

REPORT IN BRIEF

Untapped Talent

The Costs of Brain Waste Among Highly Skilled Immigrants in the United States





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Highly Skilled Immigrants in the United States

Report in Brief

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Full report can be found at <http://bitly.com/MPIUntappedTalent>

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Executive Summary

Owing to its strong economy, renowned universities, and reputation for entrepreneurship, the United States has long attracted some of the world's best and brightest. As one of the most powerful magnets for talent, the United States enjoys significant economic advantages in terms of innovation and entrepreneurship. But as the United States and other countries are increasingly learning, these advantages could be greater if the nation's skilled immigrants could fully utilize their training and skills in the workforce. Many, however, cannot. In this report in brief, we discuss this population—specifically, the almost 2 million college-educated immigrants we estimate are either working in low-skilled jobs or unemployed in the U.S. labor market.

While brain waste is not a new phenomenon—take, for example the old, familiar story of doctors driving taxis—its **economic impacts** have not been estimated in the United States. Until now.

This skill underutilization—often referred to as “brain waste”—is both a challenge and an opportunity for the U.S. economy. Tapping this large reservoir of talent, skill, and education would serve as a source of productivity and growth. While brain waste is not a new phenomenon—take, for example the old, familiar story of doctors driving taxis—its economic impacts have not been estimated in the United States. Until now.

In the full-length report that we summarize here,¹ we estimate the economic penalty that immigrant underemployment imposes, both in forgone earnings and tax payments. (See Box 1 for more detail on the terms used in the report.) To do so, we use U.S. Census Bureau data to analyze demographic characteristics and estimate the forgone earnings and taxes at federal, state, and local levels. This research produces findings nationally, as well as for seven states that include a mix of traditional immigrant destinations (California, Florida, New York, and Texas), a relatively new destination state (Washington), and two industrial states that have recently sought to attract skilled immigrants (Michigan and Ohio).²

Our findings are telling. The underemployment of immigrant college graduates results in tens of billions of dollars in forgone earnings and taxes annually, which in turn affects our economy at every level by lowering productivity and consumer demand. Given that skills and education degrade over time if not put to productive use, brain waste can also have long-term detrimental effects on foreign-born workers. Highly skilled immigrants who cannot fully utilize their skills are less likely to earn family-sustaining wages and achieve financial stability for themselves and their families. At the same time, finding a way to tap underutilized skills would have a positive impact on national and local economies.

The brain waste we detail in our report should be of special concern to policymakers now. One reason for this is that the highly skilled comprise an ever growing slice of newly arrived immigrants. Almost half of immigrant adults who entered the United States between 2011 and 2015 were college graduates—a sharp rise from the 33 percent of recently arrived immigrants entering before the 2007-09 recession. As recently as 1990, just 27

KEY FINDINGS

Nearly **2M highly-skilled immigrants** in the United States are working in low-skilled jobs or are unemployed—a phenomenon known as “brain waste” or skill underutilization.

There were 45.6 million college graduates in the U.S. labor force; 7.6 million were born outside the United States, according to our analysis of 2009-13 U.S. Census Bureau data. Of these 7.6 million immigrants, one in four, or 1.9 million individuals, were either underemployed or unemployed—a far higher share than for the U.S. born.

Immigrant underemployment represents a lost opportunity for the U.S. economy, resulting in **billions of dollars in forgone earnings and tax payments** annually at federal, state, and local levels.

If these highly skilled immigrants were working at their skill level, in the professions for which they had trained and have experience, they would earn \$39.4 billion more annually. As a result, they would pay \$10.2 billion more in taxes: \$7.2 billion at the federal level, and \$3 billion at the state and local level. If employed in adequate jobs (in other words, middle- or high-skilled jobs) *at the same rate as college-educated U.S.-born workers*, we estimate they could make up \$28.5 billion of that gap.

Brain waste is a concern across the nation, but it affects **some states more than others.**

Of the seven states we examined, Florida had the highest rates of skill underutilization (32 percent), while Michigan and Ohio had the lowest (20 – 21 percent). The seven states accounted for nearly 60 percent of the \$39.4 billion in annual forgone earnings that result from immigrant college graduates’ low-skilled employment: California (\$9.4 billion); New York (\$5.1 billion); Florida (\$3.6 billion) Texas (\$2.5 billion); Washington (\$830 million); and half a million dollars apiece for Michigan and Ohio. The resulting forgone tax payments in the states studied ranged from approximately \$700 million and \$600 million yearly for California and New York respectively, to roughly \$50 million for Michigan.

KEY FINDINGS

Brain waste is particularly acute for immigrants who were educated outside the United States.

Immigrants who earned their college degrees abroad were far more likely to be underemployed or unemployed than those who went to U.S. universities. While 29 percent of foreign-educated immigrants were underutilized, only 21 percent of U.S.-educated immigrants were. Foreign-educated immigrant women faced particularly high rates of brain waste: 32 percent, or close to one in three were underemployed or unemployed during the 2009 to 2013 period.

Citizenship status plays a role in determining skill underutilization.

Highly skilled immigrants who had become U.S. citizens were less likely than legal permanent residents (aka green-card holders), to experience brain waste: 23 percent versus 30 percent. Being unauthorized imposes a high risk of brain waste. Forty-three percent of unauthorized immigrants who earned their degrees abroad were either working in low-skilled jobs or unemployed.

percent of newly arrived immigrant adults held at least a bachelor's degree.³

While the principal focus of U.S. labor policy has been on *developing* human capital—chiefly by improving access to college and graduation rates—our research leads to the inescapable conclusion that more attention should be paid to the *utilization* of existing human capital.

Such efforts are not only good public policy, they also represent a comparatively inexpensive investment, considering that most highly skilled foreign-born workers already have their university degree in hand when they come to the United States.

There are many barriers to adequate employment for highly skilled immigrants that could be addressed—

BOX 1: WHAT IS BRAIN WASTE? QUICK DEFINITIONS

Brain waste occurs when college graduates cannot fully utilize their skills and education in the workplace despite their high professional qualifications. (We use the terms *college educated* and *highly skilled* interchangeably in this report.)

We define *brain waste* (or *skill underutilization*) as comprising two unfavorable labor market outcomes: unemployment and underemployment.

- **Unemployment** occurs when a person who is actively searching for employment is unable to find work.
- **Underemployment** refers to work by the highly skilled in "low-skilled jobs", that is, jobs that require only moderate on-the-job training or less (e.g., home-health aides, personal-care aides, maids and housekeepers, taxi and truck drivers, and cashiers). These occupations typically require a high school diploma or less.

