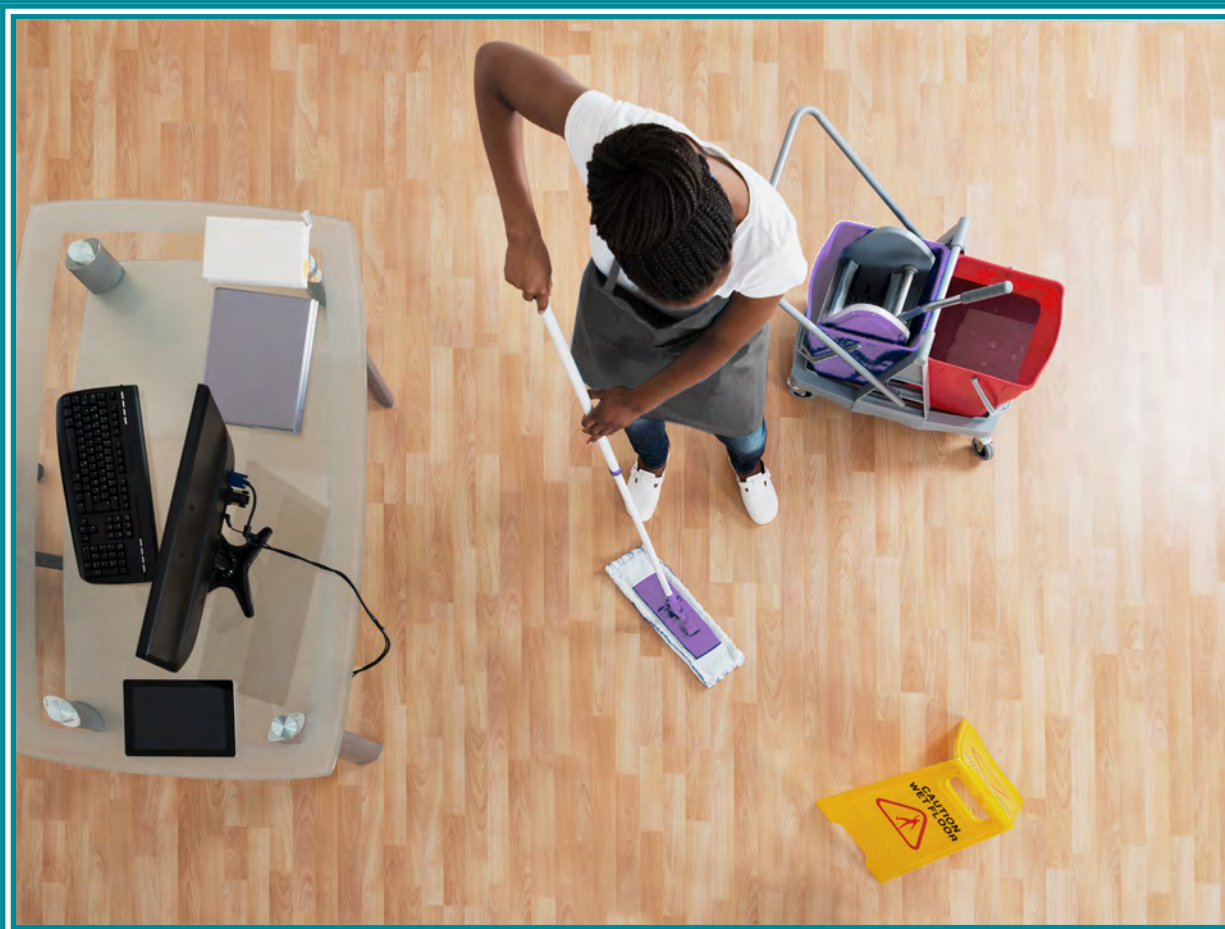


UNTAPPED TALENT

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



By Jeanne Batalova, Michael Fix, and James D. Bachmeier

UNTAPPED TALENT

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

By Jeanne Batalova, Michael Fix, and James D. Bachmeier

December 2016



Acknowledgments

The research for this report was supported by New American Economy (NAE), World Education Services (WES), and the J. M. Kaplan Fund. The authors express their gratitude to Robert Kaufman from Temple University; Jeffrey Reitz from the University of Toronto; Angela Marek Zeitlin, Pavel Dramski, and Kate Brick of NAE; Paul Feltman and Stacey K. Simon of WES; as well as Carl Davis and Meg Wiehe of the Institute on Taxation and Economic Policy (ITEP), who estimated the amount of forgone federal, state, and local taxes. They also thank David Dyssegaard Kallick of the Fiscal Policy Institute (FPI), who guided their thinking regarding tax implications of low-skilled immigrant employment. Finally, they are grateful to Demetrios G. Papademetriou and Michelle Mittelstadt of the Migration Policy Institute (MPI), who provided thoughtful comments on earlier drafts.

© 2016 Migration Policy Institute, New American Economy, and World Education Services.
All Rights Reserved.

Cover Design and Layout: Liz Heimann, MPI

No part of this publication may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopy, or any information storage and retrieval system, without permission from the Migration Policy Institute. A full-text PDF of this document is available for free download from www.migrationpolicy.org.

Information for reproducing excerpts from this report can be found at www.migrationpolicy.org/about/copyright-policy. Inquiries can also be directed to communications@migrationpolicy.org.

Suggested citation: Batalova, Jeanne, Michael Fix, and James D. Bachmeier. 2016. *Untapped Talent: The Costs of Brain Waste among Highly Skilled Immigrants in the United States*. Washington, DC: Migration Policy Institute, New American Economy, and World Education Services.



Table of Contents

- Executive Summary I**
- I. Introduction 4**
 - Research Questions and Report Organization 6
- II. Labor Market Outcomes for the College Educated 7**
 - A. Attachment to the Labor Force 7
 - B. Unemployment..... 8
 - C. Employment in Low-Skilled Jobs..... 8
- III. Factors Linked to Skill Underutilization 9**
 - A. Place of Education..... 9
 - B. English Proficiency 10
 - C. Legal Status/Citizenship..... 11
 - D. Place of Origin and Race/Ethnicity..... 12
 - E. Time in the United States 14
 - F. Level of Educational Degree..... 15
 - G. Degree Field..... 16
- IV. What Are the Critical Determinants of Low-Skilled Employment among Immigrants? 17**
- V. Forgone Earnings and Taxes Related to Low-Skilled Employment of Immigrant Workers 19**
 - A. Extent of Forgone Earnings 20
 - B. Extent of Forgone Taxes..... 21
 - C. Why These Estimates Can Be Viewed As Conservative..... 22
- VI. State Results: Brain Waste and Forgone Earnings and Taxes..... 23**
 - A. State Variations in Skill Underutilization 24
 - B. Extent of Forgone Earnings and Taxes in the Study States 25
- VII. Conclusions 26**
- Appendices 29**
- Works Cited 37**
- About the Authors 41**



Executive Summary

Over the past several decades high- and middle-income countries have developed a wide range of policies to attract highly skilled immigrant professionals.¹ Many, including the United States, have fallen short when it comes to fully tapping the skills and training of these newcomers, however. The result has been high levels of skill underutilization—often referred to as “brain waste”—as college-educated immigrants work in low-skilled jobs or are unemployed. These human-capital losses should be of special concern today as there has been a pronounced, steady shift in who is coming to the United States, with more highly educated immigrants arriving in recent years. Almost half (48 percent) of immigrant adults who entered the United States between 2011 and 2015 were college graduates—a sharp rise from the 33 percent among those who arrived before the 2007-09 recession and 27 percent who arrived before 1990.²

In 2008, the Migration Policy Institute (MPI) quantified for the first time the extent of brain waste among college-educated immigrants.³ This report updates those earlier MPI estimates and goes a step further by attaching a dollar value to this skill underutilization, one that represents both forgone earnings and tax payments. This is the first time the economic costs of underemployment have been quantified for the U.S. college-educated immigrant population.

