total business income of self-employed entrepreneurs.

# 4.6%

Share of all working-age entrepreneurs in Washington who are undocumented immigrants.

## THE WASHINGTON INDUSTRIES WHERE UNDOCUMENTED IMMIGRANTS MAKE UP THE LARGEST SHARE OF THE WORKFORCE, 2014



here legally. But as the undocumented immigration problem has gone largely unaddressed for the past 30 years, undocumented workers in the country have begun to play an increasingly integral role in many U.S. industries. In some sectors, such as agriculture, undocumented immigrants account for 50 percent of all hired crop workers, making them a critical reason why the industry is able to thrive on U.S. soil.<sup>40</sup> Many studies have also indicated that these undocumented workers are not displacing the U.S.-born, but rather, taking jobs few Americans are interested in pursuing. Economists have found that low-skilled immigrants, the group that most undocumented immigrants fall into,

tend to pursue different jobs than less-skilled natives. While U.S.-born workers without a high school degree are often overrepresented in forward-facing roles like cashiers, receptionists, and coffee shop attendants, many less-skilled immigrants pursue more labor-intensive work requiring less human interaction, filling jobs as meat processors, sewing machine operators, or nail salon workers.<sup>41</sup> This phenomenon exists within industries as well. In construction, for instance, less-skilled immigrants often work as painters and drywall installers, allowing natives to move into higher paying positions requiring more training, such as electricians, contractors, and plumbers.<sup>42</sup>

In Washington, there is evidence that undocumented immigrants are playing a small but critical role in the workforce. In this section, we estimate the size and the characteristics of the undocumented population in Washington by conducting a close analysis of the American Community Survey from the U.S. Census. This work uses a series of variables to identify immigrants in the survey who are likely to lack legal status—a method that has recently emerged in the academic literature on immigration.<sup>43</sup> (See the Methodology Appendix for more details.)

Using this technique, we estimate that Washington is home to almost 252,000 undocumented immigrants. These individuals are far more likely than the native-born population—or even the broader foreign-born one—to be in the prime of their working years, or ranging in age from 25-64. They also contribute to a range of industries that could not thrive without a pool of workers willing to take on highly labor-intensive roles. In 2014, for instance, undocumented immigrants made up 16.7 percent of all employees in Washington’s accommodation and food services industry, a sector that includes dishwashers and food preparation workers. They also accounted for 10.5 of workers

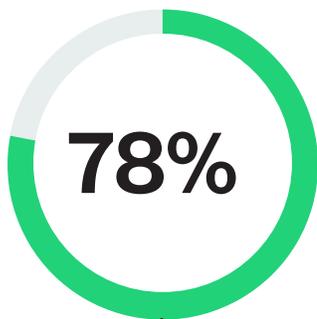
in administrative, support, and waste management services and 31.6 percent workers employed in the agriculture sector. In Washington, a state that grows large amounts of fresh produce, many agriculture jobs involve handpicking crops in the fields.

Large numbers of undocumented immigrants in Washington have also managed to overcome licensing and financing obstacles to start small businesses. In 2014, an estimated 7.3 percent of the state’s working-age undocumented immigrants were self-employed. Almost 15,000 undocumented immigrants in Washington were self-employed in 2014, many providing jobs and economic opportunities to others in their community. Undocumented entrepreneurs in the state also earned an estimated \$304.5 million in business income that year.

The larger political debate around the economic cost or benefits of undocumented immigration tends to focus on the expense of educating immigrant children or the healthcare costs associated with increased use of emergency rooms and other services. The debate infrequently recognizes that because most undocumented immigrants are working, they also make large federal and state tax contributions and

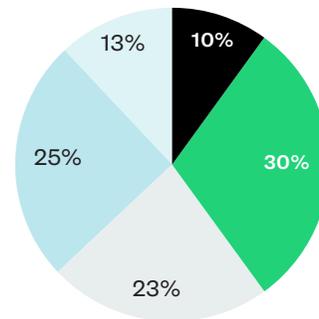
MEASURES OF ASSIMILATION AMONG WASHINGTON'S UNDOCUMENTED POPULATION, 2014

Time in the United States



Share of undocumented immigrants who have been in the U.S. for five years or more.