In contrast, highly skilled individuals who are adequately employed are working in

high- or middle-skilled jobs. High-skilled jobs require at least a bachelor's degree (e.g., postsecondary teachers, surgeons, scientists, and engineers); middle-skilled jobs require long-term on-the-job training, vocational training, or an associate's degree (e.g., carpenters, electricians, massage therapists, and real estate brokers). Because individuals in middle-skilled jobs are considered adequately employed in our analysis, underemployment here refers only to those who are *severely underemployed*, or in positions substantially below their level of training.

or at least alleviated—through targeted programs and policies. College-educated immigrants face a number of unique employment hurdles that make it particularly difficult, time-consuming, and costly to get jobs at the appropriate skill level. Limited English skills, unfamiliarity with the American labor market and the process of applying for U.S. jobs, and lack of professional networks can make it hard to obtain adequate employment. Differences in international education and training standards, as well as negative perceptions of the quality of foreign education and work experience, can limit employer interest. Immigrants can also face difficulty getting their foreign-earned academic and professional credentials recognized and gaining professional licenses. And finally, there is a shortage of educational programs that teach professional and business English and that bridge skill deficits between what was taught abroad and the knowledge required in the United States.

The underemployment of immigrant college graduates results in **tens of billions of dollars** in forgone earnings and taxes annually.

In recent years some state and local leaders have taken important steps to help remove the barriers that may hinder the adequate employment of college-educated immigrants. Later in this document, we discuss some of these interventions and spotlight stories of individuals who, with the help of such programs, have succeeded in fully utilizing their skills.

PART I

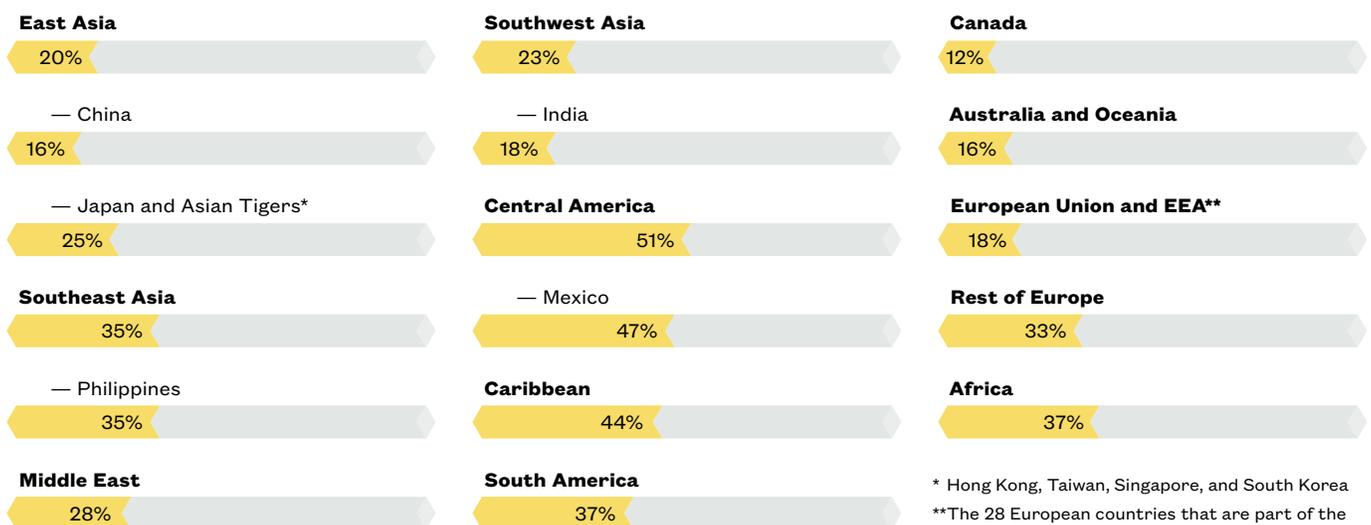
Who Is Affected and What Factors Lead to Brain Waste?

How many immigrants with university degrees are either in low-skilled jobs or unemployed in the United States? What are some of the factors that appear to be tied to this skill underutilization? To answer these questions, we analyzed pooled 2009-13 American Community Survey (ACS) data from the U.S. Census Bureau⁴ and estimated the population of immigrants who held at least a bachelor’s degree but worked in either low-skilled jobs or were unable to find work. We also conducted regression analyses to determine how individual factors contributed to the

likelihood that university degree holders were working in low-skilled jobs.

We estimate that approximately 1.9 million college-educated immigrants were employed in low-skilled work or unemployed during the period studied: 999,000 men and 919,000 women. Brain waste affects immigrants from a wide range of countries. Looking just at those who earned their college degrees abroad,⁵ we find that roughly half of highly skilled immigrants coming from Central America and Mexico were underutilized, as

FIGURE 1: SHARE OF FOREIGN-EDUCATED HIGH-SKILLED IMMIGRANTS WHO WERE UNDEREMPLOYED OR UNEMPLOYED, 2009-13



* Hong Kong, Taiwan, Singapore, and South Korea

**The 28 European countries that are part of the European Union, plus Iceland, Liechtenstein, and Norway, which are members of the European Economic Area (EEA).

In the full-length report that this paper summarizes, we find that high-skilled immigrants were more likely to be underemployed if they had low levels of English proficiency or earned their degree at a foreign institution. An individual’s race/ethnicity and visa status also added to the likelihood of skill underutilization. We highlight some of the most salient findings in this section.

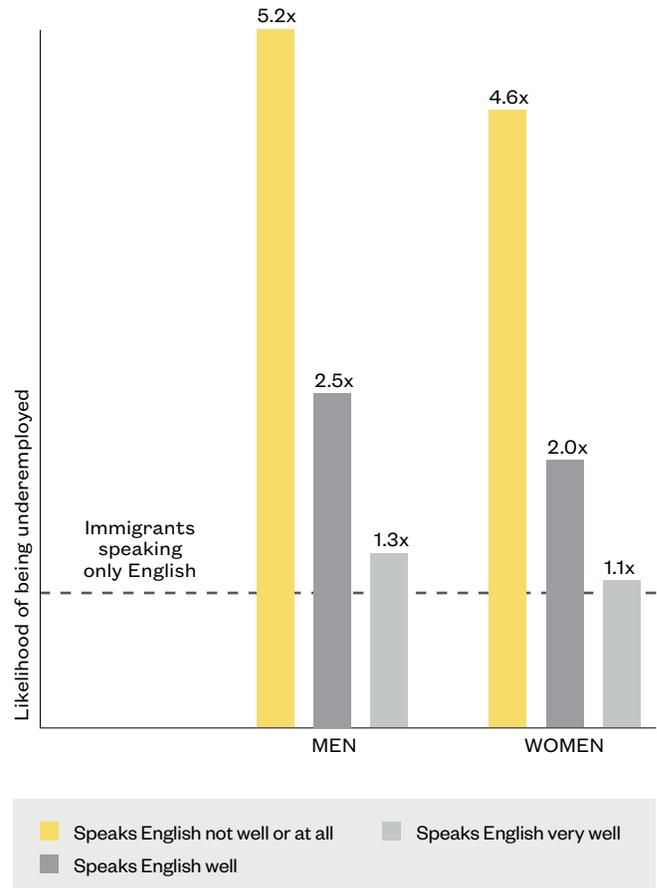
English Proficiency and Place of Education

Our research finds that low levels of English proficiency are among the strongest determinants of brain waste. While three-quarters of college-educated immigrants reported they were fully English proficient during the period analyzed, those who spoke English “not well” or “not at all” were about five times more likely to be in low-skilled jobs than those who spoke only English, after controlling for other factors.⁶ Immigrants with medium levels of English proficiency, that is those who reported they spoke English merely “well,” were also disadvantaged: Their odds of low-skilled employment were twice as high as English-only speakers, other key factors being equal (see Figure 2).