Low-skilled employment among highly skilled immigrants carries substantial economic costs.

There were 45.6 million college graduates in the U.S. labor force, 7.6 million of whom were foreign born, according to 2009-13 Census Bureau data.⁴ This analysis finds that more than 1.9 million of those college-educated immigrants—one out of every four—experienced skill underutilization, that is, they were either working in low-skilled jobs or were unemployed (see Box 1 for definitions of terminology used in the report). Highly skilled immigrants were significantly more likely to experience brain waste than natives: 25 percent versus 18 percent.

Low-skilled employment among highly skilled immigrants carries substantial economic costs. As this report reveals, this underemployment leads to highly skilled immigrants forgoing tens of billions of dollars in lost earnings each year. Analyses by the Institute on Taxation and Economic Policy (ITEP) also find that this underemployment results in billions more dollars in lost tax revenues each year—money that could fund essential public services, for example.

In some ways the estimates presented here are conservative. First, they do not take into account the losses borne by college-educated immigrants who are either out of the labor force or unemployed. And second, the report uses a restrictive definition of underemployment that only includes highly skilled workers who are severely underemployed.

1 The terms “highly skilled,” “college educated,” and “college graduates” are used interchangeably in this report. College educated refers to persons who obtained a four-year college degree or higher. “Immigrants” (or the foreign born) are persons who were not U.S. citizens at birth, including naturalized U.S. citizens, lawful permanent residents (LPRs, also known as green-card holders), refugees and asylees, certain legal nonimmigrants (including those on student, work, or some other temporary visas), and the unauthorized. “The U.S. born” (or natives) are persons residing in the United States who were U.S. citizens in one of three categories: born in one of the 50 states or the District of Columbia, born in U.S. Insular Areas such as Puerto Rico or Guam, or born abroad to at least one U.S.-citizen parent.

2 Authors’ analysis of U.S. Census Bureau data from the 2006 and 2015 American Community Surveys (ACS) and 1990 decennial census.

3 Jeanne Batalova and Michael Fix with Peter Creticos, *Uneven Progress: The Employment Pathways of Skilled Immigrants in the United States* (Washington, DC: Migration Policy Institute, 2008), www.migrationpolicy.org/research/uneven-progress-employment-pathways-skilled-immigrants-united-states.

4 Five years of ACS data (2009 through 2013) were pooled to increase the precision of the estimates. Estimates represent the average of characteristics and outcomes during the five-year period.



Because place of education has a large impact on brain waste, this report examines outcomes for three groups of workers: (1) immigrants who are *foreign-educated* college graduates; (2) immigrants who are *U.S.-educated* college graduates; and (3) *U.S.-born* college graduates.⁵ The analyses are carried out for the nation overall and for seven states that represent 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).⁶ These states vary widely in the composition of their immigrant populations, the strength of their economies, and in the scope of public and private efforts to address the employment of highly skilled immigrants.

Box I. What Is Brain Waste? Quick Definitions

Brain waste describes the situation when college graduates cannot fully utilize their skills and education in the workplace despite their high professional qualifications. (This report uses the terms *college educated* and *highly skilled* interchangeably.)

The authors 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 this analysis, underemployment refers only to those who are *severely underemployed*, or in positions substantially below their level of training.

Among the principal findings of the report:

- ***The skill underutilization of foreign-born college graduates comes at a significant cost to these immigrants, their families, and the U.S. economy.***⁷ Nearly 2 million college-educated immigrants were either underemployed or unemployed during the 2009-2013 period. Of this group, nearly 1.5 million worked in low-skilled positions, leading them to forgo \$39.4 billion in earnings that they would have earned annually if they had worked in middle- and high-skilled jobs. If employed in adequate jobs (in other words, middle- or high-skilled jobs) *at the same rate as college-educated U.S.-born workers*, highly skilled immigrants could make up \$28.5 billion of that gap.
- ***Governments at federal, state, and local levels miss out on valuable tax revenues when immigrants are underemployed.*** The forgone earnings experienced by underemployed

5 The Census Bureau ACS does not report directly the country of education for respondents. As a proxy, this report defines foreign-educated immigrants as those who have at least a bachelor's degree and who arrived in the United States after age 24. U.S.-educated immigrants are defined here as persons with a college degree who arrived in the United States before age 25.

6 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 Migration Policy Institute (MPI) website, www.migrationpolicy.org/topics/brain-waste-credential-recognition.

7 See Section V for a discussion of these costs in the context of skilled immigrants' broader impact on the U.S. economy.



immigrant college graduates translated into \$10.2 billion in lost tax revenues annually. That included \$7.2 billion in federal taxes and \$3.0 billion that could have gone to state and local tax coffers.

- **Foreign degrees decrease access to higher-skilled employment.** Foreign-educated immigrants, who represent slightly more than half of all immigrant college graduates, were substantially more likely to be underemployed or unemployed (29 percent) than their U.S.-educated foreign-born counterparts (21 percent). These differences in outcomes may reflect differing perceptions regarding the quality of education earned abroad and nonrecognition of foreign credentials, among other factors.
- **Low levels of English proficiency represent the most significant risk factor for underemployment.** While three-quarters of highly skilled immigrants were fully English proficient, those who reported speaking English “not well” or “not at all” were five times more likely to be in low-skilled jobs than those who spoke only English, net of other factors.
- **Legal status and citizenship improve immigrant labor market outcomes.** Drawing on a unique MPI methodology that permits assignment of legal status to noncitizens in the Census data, the analysis finds that temporary visa holders and immigrants who are naturalized U.S. citizens or legal permanent residents (LPRs, or green-card holders) were much less likely to experience brain waste than unauthorized immigrant college graduates. Fully 40 percent of the highly skilled who are unauthorized experienced brain waste, compared to 23 percent of naturalized citizens and 30 percent of LPRs. Still, it is notable that 60 percent of unauthorized immigrants were working in middle- or high-skill jobs. Naturalized citizens had a lower risk of underemployment than green-card holders with similar human-capital, demographic, and other characteristics, indicating there is a “citizenship premium” for highly skilled immigrants in the labor market.
- **Race and ethnicity have a powerful impact on skill underutilization of college-educated immigrants and natives alike.** Regardless of nativity, Asians and Whites had significantly lower rates of brain waste than their Hispanic or Black counterparts. Among immigrants, Hispanics were the most disadvantaged group. When controlling for language proficiency, legal status, and other variables, the effect of race and ethnicity remained strong and negative for Black immigrants, while it was significantly reduced for Hispanics.
- **Among foreign-educated immigrants, 51 percent of Central Americans, 47 percent of Mexicans, and more than 35 percent of Africans and Filipinos were underutilized.** In contrast, brain waste levels were low among Indian (18 percent) and Chinese immigrants (16 percent).
- **Time in the United States mattered more for women than for men, for whom it had little impact on reducing their skill underutilization.** The effect was also more pronounced among foreign-educated women: While 39 percent of the recently arrived were employed in low-skilled work or unemployed, the rate fell to 27 percent for those who lived in the United States 15 years or more.
- **Additional education expands access to adequate employment.** Regardless of nativity or place of education, adults with a bachelor’s degree were two to three times more likely to experience brain waste compared to those with a doctorate or professional degree.
- **Field of study is important.** Biological sciences, engineering, and other science, technology, engineering and math (STEM) degrees earned at the undergraduate level are rewarded with better access to adequate employment; education and business degrees are generally not.
- **Immigrant skill underutilization varies by state.** Among the states examined, Florida had the highest rate of immigrant brain waste (32 percent), while Michigan and Ohio had the lowest (20-21 percent).