English Proficiency (population ages 5+)



Speaks only English  
 Speaks English very well  
 Speaks English well  
 Does not speak English well  
 Does not speak any English

In 2014,  
undocumented  
immigrants in  
Washington earned  
**\$4.7B.**

**\$205.1M** — Went to state and local taxes...

**\$385.5M** — Went to federal taxes...

Leaving them with **\$4.1B** in  
remaining spending power to use  
at Washington businesses.

#### ENTITLEMENT CONTRIBUTIONS

Undocumented immigrants also contribute to our country's entitlement programs. In 2014, through taxes on their individual wages, immigrants contributed **\$86.1M** to Medicare and **\$337.0M** to Social Security.



Medicare



Social Security

frequently are net contributors to many of our most important—and most imperiled—benefits programs. Social Security’s Chief Actuary, for example, has credited unauthorized immigrants with contributing \$100 billion more to Social Security than they drew down in benefits during the last decade.<sup>44</sup> Several in-depth studies at the state level have similarly come to the conclusion that undocumented immigrants represent a net benefit to the states in which they live. One paper, from researchers at Arizona State University, estimated that undocumented immigrants in that state pay \$2.4 billion in taxes each year—a figure far eclipsing the \$1.4 billion spent on the law enforcement, education, and healthcare resources they use.<sup>45</sup> Another study estimated that, on a per capita basis, Florida’s undocumented immigrants pay \$1,500 more in taxes than they draw down in public benefits each year.<sup>46</sup>

Although we are currently unable to calculate the amount spent on any public benefits or services used by undocumented immigrant families, we can gain a fairly clear sense of the amount they are paying in taxes each year. A variety of studies have estimated that anywhere from 50 to 80 percent of households led by undocumented immigrants file federal income taxes annually.<sup>47</sup> Federal government officials have also estimated that 75 percent of undocumented workers have taxes withheld from their paychecks.<sup>48</sup> In this paper, we make the assumption that 50 percent of the country’s undocumented households paid income taxes in 2014. Although many experts would call this share highly conservative, it has been modeled in several academic papers, and also by think tanks that specialize exclusively in the study of U.S. tax policy.<sup>49</sup>

In 2014, we estimate that Washington households led by undocumented immigrants earned more than \$4.7 billion in income. Of that, they paid an estimated \$385.5 million in federal taxes. They also contributed more than \$337.0 million directly to the Social Security program through taxes on their individual wages. Washington’s undocumented immigrants also made an important impact through their state and local tax contributions—money that many localities use to pay

for police forces, public education, and city services like garbage collection and recycling. We estimate that Washington’s undocumented immigrants paid almost \$205.1 million in state and local taxes in 2014.

## In Washington, households led by **undocumented immigrants** paid an estimated **\$385.5 million** in federal taxes.

Giving legal status to undocumented immigrants would increase their access to a variety of public benefits—resulting in potentially higher costs for federal, state, and local governments. But because legalization is expected to raise the earning power of undocumented immigrants and give them access to a wider array of jobs and educational opportunities, it would have the opposite effect as well, potentially allowing them to spend more as consumers and pay more in taxes each year.<sup>50</sup> Provisions within immigration reform requiring that undocumented immigrants pay any back taxes before normalizing their status would temporarily boost U.S. tax revenues still further.

But while the debate over legalization continues without resolution, the data suggests that the undocumented immigrants in Washington have largely assimilated into the United States, making it less likely that mass deportation will ever be a realistic option. We estimate that 78.1 percent of the state’s undocumented population has been in the United States for five or more years. More than 62.2 percent speak English well, very well, or fluently. Studies show that when immigrants with limited English proficiency learn the language, they see a substantial wage benefit and become less isolated in their communities.<sup>51</sup> The labor market outcomes and educational levels of their children increase with time as well.<sup>52</sup>

# Methodology

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The vast majority of data that appears in this brief was calculated by the Partnership for a New American Economy research team, using a variety of publicly available data sources. Our work relied most heavily on the 2014 American Community Survey (ACS) 1-year sample using the Integrated Public Use Microdata Series (IPUMS) database.<sup>1</sup> Unless otherwise noted this data is weighted using the person weight for analysis at the individual level, and is weighted using the household weight for analysis at the household level.