Notably, this work is consistent with the findings of a report released by World Education Services and IMPRINT, a coalition of nonprofits that focus on helping immigrants integrate into the labor force. That report, which surveyed 4,000 high-skilled immigrants in six cities, found that speaking English “very well” was highly correlated with the likelihood an immigrant was making at least some use of his or her higher education credentials in the workplace.⁷

Our analysis also found that earning a degree abroad—instead of at a U.S. college or university—places immigrants at a substantially higher risk of skill underutilization. In many ways, this disadvantage is not surprising given the challenges immigrants educated abroad can have conveying to U.S. employers the quality of their education or the relevance of foreign credentials. Of the 1.9 million immigrant college graduates who were underemployed or unemployed, 1.2 million of them—or

FIGURE 2: IMPACT OF ENGLISH PROFICIENCY ON UNDER-EMPLOYMENT FOR HIGH-SKILLED IMMIGRANTS, 2009-13



How to Read the Chart: The above figure shows how much more likely immigrants with various English proficiency levels are to work in a low-skilled job compared to similar foreign-born workers who are English-only speakers. To interpret the chart, examine how far the given estimate is varies from the comparison group. The bar labeled 1.3x indicates that immigrants speaking English “very well” were 30 percent more likely to be in a low-skilled job, after controlling for other factors. The bar labeled 5.2x indicates that immigrants who speak English “not well” or “not at all” were 5.2 times more likely to be in a low-skilled job, holding other key factors equal.

SPOTLIGHT ON

Richard Naing

Primary Employment Barrier: **English Language Ability**

When Richard Naing arrived in Idaho as a refugee in 2013, he spoke no English and lacked proof of his professional computer experience. After escaping Myanmar (Burma) under threat from its military junta, Naing spent nine years as a refugee in Malaysia, where refugees cannot legally work. As a result, his computer training, job experience, and professional coursework took place off the books.

Naing's hard-to-vet resume and limited English proficiency proved problematic when he was resettled to the United States. Knowing he'd have only a few months of financial support, he quickly began a job search. But it proved difficult. Interviewers always asked about his certification, he said, something he'd previously been unable to acquire, given his status. And he stumbled speaking English. Refugee candidates might know answers to interviewers' questions, he said, but "we can't answer really right, because we're translating in our mind."

"Most of the time we feel with the interview we fail," Naing said, his English improved but still imperfect.

The 28-year-old knew he needed formal computer training and English lessons. But he had other pressing needs: to learn how to pay bills and navigate public transportation, where to shop, who to call for help, how to drive, and more. And, with the clock ticking on the aid cutoff, he needed a job.

Unable to secure an interview in a computer-related field, Naing was hired as a hotel houseman, delivering laundry and guest supplies for \$7.55 an hour. Talking to coworkers helped his English significantly. But he wasn't passionate about the job. That enthusiasm was reserved for his own field of information technology (IT), where "I keep learning," he said. "That feeling is great."

Working the evening shift at the hotel, Naing spent mornings looking for IT jobs, applying at some 50

companies. But the language barrier continued to hinder him. The state labor office provided job leads, but didn't have interpreters. It was only when the International Rescue Committee (IRC), which had helped resettle Naing, sent an interpreter with him on a job interview that he received an offer, this time as a data technician with a global technology company based in Boise.

There he worked the overnight shift, earning \$12 an hour. He stayed a year, but found it frightening to drive on snowy roads at night. He also continued to search for a way to improve his English, and with assistance from Global Talent Idaho (GTI), a private program that helps underemployed immigrants integrate into the workforce, won a scholarship to attend an intensive, one-year English-language program at Boise State University. GTI also helped him write a new resume and gave him extensive training on how to interview with U.S. companies.

"They fight for me," he said.

To accommodate his school schedule, Naing moved to a full-time job on the swing shift at St. Luke's Hospital, where he was quickly promoted. He still works there, earning \$15.50 per hour as a systems analyst. "I'm learning from them, they give me a lot of training," he said. "I like that job." And upon completing school this past summer, Naing took a second, part-time job with a financial investment firm, earning \$20 per hour—enough to pay his bills and have disposable income.

Much of that extra income goes toward computer equipment for fellow refugees. Naing goes to their houses and provides free training. "A lot of my community have a lot of turmoil from their place, or they're missing home. They are really isolated," he said. "So they see somebody they have to talk to. It's the same here with me, too."

FIGURE 3: SHARE OF HIGH-SKILLED IMMIGRANTS WHO WERE UNDEREMPLOYED OR UNEMPLOYED, BY GENDER AND PLACE OF EDUCATION, 2009-13



FIGURE 4: SHARE OF HIGH-SKILLED IMMIGRANTS WHO WERE UNDEREMPLOYED OR UNEMPLOYED, BY DEGREE, LEVEL, AND PLACE OF EDUCATION, 2009-13



more than 60 percent—earned their degrees abroad. Looking at the entire foreign-educated immigrant population, 29 percent were either in low-skilled jobs or unemployed. Foreign-educated women had particularly high levels of brain waste, with almost one in three working in low-skilled jobs or looking for employment (see Figure 3).

We also find that skill underutilization falls sharply with additional degrees. A significant share of the foreign educated with only bachelor’s degrees experienced brain waste: 39 percent of men and 40 percent of women (see Figure 4). Immigrants with a bachelor’s degree were much more likely to be employed in low-skilled work or unemployed compared to those with a doctorate or professional degree regardless their place of education.

Our regressions demonstrate clearly the impact of holding a foreign university degree or pursuing higher levels of education. Even after controlling for other factors that contribute to underemployment, such as underlying English proficiency or citizenship status, we find that high-skilled immigrants who earned their degrees abroad were roughly 50 percent more likely to work in low-skilled positions than their U.S.-educated counterparts. The level of degree held by immigrants also played into the risk of low-skilled employment. After controlling for other contributing factors, we find that having a PhD or professional degree, such as a law or medical degree, lowered the chances of working in a less-skilled job by roughly 75 to 80 percent compared to an immigrant with just a bachelor’s degree.