The seven study states together accounted for 57 percent of the \$39.4 billion in forgone annual earnings for highly skilled immigrants at the national level. The amounts were highest in California (\$9.4 billion) and New York (\$5.1 billion); they were lowest in Michigan and Ohio (just above half a billion dollars each). California and New York stood to gain the most in state and local taxes from forgone earnings (approximately \$700 million and \$600 million, respectively), Michigan the least (less than \$50 million).

This research leads to the inescapable conclusion that more attention should be paid to ensuring that all workers ... are given the opportunity to fully utilize their human capital.

The findings in this report underscore the need to address brain waste among immigrant college graduates and associated economic costs for the United States: losses that fall not just to immigrants but to the national and local economies in forgone taxes and reduced consumer spending. The report also reflects the reality that close to 7 million *U.S.-born* college graduates struggle to find employment at their skill level. While policies have concentrated mostly on human-capital development, this research leads to the inescapable conclusion that more attention should be paid to ensuring that *all* workers, regardless of their origin, are given the opportunity to fully utilize their human capital in ways that contribute to economic growth and competitiveness.

I. Introduction

In today's increasingly globalized world, skills are central to international competitiveness, economic growth, and labor force productivity.⁸ As a result high- and middle-income countries alike have developed a wide range of policies to attract the highly skilled.⁹ Like many countries, the United States expands its skill pool through immigration.¹⁰ Thanks to its strong economy, renowned universities, and reputation for entrepreneurship, the United States has long attracted many high-skilled immigrants. Indeed, nearly half of all college graduates living outside their country of birth—and almost one-fifth of the 4.5 million international students worldwide¹¹—are in the United States.

Recent research highlights another, less-recognized, phenomenon associated with skilled immigration: skill underutilization or brain waste. This phenomenon occurs when immigrants who are college graduates work in jobs that do not fully utilize their skills or cannot find employment.¹² Comparative

- 8 Bertelsmann Stiftung and MPI, eds., *Talent, Competitiveness, and Migration* (Gütersloh, Germany and Washington, DC: Verlag Bertelsmann Stiftung and MPI, 2009), www.migrationpolicy.org/research/talent-competitiveness-and-migration-0.
- 9 Organization for Economic Cooperation and Development (OECD), *International Migration Outlook 2015* (Paris: OECD Publishing, 2015).
- 10 OECD, *International Migration Outlook 2015*; OECD and European Commission, "Matching Economic Migration with Labour Market Needs in Europe" (policy brief, OECD and European Commission, Paris and Brussels, September 2014), <http://ec.europa.eu/social/BlobServlet?docId=12628&langId=en>; Maria Vincenza Desiderio, *Blue Card Redux: European Commission Plan to Recast Work Permit for Highly Skilled Holds Question Marks* (Washington, DC: MPI, 2016), www.migrationpolicy.org/news/blue-card-redux-european-commission-plan-recast-work-permit-highly-skilled-holds-question-marks.
- 11 Refers to students in tertiary education (i.e., enrolled at a program that grants an academic associate's degree or higher). See OECD, *Education at a Glance 2015, OECD Indicators*, Chapter C (Paris: OECD Publishing, 2015), http://download.ei-ie.org/Docs/WebDepot/EaG2015_EN.pdf.
- 12 Batalova and Fix with Creticos, *Uneven Progress*; Amanda Bergson-Shilcock and James Witte, *Steps to Success: Integrating Immigrant Professionals in the U.S.* (New York: World Education Services, 2015), <http://knowledge.wes.org/Report-Steps-to-Success-Integrating-Immigrant-Professionals-in-the-US.html>; Leslyanne Hawthorne, *Recognizing Foreign Qualifications: Emerging Global Trends* (Washington, DC: MPI, 2013), www.migrationpolicy.org/research/recognizing-foreign-qualifications-emerging-global-trends.



data show that the United States is not alone in facing this challenge. In most Organization for Economic Cooperation and Development (OECD) countries skilled foreigners were not only less likely to be employed than similar natives, but also nearly twice as likely to work in low-skilled jobs.¹³

Immigrant skill underutilization occurs for a number of reasons. Finding a foothold in the U.S. economy is challenging because immigrants often lack local language skills, are unfamiliar with the labor market and hiring practices in a new culture, or do not have professional networks.¹⁴ Due to differences in international education and training curricula and standards, gaps between what immigrants know and can do and what is expected, often limit access to employment and mobility. Institutional barriers such as nonrecognition of foreign-acquired academic and professional qualifications by licensing bodies, discounting of foreign work experience by employers, lack of educational programs to “bridge” skills deficits, and a shortage of programs teaching professional and business English make it difficult, time-consuming, and costly for immigrants to gain skills needed to succeed in the U.S. professional labor market.¹⁵

Immigrant skill underutilization occurs for a number of reasons.

Brain waste carries a range of costs for immigrants and their families, with long-term implications for immigrant integration. First and foremost, skills and education degrade over time if not put to productive use.¹⁶ Adequate employment makes it far more likely that immigrants will earn family-sustaining wages, reducing poverty and its transmission to the next generation. Access to higher-skilled jobs also makes it more likely that immigrants will upgrade their skills through work-related training, further accelerating their mobility and increasing their productivity.¹⁷

Skill underutilization also imposes costs on the economy. Workers employed below their skill level and at lower wages are less productive and generate lower levels of output and demand for goods and services.¹⁸ Underemployment and the reduced productivity and earnings to which it gives rise also have implications for fiscal health as tax revenues at federal, state, and local levels are reduced, and use of public benefits increases. Finally, faster labor force incorporation may make the country more attractive to global talent, increasing national productivity.

13 OECD and European Commission, “Matching Economic Migration with Labour Market Needs.”

14 Jeanne Batalova and Michael Fix, *Through an Immigrant Lens: PIAAC Assessment of the Competencies of Adults in the United States* (Washington, DC: MPI, 2015), www.migrationpolicy.org/research/through-immigrant-lens-piaac-assessment-competencies-adults-united-states; Sara Bonfati and Theodora Xenogiani, “Migrants’ Skills: Use, Mismatch and Labour Market Outcomes—A First Exploration of the Survey of Adult Skills (PIAAC),” in *Matching Economic Migration with Labour Market Needs*, eds. OECD and European Commission (Paris: OECD Publishing, 2014).