## Demographics

The data points on the foreign-born population in the demographics section are calculated using both the 2010 and 2014 ACS 1-year sample.

## Entrepreneurship

The data on self-employed immigrants and the business income generated by immigrant entrepreneurs come from the 2014 ACS 1-year sample. We define immigrants as foreign-born individuals (excluding those that are children of U.S. citizens or born on U.S. territories).

The number of employees at immigrant-owned firms is estimated by using the 2007 Survey of Business Owners (SBO) Public Use Microdata Sample (PUMS),<sup>2</sup> which is the most recent microdata on business owners currently available. The estimates are weighted using the tabulation weights provided in the dataset. We define immigrant-owned businesses as firms with at least one foreign-born owner. For confidentiality, the data exclude businesses classified as publicly owned firms because they can be easily identified in many states. Based on our own analysis, we believe that many of the publicly owned firms excluded from this data are companies with

500 employees or more. As a result, the final number of employees at immigrant-owned companies in this report is a conservative estimate, and is likely lower than the true value.

Fortune magazine ranks U.S. companies by revenue and publishes a list of top 500 companies and their annual revenue as well as their employment level each year. To produce our estimates, we use the 2015 Fortune 500 list.<sup>3</sup> Our estimates in this section build on past work done by PNAE examining each of the Fortune 500 firms in the country in 2011, and determining who founded them.<sup>4</sup> We then use publicly available data, including historical U.S. Census records and information obtained directly by the firms, to determine the background of each founder. In the rare cases where we could not determine a founder's background, we assumed that the individual was U.S.-born to be conservative in our estimates. Some firms created through the merger of a large number of smaller companies or public entities were also excluded from our analysis. These included all companies in the utilities sector and several in insurance.

To produce the Fortune 500 estimates for each state, we allocate firms to the states where their current headquarters are located. We then aggregate and report the annual revenue and employment of the firms in each state that we identify as "New American" Fortune 500 companies. These are firms with at least one founder who was an immigrant or the child of immigrants.

## Income and Tax Contributions

Using the 2014 ACS 1-year data, we estimate the aggregate household income, tax contributions, and spending power of foreign-born households.

To produce these estimates, a foreign-born household is defined as a household with a foreign-born household head. Immigrant sub-groups are defined as follows: 1) Asian immigrants refer to the foreign-born persons who self identify as Chinese, Taiwanese, Japanese, Filipino, Asian Indian, Korean, Native Hawaiian, Vietnamese, Bhutanese, Mongolian, Nepalese, Cambodian, Hmong, Laotian, Thai, Bangladeshi, Burmese, Indonesian, Malaysian, Pakistani, Sri Lankan, Samoan, Tongan, Guamanian/Chamorro, Fijian, or other Pacific Islanders; 2) Hispanic immigrants include those foreign-born persons who report their ethnicity as Hispanic; 3) Immigrants grouped under Sub-Saharan Africa originate from African countries, excluding the North African countries of Egypt, Libya, Tunisia, Algeria, and Morocco; 4) Middle Eastern and North African immigrants are foreign-born persons from North Africa as well as the following Middle Eastern countries: Iran, Iraq, Bahrain, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arab, Syria, United Arab Emirates, and Yemen.