Citizenship and Visa Status

Gaining U.S. citizenship is known to convey benefits to those who naturalize. Studies have found that immigrants who become citizens seek out higher education at greater rates than noncitizens.⁸ And in part because naturalization opens up a wider range of job opportunities, numerous studies have demonstrated that obtaining citizenship raises the wages of foreign-born workers.⁹ Here we also find that U.S. citizenship is correlated with lower levels of skill underutilization. Our profile of the high-skilled immigrant population

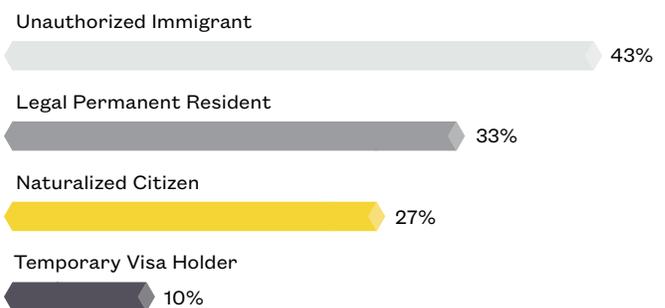
FIGURE 5: SHARE OF HIGH-SKILLED IMMIGRANTS WHO WERE UNDER-EMPLOYED OR UNEMPLOYED, BY LEGAL STATUS AND PLACE OF EDUCATION, 2009-13

FOREIGN-EDUCATED IMMIGRANTS

DISTRIBUTION BY LEGAL STATUS



SHARE WHO ARE UNDEREMPLOYED OR UNEMPLOYED



U.S.-EDUCATED IMMIGRANTS

DISTRIBUTION BY LEGAL STATUS



SHARE WHO ARE UNDEREMPLOYED OR UNEMPLOYED

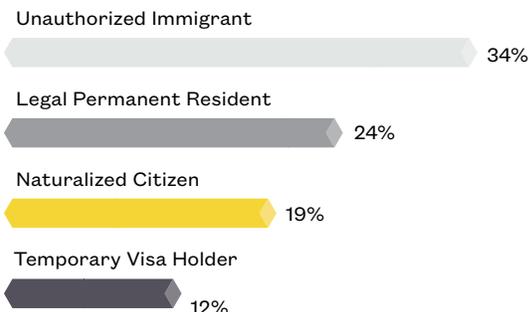


TABLE 1: NUMBER AND SHARE OF HIGH-SKILLED IMMIGRANTS WHO WERE UNDEREMPLOYED OR UNEMPLOYED, BY UNDERGRADUATE FIELD OF STUDY, 2009-13

Undergraduate Degrees Earned	Number	Share Underemployed or Unemployed
STEM and Related Fields		
— Engineering and Engineering Technologies	262,000	19%
— Physical Sciences	65,300	18%
— Computer and Information Sciences *	108,500	17%
— Medical Health Sciences and Services	97,900	15%
— Biology and Life Sciences	58,000	13%
Other Fields		
— Education Administration and Teaching	162,500	36%
— Business	528,000	34%
— Communications	48,800	34%
— Fine Arts	79,000	32%
— Liberal Arts and Humanities **	82,400	30%
— Social Sciences ***	252,500	29%
— English Language, Literature, and Composition	43,400	27%

*Includes computer science, mathematics, statistics, and communications technology.

**Includes liberal arts, philosophy, religious studies, linguistics, and foreign languages.

*** Includes general social sciences; psychology; history; area, ethnic, and civilization studies; public affairs; and social work).

with degrees earned abroad finds that 27 percent of naturalized citizens experienced brain waste compared to 33 percent of foreign-educated legal permanent residents, and 43 percent of unauthorized immigrants. Immigrants on temporary visas—including many highly skilled foreign workers in the country specifically because they have been sponsored for a visa by an employer—had the lowest rates of brain waste (10-12 percent) (see Figure 5.)

Our regressions, once again, allowed us to focus on the specific impact that citizenship status has on determining whether an immigrant is underemployed. We find that after controlling for other related factors, legal permanent resident (LPR, aka green-card holder) men with college degrees were 11 percent more likely to

be in low-skilled jobs than those who were naturalized U.S. citizens. The citizenship premium was higher for women: LPR women were 43 percent more likely to be underemployed compared to women with U.S. citizenship, other key factors being equal.

Field of Study

Although our data only allow us to look at the field of study of high-skilled immigrants at the undergraduate degree level, some notable patterns concerning degree subject and rate of skill underutilization emerge. As might be expected, immigrants who earned humanities, teaching, or business degrees were far more likely to be

affected by brain waste than those who studied science, technology, engineering, and math (STEM) disciplines.

Highly skilled immigrants with STEM educational backgrounds represent almost **470,000 underutilized immigrants** with in-demand skills—a group that could be especially beneficial to employers if better utilized.

We find however, that even in more in-demand fields—where some employers say they struggle to find enough workers—brain waste persists. During the period we studied, 19 percent of immigrants with undergraduate degrees in engineering or engineering technology were underutilized, as were 17 percent of those with degrees in computer science and information fields.¹⁰ Similarly, 15 percent of immigrants with undergraduate degrees in medical and health sciences and services were either working in low-skilled jobs or looking for employment. Together, highly skilled immigrants with these STEM educational backgrounds represent almost 470,000 underutilized immigrants with in-demand skills—a group that could be especially beneficial to employers if better utilized (see Table 1).

SPOTLIGHT ON

George Alkassis

Primary Employment Barrier: **Lack of U.S. Work Experience**

George Alkassis spent 15 years working as an engineer and project manager in the United Arab Emirates. But when the Syrian's last job ended in December 2014, officials at his company said they weren't able to get him another visa. The UAE had stopped renewing Syrian visas due to the high volume of war refugees that were entering the country. As a Christian, Alkassis knew he faced an added threat of persecution by Islamic militant forces, or ISIS, back home. So he sought safety for his family in the United States.

Within three months, Alkassis received authorization to work in the United States, and immediately began what he assumed would be a quick hunt for a job as a project manager. After all, he was educated, experienced, and licensed in an engineering field he heard had workforce shortages in the United States. Yet employers repeatedly told him the same thing: "You don't have U.S. experience. You can't work as a project manager here." Alkassis said he asked one interviewer why the company wouldn't hire him, and was told that if he was hired, he'd quickly leave for a better opportunity once he had U.S. experience on his resume.

So Alkassis also applied for work as an electrical engineer. He had a combined 15 years of experience in electrical and mechanical engineering. But because 12 of those were also as a project manager, U.S. employers deemed him "too overqualified" for an engineering position.

Alkassis had little choice but to accept a relative's offer for a machine laborer job at a factory that manufactures dental equipment. "The job didn't require any

education," said Alkassis, who has a bachelor's degree in electrical and electronics engineering from Damascus University. "How will I live?" he asked a job counselor. "I have two kids and a third one on the way, and I cannot cover my expenses."

While working, Alkassis continued to apply for positions where he could use his skills. "I was spending four to five hours a day just applying for jobs," he said. Sometimes he applied for 40 jobs in a single day, "more than 2,000 jobs" total, he says, "maybe more than 4,000." At the same time, he passed his project-management-certificate exam, solicited help with his resume, and enlisted the aid of a U.S. senator and several social service organizations. "It was just, 'sorry, sorry, sorry, sorry,'" he said.