15 Madeleine Sumption, *Tackling Brain Waste: Strategies to Improve the Recognition of Immigrants’ Foreign Qualifications* (Washington, DC: MPI, 2013), <http://migrationpolicy.org/research/tackling-brain-waste-strategies-improve-recognition-immigrants%E2%80%99-foreign-qualifications>; Jeffrey G. Reitz, “Immigrant Skill Utilization in the Canadian Labour Market: Implications of Human Capital Research,” *Journal of International Migration and Integration* 2, no. 3 (2001): 347-78; International Labor Organization (ILO), *The Contribution of Labour Mobility to Economic Growth*, Joint paper for G20 Labour and Employment Ministers’ Meeting (Ankara, Turkey: ILO, OECD, and World Bank, 2015), www.ilo.org/wcmsp5/groups/public/-/dgreports/-/dcomm/-/publ/documents/publication/wcms_398078.pdf.

16 Neeta P. Fogg and Paul E. Harrington, *Labor Market Underutilization Problems among College-Educated Immigrants in the United States* (Philadelphia: Center for Labor Markets and Policy, Drexel University, 2012), http://lincs.ed.gov/publications/pdf/Immigrant_Unemployment_Problems_Report.pdf; Demetrios G. Papademetriou, *Migration’s Local Dividends: How Cities and Regions Can Make the Most of Immigration* (Washington, DC: MPI, 2014), <http://migrationpolicy.org/research/migrations-local-dividends-how-cities-and-regions-can-make-most-immigration-transatlantic>.

17 Bonfati and Xenogiani, “Migrants’ Skills.”

18 Jeffrey G. Reitz, Josh Curtis, and Jennifer Elrick, “Immigrant Skill Underutilization: Trends and Policy Issues,” *Journal of International Migration and Integration* 15, no. 1 (2014): 1-26.



It is important to place the discussion of economic costs related to underemployment in the context of the broader impact that skilled immigrants have on the U.S. economy. According to a recent National Academies of Sciences report,¹⁹ which summarized the empirical research on economic and fiscal consequences of immigration to the United States in recent decades, skilled immigration is a valuable asset because it increases the education level of the U.S. workforce and bolsters U.S. capacity for “innovation, entrepreneurship, and technological change.” The report concludes that because skilled immigrants often have complementary skills to those of native workers, their entry in the U.S. labor market has a positive impact on the wages and employment opportunities of both high- and low-skilled U.S. workers, while at the same time enabling employers to tap into a greater pool of highly qualified workers. Finally, immigrants who are able to put their education and skills to full use have higher disposable incomes to spend and invest, and pay more in taxes.

From this perspective, it is only sensible to improve skilled immigrants’ access to the job market, reduce brain waste, and recoup most of the lost earnings associated with brain waste by removing barriers to their employment at their skill levels.

Research Questions and Report Organization

Except for a few research studies,²⁰ limited attention has been paid to the causes and costs of skill underutilization among college-educated immigrants in the United States. To fill this gap this report uses pooled 2009-13 American Community Survey (ACS) data from the U.S. Census Bureau,²¹ to address three important research questions:

- 1) How many immigrants with university degrees are either in low-skilled jobs or unemployed in the United States?
- 2) What are some of the factors that appear to be tied to this skill underutilization?
- 3) What is the economic cost (i.e., the forgone earnings and associated taxes) of immigrant low-skilled employment?

Unless stated otherwise, the report focuses on the labor market experiences of (a) immigrants who are *foreign-educated* college graduates and (b) immigrants who are *U.S.-educated* college graduates. The report also examines skill underutilization among *U.S.-born* college graduates for comparison purposes.

The report is organized in five parts. Section II provides estimates of the number and share of highly skilled immigrants who are out of the labor force, are unemployed, or who work in low-skilled jobs in the United States. Section III discusses factors linked to the risk of brain waste among immigrants, including place of education, English proficiency, race and ethnicity, and legal status. Section IV analyzes the impact of these factors on low-skilled employment independent of each other. Section V estimates the amount of earnings highly skilled immigrants lose when they work in low-skilled jobs. (The analysis does not include

19 Francine D. Blau and Christopher Mackie, eds., *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.

20 Batalova and Fix with Creticos, *Uneven Progress*; Neeta P. Fogg and Paul E. Harrington, *Mal-Employment Problems Among College-Educated Immigrants in the United States* (Philadelphia: Center for Labor Markets and Policy, Drexel University, 2012), http://lincs.ed.gov/publications/pdf/4_Mal-employment-paper.pdf. See also Illana Akresh, “Occupational Trajectories of Legal U.S. Immigrants: Downgrading and Recovery,” *Population and Development Review* 34, no. 3 (2008): 435-56; Aaditya Mattoo, Ileana Cristina Neagu, and Çağlar Özden, “Brain Waste? Educated Immigrants in the U.S. Labor Market,” *Journal of Development Economics* 87, no. 2 (2008): 255-69.

21 The ACS is an annual, nationally representative survey of approximately 3 million households conducted by the U.S. Census Bureau. All estimates in this report refer to civilian adults ages 25 and older, and are based on analysis of Census Bureau pooled 2009-13 ACS data unless otherwise stated. The data were pooled to increase the precision of the estimates. James Bachmeier at Temple University, in consultation with Jennifer Van Hook at The Pennsylvania State University and researchers at MPI, developed techniques to link ACS data to the Census Bureau’s 2008 Survey of Income and Program Participation (SIPP) to allow for estimates by legal status. The 2009-13 data were the most recent at the time of the analysis.



losses borne by unemployed college-educated immigrants.) The section further estimates the federal, state, and local taxes associated with forgone earnings. These estimates of forgone taxes were developed by the Institute on Taxation and Economic Policy (ITEP). Section VI estimates forgone earnings and taxes for seven study states: California, Florida, Michigan, New York, Ohio, Texas, and Washington. Section VII concludes the report, highlighting international and U.S. practices and initiatives that policymakers could consider.

II. Labor Market Outcomes for the College Educated

Approximately 60 million adults in the United States ages 25 and older had a college degree in the 2009-13 period; close to 10 million (16 percent) were foreign born. More than half of these college-educated immigrants (56 percent or 5.5 million) obtained their education abroad. How do these immigrants fare in the U.S. labor market? To answer this question the report examines three labor market outcomes for the high-skilled: *attachment to the labor force, unemployment, and employment in low-skilled jobs.*

A. Attachment to the Labor Force

There were 45.6 million college graduates in the U.S. labor force, 7.6 million of whom were foreign born, according to 2009-13 Census Bureau data. Roughly equal shares (22-24 percent) of natives and immigrants with at least a four-year college degree were not in the labor force—that is to say they were not employed and were not looking for a job (see Table 1). Regardless of nativity or place of education, women were more likely to be out of the labor force, with the highest shares experienced by immigrants educated abroad (36 percent), followed by those born in the United States (26 percent), and then by U.S.-educated immigrant women (22 percent).

There were 45.6 million college graduates in the U.S. labor force, 7.6 million of whom were foreign born, according to 2009-13 Census Bureau data.

Studies by Fogg and Harrington²² using the 2003 National Survey of College Graduates found that low rates of labor force participation among college-educated immigrant women are driven by those who were married and those with children, in part reflecting cultural differences regarding family-work responsibilities and the comparatively limited availability of child care in the United States.²³ Lower participation rates may also owe to the fact that women are more likely to come to the United States as dependents of temporary skilled foreign workers and to be excluded from work due to visa requirements. U.S.-educated immigrant men were least likely to be out of the labor force: Just 10 percent reported being out of the labor market versus 18 percent of foreign-educated immigrant and 20 percent of U.S.-born counterparts (see Table 1).

²² Fogg and Harrington, *Labor Market Underutilization Problems*.