In this brief, mirroring past PNAE reports on this topic, we use the term “spending power.”<sup>5</sup> Here and elsewhere we define spending power as the disposable income leftover after subtracting federal, state, and local taxes from household income. We estimate state and local taxes using the tax rates estimates produced by Institute on Taxation and Economic Policy by state income quintiles.<sup>6</sup> For federal tax rate estimates, we use data released by the Congressional Budget Office in 2014 and calculate the federal tax based on the household income federal tax bracket.<sup>7</sup>

Social Security and Medicare contributions are drawn from taxes on an individual’s wage earnings.<sup>8</sup> This is far different from a household’s overall income, which may include other revenue streams such as rental income and returns on investments. To account for this difference between overall federal taxes and Social Security and Medicare contributions, we estimate Medicare and Social Security contributions based on wage and salary data provided at the individual level in the ACS. For self-employed individuals, we use the self-employment income as the income base. The amount of earnings that can be taxed by the Social Security

program is capped at \$117,000, while there no such limit for the Medicare program.<sup>9</sup> We use a flat tax rate of 12.4 percent to estimate Social Security contributions and 2.9 percent for to capture Medicare contributions. This estimates the total amount that immigrants and their employers contributed in 2014.<sup>10</sup>

It is also worth noting that half of the amount contributed to Social Security and Medicare (6.4 percent of Social Security tax rate and 1.45 percent of Medicare tax rate) comes from individual workers, while the other half comes directly from their employers. Self-employed workers have to pay the full tax themselves. When estimating Social Security and Medicare contributions, we include all individual wage earners in the households and aggregate the amount paid by state.

## Workforce

We use the 2014 ACS 1-year sample to estimate all data points in the workforce segment of the report. We define the working age population as those 25 to 64 years old. When estimating how much more foreign-born persons are likely to be employed than native-born persons, however, we calculate the percentage of native-born and foreign-born residents of all ages who were employed in 2014. The reason why we choose a more inclusive population for that estimate is because we want to make the point that the increased likelihood of being working aged that we see among immigrants leads to higher employment in the vast majority of states.

Because the employment status of people who are 16 years old or younger is not available in the ACS, we assume that these young people are not employed. The employed population also does not include those in the Armed Forces.

To estimate how much more likely immigrants are to be employed than natives, we calculate the percent difference between the immigrant and native-born employment rates. Our estimates on the share of immigrants and natives of different education levels only take into consideration individuals aged 25 or older.

The North American Industry Classification System, or NAICS Industry code, is used to estimate the industries with the largest share of foreign-born workers. All individuals 16 years old and above are included in these calculations. The total number of workers for certain industries in some states is extremely small, thus skewing results. In order to avoid this, we calculate the percentile distribution of the total number of workers per industry per state and drop the industries in each state that fall below the lowest 25th percentile. Estimated occupations with the largest share of foreign-born workers per state also follow the same restrictions—the universe is restricted to workers age 16 and above, and the occupations per state that fall under the 25th percentile benchmark are not included.

Our estimates on the number of manufacturing jobs created or preserved by immigrants rely on a 2013 report by the Partnership for a New American Economy and the Americas Society/Council of the Americas. That report used instrumental variable (IV) strategy in regression analysis and found that every 1,000 immigrants living in a county in 2010 created or preserved 46 manufacturing jobs there.<sup>11</sup> We use that multiplier and apply it to the 2010 population data from the ACS to produce our estimates.

## Agriculture

We access the agriculture GDP by state from Bureau of Economic Analysis, which includes GDP contributions from the agriculture, forestry, fishing, and hunting industry.<sup>12</sup> The share of foreign-born agricultural workers is estimated using 2014 ACS 1-year sample. Additional data on agriculture output, top three crops per state, and leading agricultural exports come from United State Department of Agriculture (USDA)'s state fact sheets.<sup>13</sup> When displayed, data on sales receipts generated by the top fresh produce items in each state come the Farm and Wealth Statistics cash receipts by commodity tables available from the USDA's Economic Research Service.<sup>14</sup>

The agriculture section uses the Quarterly Census of Employment and Wage (QCEW) to estimate the

percentage of crop farms producing fresh fruits and vegetables, and change in real wage of agricultural workers between 2002 and 2014. The QCEW data uses the North American Industry Classification System (NAICS) to assign establishments to different industries. We identify the following farms as fresh fruits and vegetable farms: other vegetable and melon farming, orange groves, citrus, apple orchards, grape vineyards, strawberry farming, berry farming, fruit and tree nut combination farming, other non-citrus fruit farming, mushroom production, other food crops grown under cover, and sugar beet farming.