Often Alkassis couldn't get past job recruiters, who said they were only able to refer candidates who had green cards—something this asylum seeker lacked. "When you reach that, you are very sad, and you are losing hope," he said. "But finally you have to continue. You have to continue applying."

In January 2016, Alkassis landed an interview with Walbridge, a century-old international construction firm based in Detroit, and was hired as a technical engineer. The job requires him to spend much of the week away from his family, but he doesn't complain. "I like my new job," he said. He completed the two-month training program in one month, and now earns \$75,000 a year plus benefits, enough that he can finally stop worrying about paying the bills.

PART II

The Costs of Brain Waste

Underemployment represents a missed opportunity not only for immigrants and their families, but for the broader U.S. economy. We estimate for the first time the economic cost in terms of lost wages and forgone tax contributions that results from the low-skilled employment of highly skilled workers. It is important to note that our estimates of forgone earnings and tax contributions are conservative because our analysis was necessarily confined to the approximately 1.5 million highly skilled immigrants who were actually *employed* during the period studied.¹⁶ Thus they do not account for the lost income for high-skilled immigrants who were unemployed.

To produce our estimates, we compared the average annual earnings of highly skilled immigrants working in

low-skilled jobs to those who were adequately employed (in other words in high- or middle-skilled positions). Not surprisingly, the findings revealed that immigrants in low-skilled jobs earned much less than their adequately employed counterparts. The earnings gap also varied by place of education and gender. Foreign-educated immigrant men in low-skilled jobs earned \$56,000 less per year than those in high- or middle-skill jobs, while the gap among U.S.-educated immigrant men was about \$49,000 (see Table 2). High-skilled immigrant women in low-skilled jobs earned on average \$32,000 to \$35,000 less than their adequately employed counterparts each year, depending on their place of education.

TABLE 2: SIZE OF THE EARNINGS GAP BETWEEN HIGH-SKILLED IMMIGRANTS IN LOW-SKILLED POSITIONS AND THEIR ADEQUATELY EMPLOYED COUNTERPARTS, BY PLACE OF EDUCATION AND GENDER, 2009-13

Average Annual Earnings	Foreign-Educated Men	Foreign-Educated Women	U.S.-Educated Men	U.S.-Educated Women
Immigrants in High- or Middle-Skilled Positions	\$96,000	\$62,000	\$96,000	\$67,000
Immigrants in Low-Skilled Positions	\$40,000	\$27,000	\$47,000	\$35,000
Gap	\$56,000	\$35,000	\$49,000	\$32,000

Note: This analysis is based only on college-educated immigrant adults (ages 25 and above) who were employed and reported earning at least \$1 in the year prior to the survey year. The authors also excluded the top 1 percent of earners. All earnings figures from the 2009-13 period were inflated to 2013 dollars.

What contributes to these wage gaps? Clearly, low-skilled work like that performed by janitors or cashiers pays lower wages than high- and middle-skilled jobs such as physicians or computer programmers regardless of qualifications. Low-skilled employment might also be less stable throughout the year, which decreases total annual earnings. Some of the earnings gap, however, can be explained by factors that go beyond simply holding a low-skilled job. If a low-skilled worker is based in a city with a relatively low cost of living, for instance, he or she may earn far less than a high-skilled worker living somewhere considerably more expensive, such as New York City or San Francisco. Some of the earnings gap could also be explained by the underlying characteristics of the workers themselves. An immigrant with a higher-level degree—for example a PhD instead of a bachelor’s—might earn more due simply to his or her additional training, while one with stronger English skills might enjoy a wage premium because of this linguistic proficiency.

Foreign-educated immigrant men in low-skilled jobs earned **\$56,000 less** per year than those in high- or middle-skill jobs.

To ensure that our estimates are not skewed by such factors, we revisit the wage gap figures detailed above, this time controlling for a variety of characteristics. These controls allow us to more effectively isolate what portion of the wage gap is due to underemployment itself, as opposed to outside factors such as citizenship or geographic location. Our estimates take into account the state where the immigrant lives, as well as age, race, level of English proficiency, and citizenship status, among other traits.¹² This approach allows us to ensure that the estimates we produce are a reasonable gauge of what workers in low-skilled jobs could actually earn in higher-skilled positions given their underlying characteristics.

The analysis produces two core estimates. First, we consider the *total* cost of low-skilled employment, quantifying the full amount of wages that high-skilled immigrants lose because they hold less-skilled jobs. Second, we produce an estimate that assumes that some level of underemployment among college graduates is to be expected in the economy. During the period studied, 14 percent of U.S.-born women and 16 percent of U.S.-born men were in low-skilled positions despite having college degrees. Our second estimate quantifies how much more high-skilled immigrants could earn *if they experienced the same level of low-skilled employment as natives*. It is worth remembering that we focus here on the subset of underutilized immigrants who worked during the period studied—versus the larger group that includes the unemployed.

FIGURE 6: AGGREGATE FORGONE WAGES DUE TO UNDEREMPLOYMENT, 2009-13

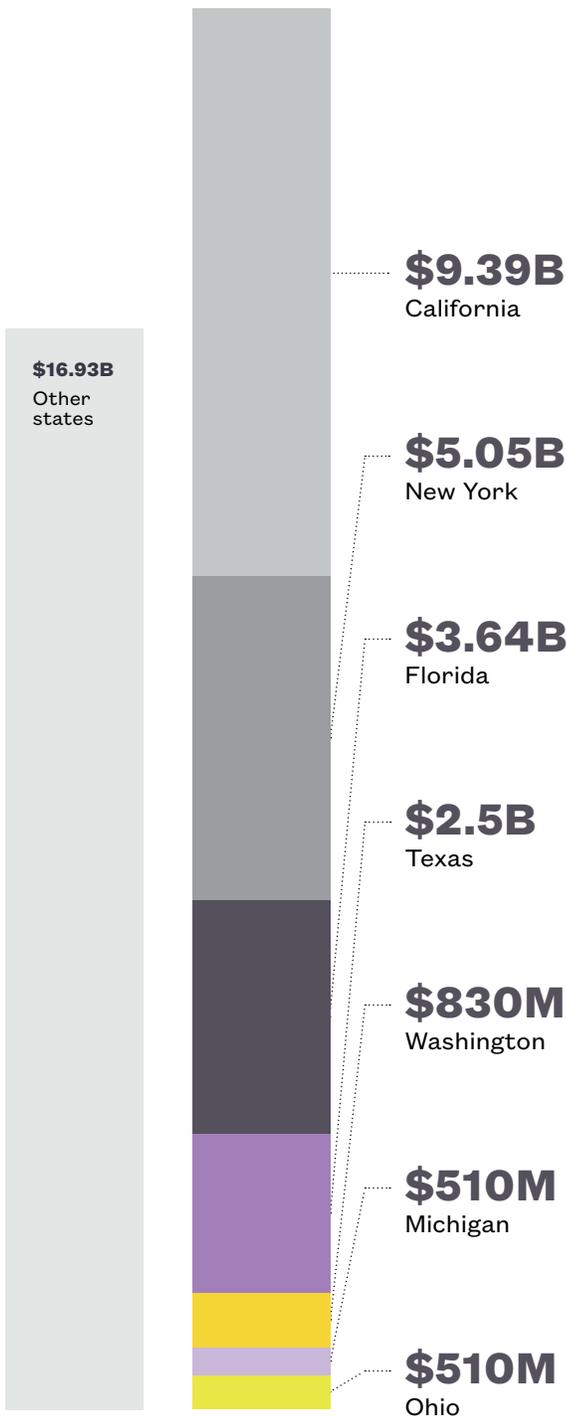
\$39.4B

Total amount of annual wages forgone by high-skilled immigrants in low-skilled jobs*