²³ Jason Furman, "The Truth about American Unemployment," *Foreign Affairs*, July/August (2016): 127-38.



Table 1. Employment and Unemployment Status of College-Educated Adults by Nativity, Place of Education, and Gender, 2009-13

| | Immigrants | U.S. Born | Foreign-Educated Immigrants | | U.S.-Educated Immigrants | | U.S. Born | |
|---|------------------|-------------------|-----------------------------|------------------|--------------------------|------------------|-------------------|-------------------|
| | | | Men | Women | Men | Women | Men | Women |
| Total population | 9,779,600 | 49,617,400 | 2,753,100 | 2,703,200 | 2,070,500 | 2,252,800 | 23,907,200 | 25,710,200 |
| Percent out of labor force | 22 | 24 | 18 | 36 | 10 | 22 | 20 | 26 |
| In the labor force | 7,618,000 | 37,935,700 | 2,270,500 | 1,721,800 | 1,864,100 | 1,761,600 | 19,029,000 | 18,906,600 |
| <i>Percent of the labor force</i> | | | | | | | | |
| Unemployed | 6 | 4 | 5 | 7 | 5 | 6 | 4 | 4 |
| Employed | 94 | 96 | 95 | 93 | 95 | 94 | 96 | 96 |
| High-skilled | 57 | 62 | 60 | 46 | 64 | 57 | 64 | 61 |
| Middle-skilled | 18 | 19 | 13 | 23 | 15 | 22 | 17 | 22 |
| Low-skilled | 19 | 14 | 21 | 24 | 16 | 15 | 15 | 13 |
| Brain Waste: Unemployed or in low-skilled jobs | | | | | | | | |
| Number | 1,918,100 | 6,974,800 | 604,600 | 547,600 | 394,400 | 371,400 | 3,687,300 | 3,287,500 |
| Percent of the labor force | 25 | 18 | 27 | 32 | 21 | 21 | 19 | 17 |

Source: Migration Policy Institute (MPI) analysis of U.S. Census Bureau data from the pooled 2009-13 American Community Survey (ACS) and 2008 Survey of Income and Program Participation (SIPP), with legal status assignments by James Bachmeier of Temple University and Jennifer Van Hook of The Pennsylvania State University, Population Research Institute.

B. Unemployment

U.S. and international research²⁴ shows that higher levels of educational attainment improve employment prospects regardless of nativity. The analysis here finds that unemployment was strikingly low among the college educated regardless of nativity in the 2009-13 period: 6 percent of immigrants and 4 percent of the U.S. born reported being out of work and looking for employment in the week prior to the ACS (see Table 1).

C. Employment in Low-Skilled Jobs

While access to jobs is an important indicator of economic integration, the kind of employment immigrants are able to obtain provides a fuller picture of the use of their human capital. For the most part, those with a college education were able to find either full- or part-time jobs; many, however, found employment in low-skilled jobs needing *substantially* lower educational levels. About 19 percent of college graduates who are foreign born and 14 percent of those who are U.S. born were employed in low-skilled jobs, such as cashiers, cooks, and construction workers.

²⁴ OECD and European Union, *Indicators of Immigrant Integration 2015: Settling In* (Paris: OECD Publishing, 2015), www.oecd.org/publications/indicators-of-immigrant-integration-2015-settling-in-9789264234024-en.htm.



Taken together with those who were unemployed, more than 1.9 million immigrants and close to 7 million U.S.-born college graduates were either employed in low-skilled jobs or seeking employment (see Table 1). Immigrants were more likely to fall into those categories (25 percent) than natives (18 percent).

III. Factors Linked to Skill Underutilization

What accounts for brain waste in the United States? This section discusses the most salient factors and their relative contribution to skill underutilization of workers engaged in the U.S. labor force.

A. Place of Education

One key factor associated with brain waste is whether immigrants acquired their university degree and work experience in the host country or abroad.²⁵ Fifty-two percent of the 7.6 million college-educated immigrants in the U.S. labor force in the 2009-13 period obtained their education abroad; many are from non-English speaking countries with educational and workforce training systems different than those in the United States. There is a penalty attached to foreign-earned degrees: Immigrants educated abroad accounted for 60 percent (or 1.2 million) of the 1.9 million foreign born who were either underemployed or unemployed. With 29 percent of foreign-educated immigrants experiencing brain waste, their skill underutilization rate was higher than for their U.S.-educated immigrant counterparts (21 percent) or U.S. natives (18 percent). Foreign-educated immigrant women were more likely to experience brain waste than men: 32 percent versus 27 percent. There are no gender differences among U.S.-educated immigrants (see Figure 1).

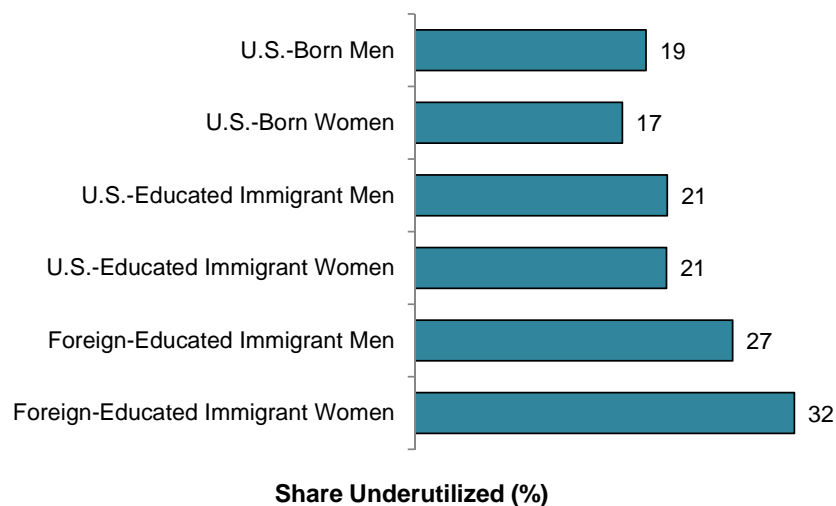
One key factor associated with brain waste is whether immigrants acquired their university degree and work experience in the host country or abroad.

Differences in labor market experiences between U.S.- and foreign-educated immigrants may be explained by a number of factors, including real and perceived differences in the quality of domestic and foreign education; degree of access to professional networks; and the ease or difficulty that immigrant professionals face in getting their foreign qualifications recognized by U.S. employers, professional licensing bodies, educational institutions, and state and local governments.

25 Rachel Friedberg, "You Can't Take It with You? Immigrant Assimilation and the Portability of Human Capital," *Journal of Labor Economics* 18, no. 2 (2000): 221-46; Noah Lewin-Epstein, Moshe Semyonov, and Irena Kogan, "Institutional Structure and Immigrant Integration: A Comparative Study of Immigrants' Labor Market Attainment in Canada and Israel," *International Migration Review* 37, no. 2 (2003): 389-420; Bergson-Shilcock and Witte, *Steps to Success*.



Figure 1. Underemployment and Unemployment of College-Educated Adults in Labor Force, by Nativity, Place of Education, and Gender (%), 2009-13



Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

B. English Proficiency

Fluency and literacy in the host-country language are strongly related to immigrant labor market success.²⁶ Most of the 7.6 million college-educated immigrants were English proficient; just 6 percent had very low English proficiency and another 18 percent had medium levels of English proficiency.²⁷ At the same time, both foreign- and U.S.-educated immigrants with very low levels of English proficiency were three times more likely to experience brain waste as those who were fully proficient (see Figure 2). A study released by World Education Services and IMPRINT, a coalition of nonprofits that helps immigrants integrate into the U.S. labor market, similarly found that immigrants with stronger English skills were more likely to use at least some of their higher education credentials in the workplace.²⁸

Most of the 7.6 million college-educated immigrants were English proficient.