The decline in the number of field and crop workers comes from the quarterly Farm Labor Survey (FLS) administered by USDA.<sup>15</sup> Stephen Bronars, an economist with Edgeworth Economics, previously analyzed and produced these estimates for the PNAE report, “A Vanishing Breed: How the Decline in U.S. Farm Laborers Over the Last Decade has Hurt the U.S. Economy and Slowed Production on American Farms” published in 2015. Additional information on those calculations can be found in the methodology section of that paper.<sup>16</sup>

Finally, for a small number of states, we also produce estimates showing how growers in the state are losing market share for specific produce items consumed each year by Americans, such as avocados or strawberries. Those estimates originate in a 2014 report produced by PNAE and the Agriculture Coalition for Immigration Reform.<sup>17</sup> The author used data from the USDA's annual “yearbook” for fresh fruits and vegetables, among other sources, to produce those estimates. More detail can be found in the methodology of that report.

## Science, Technology, Engineering, and Math

We use the STEM occupation list released by U.S. Census Bureau to determine the number and share of foreign-born STEM workers as well as the number of unemployed STEM workers from 2014 ACS 1-year data.<sup>18</sup> Per U.S. Census classification, healthcare workers such as physicians and dentists are not counted as working in

the STEM occupations. All unemployed workers who list their previous job as a STEM occupation are counted as unemployed STEM workers.

To capture the demand for STEM workers, we use the Labor Insight tool developed by Burning Glass Technologies, a leading labor market analytics firm. Burning Glass, which is used by policy researchers and academics, scours almost 40,000 online sources daily and compiles results on the number and types of jobs and skills being sought by U.S. employers. This search includes online job boards, individual employer sites, newspapers, and public agencies, among other sources. Burning Glass has an algorithm and artificial intelligence tool that identifies and eliminates duplicate listings—including ones posted to multiple job boards as part of a broad search.<sup>19</sup>

The data on STEM graduates are from the 2014 Integrated Postsecondary Education Data System (IPEDS) completion survey.<sup>20</sup> A study by the Partnership for a New American Economy and the American Enterprise Institute found that every time a state gains 100 foreign-born STEM workers with graduate-level STEM training from a U.S. school, 262 more jobs are created for U.S.-born workers there in the seven years that follow.<sup>21</sup> We use this multiplier and the number of STEM advanced level graduates on temporary visas to estimate the number of jobs created for U.S.-born workers.

The last part of the STEM section presents data on patents with at least one foreign-born inventor. The data is originally from a study by Partnership for a New American Economy in 2012, which relied on data from U.S. Patent and Trademark Office's database as well as LinkedIn, direct correspondence, and online profiles to determine the nativity of individual inventors.<sup>22</sup>

## Healthcare

We estimate the number of unemployed healthcare workers using the 2014 ACS 1-year sample. Healthcare workers are healthcare practitioners and technical occupations, or healthcare support occupations as defined by U.S. Census Bureau.<sup>23</sup>

Unemployed healthcare workers are individuals who report their previous job as a healthcare occupation, and their employment status as currently not working but looking for work. We took the number of job postings for healthcare workers from the Burning Glass Labor Insight tool, a database that scours online sources and identifies the number and types of job postings. We describe this resource in detail in the section on STEM methodology.

We then delve into specific occupations within the broader healthcare industry. To produce the figures on the total number of physicians and psychiatrists and the share born abroad, we use American Medical Association (AMA) Physician Masterfile data. To give a sense of the supply and demand of physicians and psychiatrists, we also calculate the physician and psychiatrist density in each state by dividing the total number of physicians or psychiatrists by the population estimates in 2015 for each state.<sup>24</sup> As for the share of foreign-born nurses and home health aides, we use the 2014 ACS 5-year sample data because data from the 1-year sample is too small to make reliable estimates.