\$28.5B

Wages that could be made up if immigrants achieved the same level of adequate employment as natives**

FIGURE 7: ESTIMATED ANNUAL LOST WAGES DUE TO IMMIGRANT UNDEREMPLOYMENT FOR SELECTED STATES, 2009-13



The Cost of Brain Waste in Lost Wages

We estimate that college-educated immigrants who were employed lost \$39.4 billion in total wages each year due to the fact that they held less-skilled jobs.¹³ To put this figure in context, immigrant-led households in the entire state of Virginia earned \$36.5 billion in income in 2014. In Washington State, they earned \$30.9 billion.¹⁴ Had immigrants been able achieve the same level of adequate employment as their U.S.-born high-skilled counterparts we estimate they could have closed that gap considerably, earning \$28.5 billion more per year.

We were also able to examine the cost of underemployment in seven states, determining the amount of forgone wages and tax revenues. Our state analyses can be found in a series of state fact sheets released concurrently with our full report and this summary here: <http://bit.ly/MPIUntappedTalent>.

Our estimates show that each of the states experienced a significant loss of earnings and potential tax revenues due to low-skilled employment of immigrant college graduates. These losses ranged from the \$9.4 billion in lost wages in California to the more than half a million dollars of forgone earnings in smaller states such as Ohio and Michigan. In Florida, the state with the highest underemployment rate of those surveyed, immigrant college graduates missed out on \$3.6 billion in potential additional earnings (see Figure 7 at left).

In Florida, the state with the highest underemployment rate of those surveyed, immigrant college graduates missed out on **\$3.6B** in potential aggregate earnings.

SPOTLIGHT ON

Heba Al Fuqaha

Primary Employment Barrier: **Cultural Differences**

Heba Al Fuqaha, a native Jordanian, came to Michigan in 2013 to accept a marriage proposal from an old friend she had known in Jordan and within two weeks began looking for work. “I knew from the first day that I wanted a job,” said Al Fuqaha. “I can’t stay home and do nothing.”

Based upon her professional experience and her proficiency in English, Arabic, and Chinese, Al Fuqaha anticipated she would quickly get work in her field. During seven years as a manager at an international professional-services firm in Jordan, Al Fuqaha, who has bachelor’s degree from Hashemite University in Jordan, had brokered deals between Chinese and Jordanian import-export companies and launched a nonprofit initiative to help small family businesses improve their market performance.

“I thought the job search was going to be so easy,” she said.

The reality was otherwise. For eight months, she applied to several jobs a day. “Hundreds of jobs, maybe thousands,” she said. None resulted in an interview.

The only responses were scams, people who demanded money in exchange for some elusive promise. One stole her identity after she naively submitted her birthdate and other personal information. “Nobody told me not to provide this,” she said. “A lot of things we don’t consider confidential in Jordan.”

Defeated, she accepted a position as an entry-level accountant at a friend’s small business, a job so far

below her skillset that within a day she was back online searching for professional opportunities. This time, however, she typed “new immigrants” and “job search” into the search bar and found Upwardly Global, a national nonprofit that provides training and networking to underemployed and unemployed skilled immigrants, helping them integrate into the U.S. workforce.

Volunteers helped Al Fuqaha revamp her resume, update her LinkedIn profile, and adapt her interview skills. Her main employment barriers, it turns out, were cultural. She had previously used a lengthy CV rather than a resume, for example, and avoided taking individual credit for accomplishments, instead crediting her team. “Using the ‘I’ word in our culture is not acceptable,” she explained.

While Al Fuqaha started getting interviews, it still took two years to receive an offer that matched her skills, for reasons familiar to many other new arrivals: employers either wanted her to have U.S. experience or said she was overqualified.

Through an Upwardly Global networking event, Al Fuqaha met with a global professional services company and was hired as a project and program management analyst. She doubled her salary, put her talent to use, and is now adding to her skills through challenging work. “It’s very close to what I did before, to my previous experience,” she said. “And there are some new things I’m learning. I love it.”

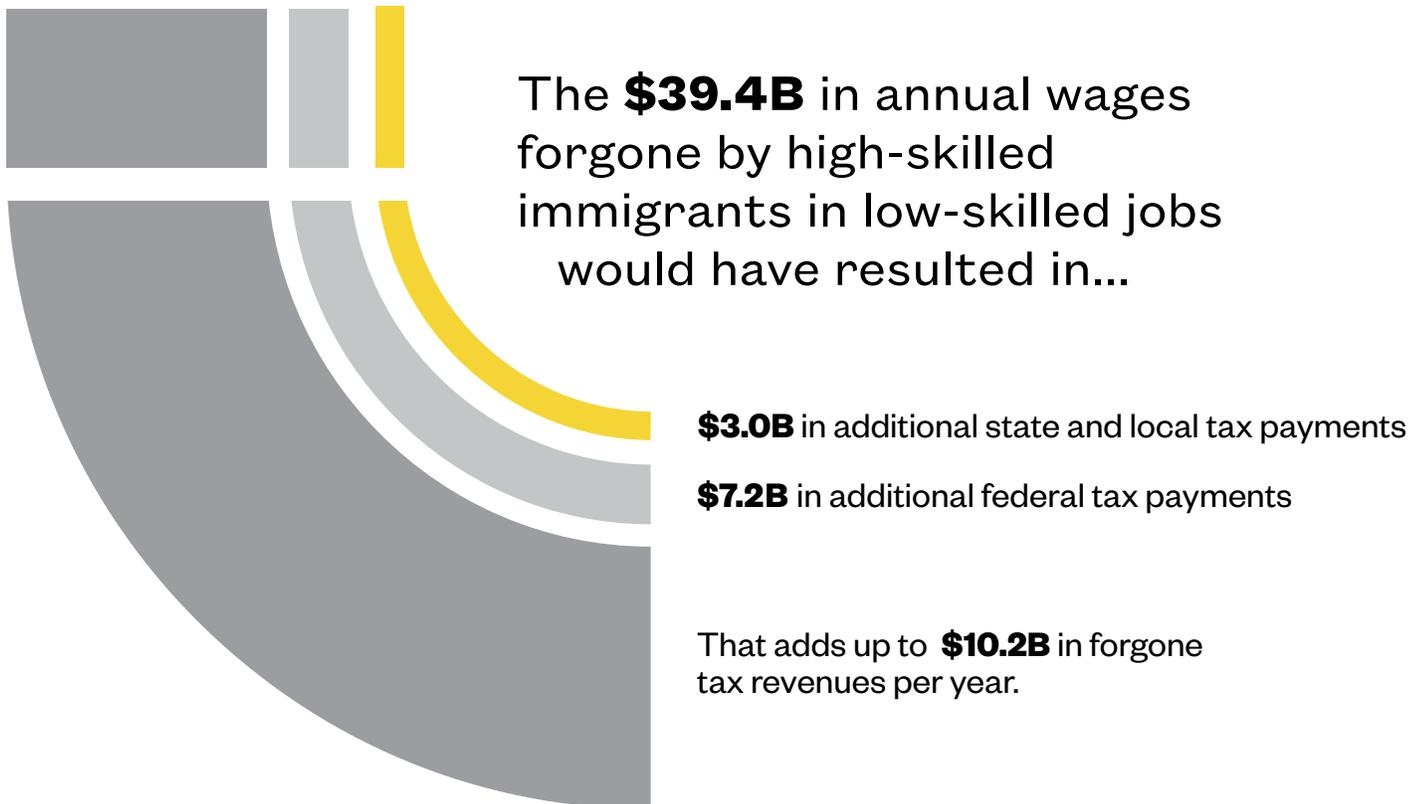
The Cost of Brain Waste on Forgone Tax Collections