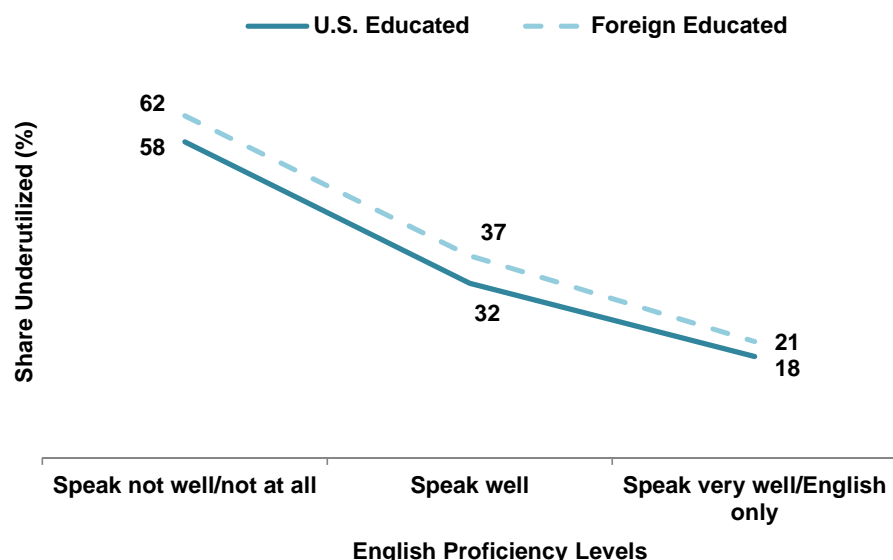
26 OECD and European Union, *Indicators of Immigrant Integration*; Andrew Clarke and Mikal Skuterud, “Immigrant Skill Selection and Utilization: A Comparative Analysis of Australia, Canada, and the United States” (Working Paper no. 1404, University of Waterloo, Department of Economics, Waterloo, Ontario, revised July 2014), https://uwaterloo.ca/economics/sites/ca.economics/files/uploads/files/clarke_skuterud_july2014_2.pdf; Laura Guerrero and Mitchell Rothstein, “Antecedents of Underemployment: Job Search of Skilled Immigrants in Canada,” *Applied Psychology: An International Review* 61, no. 2 (2012): 323-46.

27 The ACS includes a question asking respondents to self-report their speaking English proficiency as “not at all,” “not well,” “well,” “very well,” or “English only.” In this report, persons who reported speaking English “not well” or “not at all” are defined as persons with very low levels of English proficiency. Persons who speak only English or who reported speaking English “very well” are considered fully proficient in English. People who reported speaking English “well” are defined as those with a medium level of English proficiency.

28 Bergson-Shilcock and Witte, *Steps to Success*.



Figure 2. Underemployment and Unemployment of College-Educated Immigrants in Labor Force, by Place of Education and English Proficiency (%), 2009-13



Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

As shown in Figure 2, those who reported speaking English “well” fell between the two ends of the spectrum. Earlier MPI research shows that immigrants with this medium level of English proficiency differ from those with very low English skills in terms of their English literacy and numeracy skills,²⁹ and thus will have different educational and training needs. This finding highlights the need to take into account for funding and instructional purposes the diverse characteristics of adults who are collectively referred to as being Limited English Proficient (LEP).

C. Legal Status/Citizenship

This analysis finds that 57 percent of all college-educated immigrants were naturalized U.S. citizens, 24 percent were legal permanent residents (LPRs), and 8 percent were on temporary visas, while the remaining 11 percent were unauthorized. It would be logical to think that the skill underutilization of many immigrants owes to the fact that they might be unauthorized and hence have less access to the formal labor market. Using innovative methods for assigning legal status,³⁰ this analysis estimates there were about 840,000 unauthorized college-educated workers.

Not surprisingly, unauthorized immigrants with foreign-earned college degrees were substantially more likely to be underemployed or unemployed than LPRs: 43 percent versus 33 percent. And LPRs in turn recorded higher levels of skill underutilization compared to foreign-educated naturalized U.S. citizens, whose rate was 27 percent (see Figure 3).

Regardless of place of education, naturalized U.S. citizens were less likely to be underutilized than their LPR counterparts. Several factors might explain this citizenship premium. Naturalized citizens typically have lived in the country longer and are likely to be more integrated. Further, citizens have greater access to public-sector jobs. In addition, employers may be less likely to discriminate against U.S.-citizen workers because U.S. citizenship clearly signals work authorization.³¹

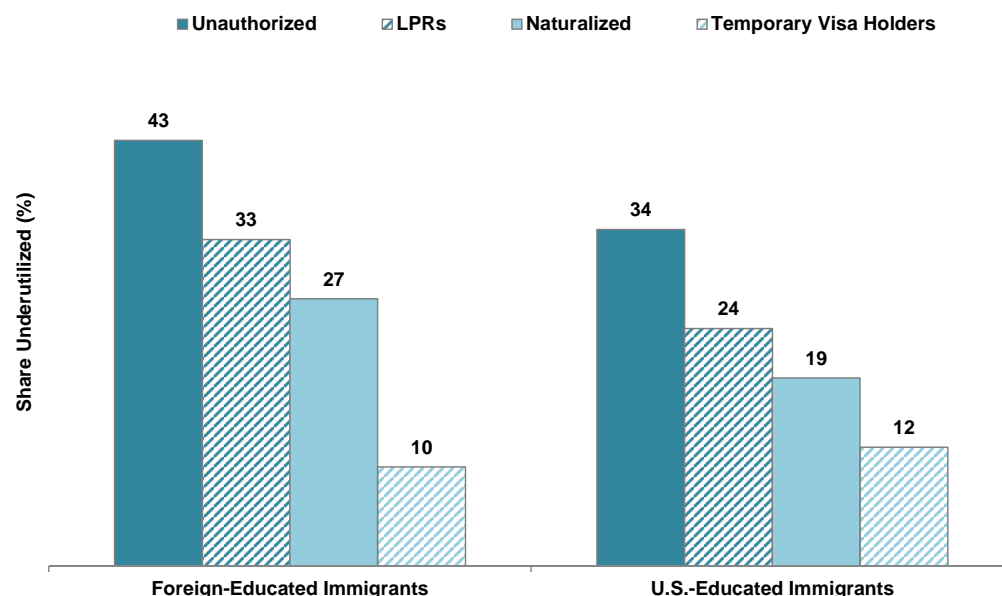
²⁹ Batalova and Fix, *Through an Immigrant Lens*.

³⁰ See Appendix A-2 for details on legal status assignment in the data.

³¹ 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.



Figure 3. Underemployment and Unemployment of College-Educated Immigrants in Labor Force, by Place of Education and Legal Status (%), 2009-13



LPRs = Legal permanent residents

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

Figure 3 also shows that immigrants on temporary visas were the least likely to be affected by brain waste (10-12 percent). Temporary visas include work visas such as specialty occupation H-1B visas or intracompany transfer L-1 visas—reserved for immigrants with college degrees and/or substantial management experience. To obtain an H-1B visa, foreign workers must have a sponsoring employer, and the position for which they are hired typically requires at least a bachelor’s degree.³² Thus, highly skilled temporary immigrants have a strong connection to a U.S. employer and are often employed in jobs that fit their qualifications.