We estimate the shortage of psychiatrists, dentists, and occupational therapists using data from the various U.S. government offices. For example, the shortage of psychiatrists refers to the current lack of psychiatrists per the U.S. government's official definition of a mental health shortage area (1/30,000 residents) in each county, aggregated within each state.<sup>25</sup> The shortage of dentists is from an analysis by U.S. Department of Health and Human Services,<sup>26</sup> and the shortage of occupational workers is from a journal article published by PM&R, the official scientific journal of the American Academy of Physical Medicine and Rehabilitation.<sup>27</sup> For psychiatrists, we project future shortages by accounting for individuals in these occupations as they reach the retirement age of 65.

## Housing

The data in the housing section comes from the 2014 ACS 1-year sample. Immigrant homeowners are defined as foreign-born householders who reported living in

their own home. We estimate the amount of housing wealth held by immigrant households by aggregating the total housing value of homes owned by immigrant-led households. We also estimate the amount of rent paid by immigrant-led households by aggregating the rent paid by such families. We then calculate the share of housing wealth and rent that immigrant households held or paid compared to the total population. For characteristics of homeowners, a foreign-born new homebuyer is defined as a household with a foreign-born household head who owned and moved to the current residence within the last five years.

## Visa Demand

The data on visa demand are drawn primarily from the 2014 Annual Report produced by the Office of Foreign Labor Certification within the U.S. Department of Labor.<sup>28</sup> Our figures on the number of visa requests authorized for each state—as well as the occupations and cities those visas are tied to—originate directly from that report.

In this section, we also present estimates on the number of jobs that would have been created if all the visas authorized in 2014 had resulted in actual visa awards. The multipliers we use to produce these estimates originate in a 2011 report released by PNAE and the American Enterprise Institute. That report, written by the economist Madeline Zavodny, used a reduced-form model to examine the relationship between the share of each state’s population that was immigrant and the employment rate of U.S. natives. More detail on Zavodny’s calculations and the multipliers produced for each visa type can be found in the methodology appendix of that report.<sup>29</sup>

For purposes of these briefs, we use Zavodny’s finding that the award of 100 additional H-1B visas in a state is tied to 183 additional jobs for natives there in the 7 years that follow. The award of 100 additional H-2B visas creates 464 additional jobs for natives in the state during that same time period. We apply these multipliers to the number of visas in those categories authorized for each state in 2014.

In many of the state reports, we also present figures showing how visa denials resulting from the 2007 and 2008 H-1B lotteries cost the tech sectors of metropolitan areas both employment and wage growth in the two years that followed. The economists Giovanni Peri, Kevin Shih, and Chad Sparber produced these estimates for a PNAE report on the H-1B visa system that was released in 2014. That report relied on Labor Condition Application and I-129 data that the authors obtained through a Freedom of Information Act request, as well as American Community Survey data from 2006 and 2011. The authors did regressions that examined the causal relationship between a “shock” in the supply of H-1B computer workers and computer employment in subsequent years for more than 200 metropolitan areas. More information on those estimates can be found in the methodology appendix of that report.<sup>30</sup>

## Naturalization

Using the ACS 2014 1-year sample, non-citizens eligible to naturalize are defined as non-citizens who are 18 years or above, can speak English, and have continuous residence in the United States for at least five years.

Researchers at the University of Southern California’s Center for the Study of Immigrant Integration published a report in 2012, “Citizen Gain: The Economic Benefits of Naturalization for Immigrants and the Economy,” which concluded that immigrants experience an 8 to 11 percent gain in their individual wages as a result of becoming naturalized. Because this earnings gain phases in over time—and we want to be conservative in our estimates—we model a wage increase of just 8 percent when discussing the possible gains that could accrue due to naturalization.<sup>31</sup> We use this multiplier and the mean individual wages of non-citizens in each state to estimate the additional earnings that non-citizens would earn if they naturalized. Finally, we calculate the aggregate wage earnings boost by multiplying the total number of non-citizens who are eligible for naturalization by the average increase in wage income per person.

## International Students

We obtain the size and share of postsecondary students who are international in each state from the 2014 Integrated Postsecondary Education Data System (IPEDS) fall enrollment data. Those figures are then applied to preexisting work previously done by NAFSA, an organization representing professionals employed in the international offices of colleges and universities across the United States. NAFSA has developed an economic value tool and methodology that estimates the total economic benefit and jobs created or supported by international students and their dependents in each state.<sup>32</sup> The economic contributions include the costs of higher education along with living expenses minus U.S.-based financial support that international students receive.