Lower wages have broader fiscal impacts. When foreign-born residents earn less, they have lower levels of disposable income to spend at U.S. businesses. The federal government, states, and localities also miss out on valuable tax revenues. In our analysis, we relied on a sophisticated simulation model¹⁵ produced by the Institute on Taxation and Economic Policy (ITEP), a nonpartisan think tank focused on tax policies, to estimate how much more households with underemployed immigrants would pay in taxes each year if they were adequately employed. We estimate that if those households earned the \$39.4 billion in lost wages, they would have paid an additional \$10.2 billion in taxes each year. Of that amount, \$7.2 billion

would have gone to the federal government, and \$3 billion to states and localities. To put the forgone federal tax estimate in context, Congress appropriated \$7.8 billion in direct federal funding to the entire Head Start program in fiscal year 2014.¹⁶

Once again, we examined the effects of low-skilled employment of immigrant college graduates in seven states. The loss of earnings experienced by immigrants who were inadequately employed led these states and their local governments to miss out on more than \$1.8 billion in potential additional tax revenues. The state with the largest losses was California, where high-skilled immigrants in low-skilled jobs would have paid \$694.8 million more in additional state and local taxes per year if adequately employed. New York and Florida would have lost \$594 million and \$214.7 million, respectively (see Table 3).

FIGURE 8: TOTAL FORGONE STATE AND LOCAL TAXES DUE TO IMMIGRANT UNDEREMPLOYMENT, 2009-13



While substantial, our estimates of lost earnings and tax contributions—and in turn, the potential economic benefits of addressing brain waste—can be seen as conservative for two reasons. First, because the analysis includes only immigrants who were employed and had earnings of at least \$1 during the period studied, our estimates do not include the forgone earnings of the unemployed or those highly skilled immigrants who were out of the labor force. A total of 36 percent of immigrant women with foreign degrees and 22 percent of those with U.S. degrees were out of the labor force during the 2009-13 period, as were 18 percent of foreign-educated immigrant men and 10 percent of U.S.-educated immigrant men. Additionally, 5-7 percent of immigrant college graduates were looking for, but did not have, jobs. Had these two groups (not in labor force and unemployed) been included, our forgone earnings estimates and associated tax estimates would have been significantly higher.

Had our estimates included the lost earnings of high-skilled immigrants who were either unemployed or not in the labor force, our estimates on the economic impact of brain waste would have been **far higher**.

Our results are also conservative because of our approach to immigrants in middle-skilled positions. Our earnings estimates focus only on college-educated immigrants who were working in jobs that require substantially lower levels of formal qualifications—that is a high school diploma or less. This group of approximately 1.5 million people in low-skilled jobs is considered to be severely underemployed. There is, however, another group of immigrant college graduates of roughly equal size (1.4 million) who were working in jobs that required more than a high school diploma

but less than a four-year university degree—a group in middle-skilled work that could be considered to be moderately underemployed given their educational credentials. Had we examined the wages lost by these college graduates in middle-skilled work—a group that includes workers such as dental hygienists, teachers’ assistants, electricians, and the like—higher estimates of the effects of brain waste would have been generated.

TABLE 3: FORGONE STATE AND LOCAL TAXES DUE TO IMMIGRANT UNDEREMPLOYMENT FOR SELECTED STATES, 2009-13

State	Forgone State and Local Taxes
California	\$694.8M
New York	\$594.0M
Florida	\$214.7M
Texas	\$167.5M
Washington	\$74.9M
Ohio	\$53.0M
Michigan	\$48.6M
Total United States	\$3,033.6M

Conclusion

Our analysis shows the large economic cost that stems from immigrant skill underutilization, and the significant economic opportunity that addressing this brain waste presents. In the 2009-13 period, roughly 25 percent of all immigrants with college degrees were either unemployed or in low-skilled jobs. For the approximately 1.5 million highly skilled immigrants who were actively working but in low-skilled positions, the cost in lost wages was substantial, totaling \$39.4 billion per year. These unrealized wages led federal, state, and local governments to lose \$10.2 billion in tax revenues annually.

Our detailed profile of the underemployed immigrant population makes it clear that a number of factors—most notably lack of English proficiency—increases the likelihood that a highly skilled immigrant will struggle to find employment at his or her skill level. In many cities and states, steps are already being taken to address some of these barriers to full skill utilization—for the betterment of immigrants and their communities. The St. Louis Mosaic Project, for example, matches immigrants with established professionals in their field who introduce them to potential employers in their network and help them become oriented to the city’s job market.¹⁷ In New York, San Francisco, Chicago, and Detroit, the nonprofit Upwardly Global offers in-person training to help educated immigrants tailor their resume towards employment in their field of study, practice interviewing skills, and become familiar with business culture in their new home.¹⁸

At the state level, a number of states have focused on a range of policies and initiatives that promote immigrants’ economic mobility and success. Michigan and Ohio, in particular, are working to connect international students with potential employers, and have identified credential recognition and professional

licensing for immigrants who were educated or licensed abroad as critical elements of a successful immigrant integration strategy. Michigan today offers immigrants an online licensing guide with practical guidance on how to become licensed in numerous professions ranging from nursing to engineering, as well as coaching for immigrants seeking employment in their fields.¹⁹ A variety of agencies in Ohio are engaged in helping international students find appropriate employment in the state after graduation.