D. Place of Origin and Race/Ethnicity

Asian immigrants made up half of those with university degrees, with India and China being the leading origin countries (see Table 2). In MPI’s 2008 examination of brain waste, the authors found a strong correlation between skill underutilization and country/region of origin, with high levels experienced by Latin American and African immigrants.³³ The current results are largely consistent with those earlier findings as Mexicans, Central Americans, Africans, and immigrants from the Caribbean, European countries outside the European Union, and the Philippines were more likely to experience skill underutilization than those from Canada, the European Union,³⁴ India, and China.

Among foreign-educated immigrants, 47 percent of Mexicans, 44 percent of those from the Caribbean, and more than 35 percent of Africans, South Americans, and Filipinos were underemployed or unemployed (see Table 2). The relatively high level of skill underutilization among Filipino immigrants is notable in part because of the large, well-organized institutional structures in the Philippines to train and place

32 Jeanne Batalova, “H-1B Temporary Skilled Worker Program,” *Migration Information Source*, October 7, 2010, www.migrationpolicy.org/article/h-1b-temporary-skilled-worker-program.

33 Batalova and Fix with Creticos, *Uneven Progress*.

34 Refers to 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).



skilled workers in overseas labor markets.³⁵ At the same time, a large share of the immigrant flow from the Philippines occurs via family reunification. As research from MPI and others demonstrates, family migrants typically face more challenges than labor migrants in adjusting to the new labor market.³⁶

Table 2. Distribution by Origin and Share of College-Educated Immigrants in Labor Force Who Were Underemployed or Unemployed, by Place of Education and Country/Region of Birth (%), 2009-13

| | Region/Country Share of Total Immigrants | | Share Underutilized (%) by Region/Country of Birth | |
|----------------------|--|------------------|--|---------------|
| | Foreign Educated | U.S. Educated | Foreign Educated | U.S. Educated |
| Total | 3,992,300 | 3,625,700 | 29 | 21 |
| <i>Percent</i> | 100 | 100 | | |
| East Asia | 16 | 16 | 20 | 16 |
| China | 9 | 10 | 16 | 14 |
| Japan/Asian Tigers* | 6 | 6 | 25 | 20 |
| Southeast Asia | 13 | 14 | 35 | 20 |
| Philippines | 10 | 6 | 35 | 21 |
| Southwest Asia | 20 | 17 | 23 | 16 |
| India | 15 | 12 | 18 | 13 |
| Middle East | 3 | 3 | 28 | 21 |
| Central America | 7 | 11 | 51 | 36 |
| Mexico | 5 | 7 | 47 | 36 |
| Caribbean | 5 | 9 | 44 | 24 |
| South America | 8 | 7 | 37 | 25 |
| Canada | 3 | 3 | 12 | 15 |
| Australia/Oceania | 1 | <1 | 16 | 18 |
| European Union/EEA** | 12 | 11 | 18 | 19 |
| Rest of Europe | 6 | 4 | 33 | 23 |
| Africa | 7 | 5 | 37 | 26 |

* Refers to Hong Kong, Taiwan, Singapore, and South Korea.

** Refers to 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).

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

Regardless of their origin, U.S.-educated immigrants generally had lower rates of skill underutilization than their foreign-educated counterparts. A few groups departed from this trend, however. This analysis finds low levels of brain waste among both foreign- and U.S.-educated immigrants from Canada, China, the European Union/European Economic Area, Australia, and India. Foreign-educated immigrants from these countries are more likely to be on temporary highly skilled worker visas (e.g., H-1B, L-1, and O-1).³⁷ Hence immigrants on these visas are more likely to work in jobs that utilize their education, skills,

35 Dovelyn Rannveig Mendoza, *Shortage amid Surplus: Emigration and Human Capital Development in the Philippines* (Washington, DC and Bangkok: MPI and International Organization for Migration, 2015), <http://migrationpolicy.org/research/shortage-amid-surplus-emigration-and-human-capital-development-philippines>.

36 Batalova and Fix with Creticos, *Uneven Progress*; OECD, *International Migration Outlook 2015*.

37 U.S. Citizenship and Immigration Services (USCIS), *Characteristics of H-1B Specialty Occupation Workers* (Washington, DC: USCIS, 2015), www.uscis.gov/sites/default/files/USCIS/Resources/Reports%20and%20Studies/H-1B/h-1B-characteristics-report-14.pdf.

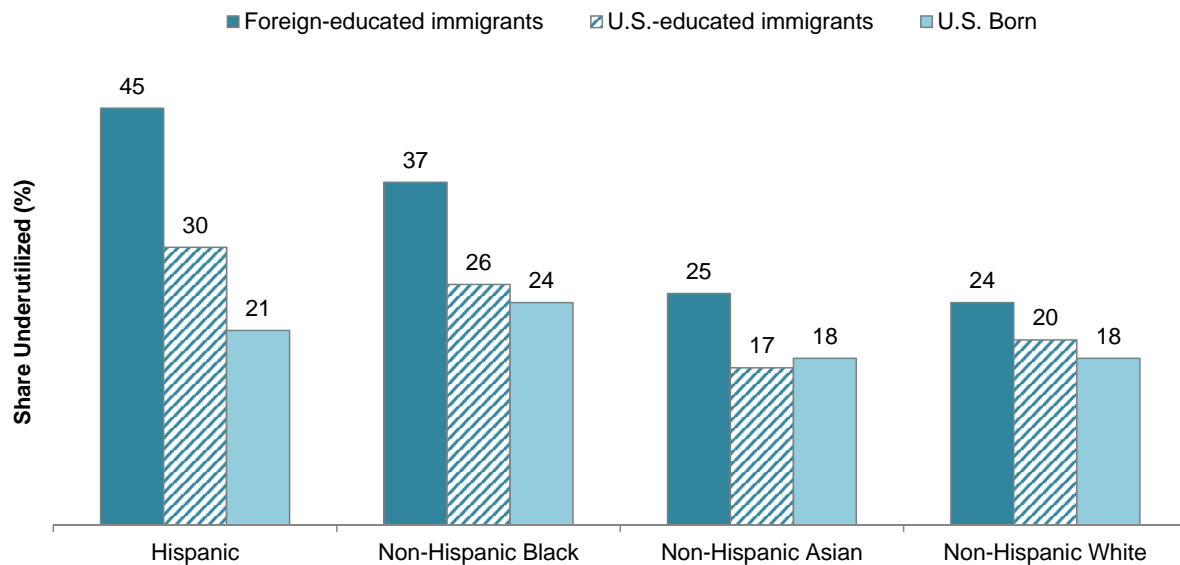


and abilities. By contrast, skill underutilization rates were notably high not just for Mexicans educated abroad (47 percent—the highest of all groups), but also for those who were U.S. educated (36 percent).

The data show that immigrants from Asia had low rates of underutilization. However, because Asians accounted for half of all 7.6 million college-educated immigrants, numerically speaking they made up a larger share than Latin Americans of the 1.9 million immigrants who worked in low-skilled jobs or were seeking employment (44 percent versus 33 percent, respectively).