Because the enrollment data from IPEDS that we use in this brief is different from the underlying data used by NAFSA, our figures differ slightly from the NAFSA estimates of the economic contributions made by international students in the 2014-2015 school year.

## Voting

The estimates for the number of registered and active voters who are foreign-born are calculated from the Voter Supplement in the Current Population Survey (CPS) for the years 2008, 2010, 2012, and 2014 using the IPUMS database. The sample in CPS includes civilian non-institutional persons only. Foreign-born individuals who stated having voted between 2008 and 2014 are termed active voters.

Using data from the 2014 ACS 1-year sample, we estimate the number and share of foreign-born eligible voters. We define them as naturalized citizens aged 18 or older who live in housing units. Persons living in institutional group quarters such as correctional facilities or non-institutional group quarters such as residential treatment facilities for adults are excluded from the estimation. We also estimate the number of new foreign-born voters who will become eligible to vote in 2016 and 2020, either by turning 18 or through

naturalization, as well as the total number of foreign-born voters in these years. The estimates of newly eligible voters for 2016 include naturalized citizens ages 16 and 17 as of 2014 (thereby becoming of voting age by 2016). Those eligible to vote in 2020 include all naturalized citizens ages 12-17 in 2014. Applicable mortality rates are also applied.<sup>33</sup> In addition, we estimate newly naturalized citizens using data from the Department of Homeland Security, which show the two-year average of new naturalized citizens by state.<sup>34</sup> We discount from these numbers the percentage of children below 18 in households with a naturalized householder by state. Estimates of total foreign-born voters include naturalized citizens aged 18 or older in 2014, discounted by average U.S. mortality rates by age brackets, summed to the pool of newly eligible foreign-born voters.

Margin of victory in 2012 refers to President Barack Obama's margin of victory over Republican candidate Mitt Romney in terms of popular vote. The margins are negative in states that Romney won in 2012.<sup>35</sup>

## Undocumented

Using data from the 2014 ACS, we applied the methodological approach outlined by Harvard University economist George Borjas<sup>36</sup> to arrive at an estimate of the undocumented immigrant population in the overall United States and individual states. The foreign-born population is adjusted for misreporting in two ways. Foreign-born individuals who reported naturalization are reclassified as non-naturalized if the individual had resided in the United States for less than six years (as of 2014) or, if married to a U.S. citizen, for less than three years. We use the following criteria to code foreign-born individuals as legal U.S. residents:

- Arrived in the U.S. before 1980
- Citizens and children less than 18 year old reporting that at least one parent is native-born
- Recipients of Social Security benefits, SSI, Medicaid, Medicare, Military insurance, or public assistance

- Households with at least one citizen that received SNAP
- People in the armed forces and veterans
- People attending college and graduate school
- Refugees
- Working in occupations requiring a license
- Government employees, and people working in the public administration sector
- Any of the above conditions applies to the householder's spouse

The remainder of the foreign-born population that do not meet this criteria is reclassified as undocumented. Estimates regarding the economic contribution of undocumented immigrants and the role they play in various industries, and tax contributions are made using the same methods used to capture this information for the broader immigrant population in the broader brief. When estimating the aggregate household income, spending power, and tax contributions, we are not able to make reliable estimates for undocumented-led households in Alaska, Maine, Montana, North Dakota, South Dakota, Vermont, and West Virginia due to the small sample size of undocumented-led households in ACS. Finally, the variables giving a sense of the undocumented population's level of assimilation—including their English proficiency and time in the United States—are estimated by examining the traits of the undocumented population in the 1-year sample of the ACS.

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ABOUT

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The Partnership for a New American Economy brings together more than 500 Republican, Democratic and Independent mayors and business leaders who support sensible immigration reforms that will help create jobs for Americans today. Visit [www.renewoureconomy.org](http://www.renewoureconomy.org) to learn more.