Although it is beyond the scope of our analysis to determine the effectiveness of these and similar programs, anecdotal evidence suggests that some initiatives could be making a difference. Upwardly Global, for instance, has determined that the average user of its program earns \$175,000 more in wages over the five-year period after receiving assistance.²⁰

Given the size of the brain waste problem we have documented—an issue that affects close to 2 million immigrant college graduates—it is clear that such programs need to be continued and expanded. It is also imperative that policymakers address this skill underutilization as it affects the native-born population as well. Our research finds that 18 percent of U.S.-born college graduates were working in low-skilled jobs or unemployed during the period studied. While our research focused on the likely causes of immigrant brain waste, more work needs to be done to understand these dynamics and develop solutions that allow all high-skilled workers, regardless of their place of birth or education, to reach their full potential as workers and taxpayers in the years ahead.

Endnotes

- 1 This report in brief summarizes the principal findings of the Migration Policy Institute (MPI), New American Economy (NAE), and World Education Services (WES) report by Jeanne Batalova, Michael Fix, and James D. Bachmeier, *Untapped Talent: The Costs of Brain Waste Among Highly Skilled Immigrants in the United States* (Washington, DC: MPI, NAE, and WES, 2016), www.migrationpolicy.org/research/untapped-talent-costs-brain-waste-among-highly-skilled-immigrants-united-states. The report updates MPI's earlier work in assessing the scope of skill underutilization among college-educated immigrants in the United States; see Jeanne Batalova and Michael Fix with Peter A. Creticos, *Uneven Progress: The Employment Pathways of Skilled Immigrants in the United States* (Washington, DC: MPI, 2008), www.migrationpolicy.org/research/uneven-progress-employment-pathways-skilled-immigrants-united-states.
- 2 Individual fact sheets examining skill underutilization for each of these seven states can be accessed at the "Brain Waste and Credential Recognition" section of the MPI website, www.migrationpolicy.org/topics/brain-waste-credential-recognition.
- 3 Authors' analysis of U.S. Census Bureau data from the 2006 and 2015 American Community Surveys (ACS) and 1990 decennial census.
- 4 Using several years of pooled data from the U.S. Census Bureau's ACS permits us to increase the accuracy of our estimates.
- 5 The ACS does not report directly the country of education for respondents. As a proxy, we define 'foreign-educated' immigrants as those who have at least a bachelor's degree and who arrived in the United States after age 24. We define 'U.S.-educated' immigrants as persons with a college degree who arrived in the United States before age 25.
- 6 Our descriptive analysis explores the relationship between highly skilled immigrants' demographic, language, education, and other characteristics and their risk of brain waste. Our research questions were: What contributes to the fact that immigrant college graduates are either unemployed or working in low-skilled jobs, and how do these workers compare to the adequately employed? Additionally, with the help of regression analyses we can identify which of these traits matter more relative to others. In running the regression analysis, we had to limit our study group to employed immigrants and to exclude those who were unemployed. The regression analysis compares two groups: immigrants employed in low-skilled jobs versus those who are adequately employed.
- 7 Amanda Bergson-Shilcock and James Witte, *Steps to Success: Integrating Immigrant Professionals in the U.S.* (New York: World Education Services and IMPRINT, 2015), www.imprintproject.org/stepstosuccess/.
- 8 Jacob L. Vigdor, *From Immigrants to Americans: The Rise and Fall of Fitting In* (Lanham, MD: Rowman & Littlefield, 2010); Bernt Bratsberg, James F. Ragan Jr., and Zafar M. Nasir, "The Effect of Naturalization on Wage Growth: A Panel Study of Young Male Immigrants," *Journal of Labor Economics* 20, no. 3 (2002): 568-97.
- 9 Madeleine Sumption and Sarah Flamm, *The Economic Value of Citizenship for Immigrants in the United States* (Washington, DC: MPI, 2012), www.migrationpolicy.org/research/economic-value-citizenship.
- 10 This broad category of undergraduate degrees includes the fields of computer science, math, statistics, and communications technology.
- 11 Due to methodological limitations, we could not estimate the amount that unemployed high-skilled immigrants could be earning if they found work at their skill level.

- 12** The models controlled for immigrant worker degree levels, age, age squared (as a proxy for work experience), race and ethnicity, English proficiency, length of time in the United States, U.S. citizenship/legal status, marital and parental statuses, state of residence, full-time employment, industry of employment, and survey year.
- 13** While a recent National Academies of Science report found that skilled immigrants often have complementary skills to those of native workers, the report noted possible competition in some narrow fields. See Francine D. Blau and Christopher Mackie, *The Economic and Fiscal Consequences of Immigration* (Washington, DC: National Academies of Sciences, Engineering, and Medicine, 2016), www.nap.edu/catalog/23550/the-economic-and-fiscal-consequences-of-immigration. Thus when new immigrants are hired for high-skilled/high-paying jobs (and improve their earnings), they may displace some domestic skilled workers or lower their earnings. In this light, some portion of the estimated \$39.4 billion in forgone wages may be overstated because the estimate does not account for the presumably modest levels of displacement or earnings losses encountered by domestic workers as a result of the improved employment of immigrant college graduates. The empirical research suggests, however, that the extent of job competition between skilled immigrant and native workers is limited.
- 14** New American Economy, "Reports: The Contributions of New Americans," accessed November 3, 2016, www.renewoureconomy.org/reports/.
- 15** The Institute on Taxation and Economic Policy (ITEP) developed a microsimulation tax model for calculating revenue yield and incidence of federal, state, and local taxes by income group. For more on the model, see ITEP, "ITEP Microsimulation Tax Model Overview," accessed June 30, 2016, www.itep.org/about/itep_tax_model_simple.php. The model employs large-scale national and state-level data from tax returns; population surveys; economic, consumption, and tax property data; and government and economic projections. A similar approach to federal tax calculations is used by the U.S. Treasury Department, the congressional Joint Committee on Taxation, the Congressional Budget Office, and the Urban Institute. ITEP has developed its own model for making state and local tax estimates. For details, see ITEP, *Who Pays? A Distributional Analysis of the Tax Systems in All Fifty States*, 5th edition (Washington, DC: ITEP, 2015), www.itepnet.org/whopays.htm.
- 16** U.S. Department of Health and Human Services, "Head Start Program Facts, Fiscal Year 2014," April 17, 2015, <https://eclkc.ohs.acf.hhs.gov/hslc/data/factsheets/2014-hs-program-factsheet.html>.
- 17** St. Louis Mosaic, "Get Connected," accessed September 25, 2016, www.stlmosaicproject.org/get-connected.html.
- 18** Steve Tobocman, *Guide to Immigrant Economic Development* (Decatur, GA: Welcoming America, n.d.), www.welcomingamerica.org/sites/default/files/WA_ImmigrantEconomicDevelopment_FINAL_web.pdf.
- 19** Michigan Department of Licensing and Regulatory Affairs, "An Online Resource for Skilled Immigrants," accessed September 30, 2016, www.michigan.gov/lara/0,4601,7-154-10573_68301--,00.html.
- 20** Upwardly Global, "Impact," accessed September 30, 2016, www.upwardlyglobal.org/us-immigration-issues.

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