The analysis of brain waste by race and ethnicity³⁸ (see Figure 4) reveals that underutilization rates among Hispanics were lower for U.S.-educated immigrants (30 percent) and the U.S. born (21 percent) than the foreign educated (45 percent). At the same time, U.S.-educated Black immigrants and natives had similar, high rates of skill underutilization.

Figure 4. Underemployment and Unemployment of College-Educated Adults in Labor Force, by Nativity, Place of Education, and Race/Ethnicity (%), 2009-13



Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

E. Time in the United States

Nearly 75 percent of U.S.-educated immigrants and 35 percent of those educated abroad had lived in the United States for 15 years or more. Foreign-educated immigrants were five times more likely to be recent arrivals (i.e., in the United States less than six years) than their U.S.-educated counterparts: 24 percent versus 5 percent, respectively.

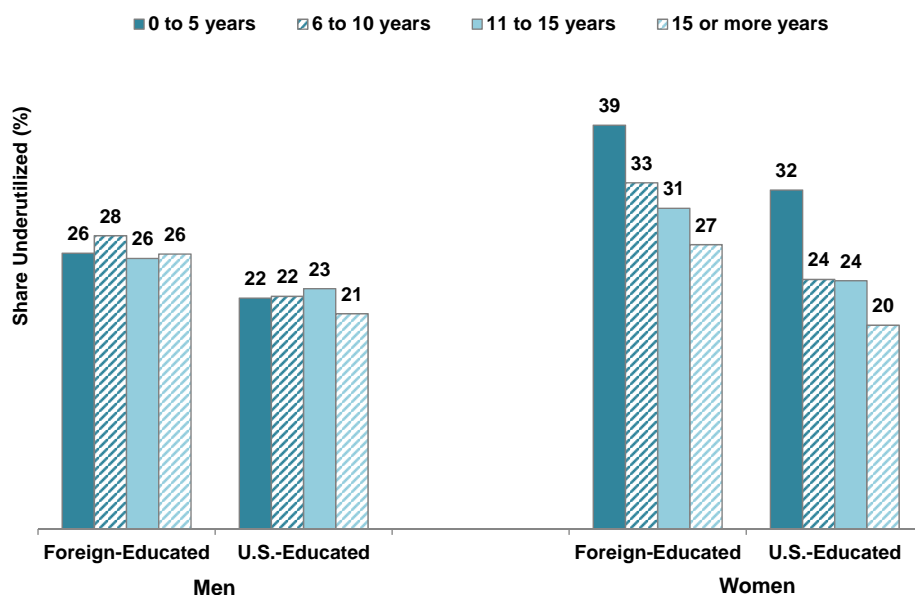
As with legal status, it would be logical to assume that time spent in the host country—and with it improved language skills, wider social networks, better job search skills, and work experience—is closely

³⁸ Among all college-educated immigrants, 45 percent were non-Hispanic Asians, 29 percent were non-Hispanic Whites, 18 percent were Hispanic, and 8 percent were non-Hispanic Blacks. The racial/ethnic composition of the U.S.-born college-educated adults was very different: 85 percent were non-Hispanic Whites, followed by much smaller shares of non-Hispanic Blacks (8 percent), 5 percent Hispanics, and 2 percent non-Hispanic Asians.



related to lower levels of brain waste.³⁹ However, the analysis finds that time in the United States does not substantially reduce the skill underutilization of either foreign- or U.S.-educated immigrant men. Among foreign-educated men, the share who were underutilized was roughly similar for recent arrivals and long-term immigrants (see Figure 5).

Figure 5. Underemployment and Unemployment of College-Educated Immigrants in Labor Force, by Place of Education, Gender, and Time in the United States (%), 2009-13



Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

In contrast, time in the United States was directly correlated with lower skill underutilization for foreign-educated immigrant women: While 39 percent of recently arrived women were underemployed or unemployed, the share dropped to 27 percent among long-term residents—a change that may owe to shifting social norms within immigrant families as well as a need for higher household earnings.⁴⁰

F. Level of Educational Degree

The analysis shows that the majority of college-educated immigrants and natives (57 percent and 64 percent, respectively) held a bachelor-level degree. Fifteen percent of immigrants and 11 percent of U.S.-born adults had a PhD or professional degree, such as a law or medical degree; the rest were MA-degree holders. Like other studies,⁴¹ this report finds that skill underutilization falls sharply with additional degrees. A significant share of the foreign educated whose higher education ended with a bachelor’s degree was either underemployed or unemployed: 39 percent of men and 40 percent of women. Adults with a bachelor’s degree were two to three times more likely to be underutilized compared to those with a doctorate or professional degree—regardless of nativity or place of education. An advanced degree appears to increase opportunities as it provides more specialized, and thus more transferrable, knowledge, as well as expanded social networks.

39 Mary C. Waters and Marisa Gerstein Pineau, eds., *The Integration of Immigrants into American Society* (Washington, DC: National Academies of Sciences, Engineering, and Medicine, 2015), www.nap.edu/catalog/21746/the-integration-of-immigrants-into-american-society; Ryan Haley and Sarinda Taengnoi, “The Skill Transferability of High-Skilled U.S. Immigrants,” *Applied Economics Letters* 18, no. 7 (2011): 633-36; Guerrero and Rothstein, “Antecedents of Underemployment.”

40 Waters and Pineau, *The Integration of Immigrants*.

41 Fogg and Harrington, *Mal-Employment Problems*.



G. Degree Field

Studies find that degree field plays an important role in labor market outcomes—both in terms of finding a job and income.⁴² These results have variously been attributed to the perceived value of skills and knowledge associated with degrees and relative demand for differing degree holders.⁴³

This analysis examined the top 12 degree fields at the undergraduate level and their relationship to skill underutilization of college-educated adults.⁴⁴ The selected degrees accounted for 95 percent of college-educated immigrants and 92 percent of U.S.-born college graduates. Business was the most popular degree among immigrants at the undergraduate level (21 percent of the total), followed by engineering (18 percent), social sciences (12 percent), and health and computer sciences (8 percent each). Among the U.S. born, business was also the top degree field (22 percent), followed by social sciences (17 percent), education (13 percent), and engineering and health (7 percent each).

Immigrants experienced higher levels of brain waste across all degree fields with the exception of biological, computer, and physical sciences.

Regardless of nativity or place of education, the analysis shows that adults who earned a bachelor's degree in biological, computer, or physical sciences, as well as health were much less likely to be underemployed or unemployed than their counterparts with degrees in communications, business, fine arts, or humanities (see Figure 6).

Compared to the U.S. born, immigrants experienced higher levels of brain waste across all degree fields with the exception of biological, computer, and physical sciences. The gaps by nativity were widest for education, business, social sciences, and communications degrees, suggesting that these fields are particularly hard for immigrants to transfer to the U.S. labor market, in part because they are more likely to be context- and culture specific and require strong English language skills.⁴⁵

42 Brad Hershbein and Melissa Kearney, *Major Decisions: What Graduates Earn Over Their Lifetimes* (Washington, DC: Brookings Institution, the Hamilton Project, 2014), www.hamiltonproject.org/papers/major_decisions_what_graduates_earn_over_their_lifetimes; Claire Cain Miller, "A College Major Matters Even More in a Recession," *New York Times*, June 20, 2014, www.nytimes.com/2014/06/21/upshot/a-college-major-matters-even-more-in-a-recession.html?_r=3.

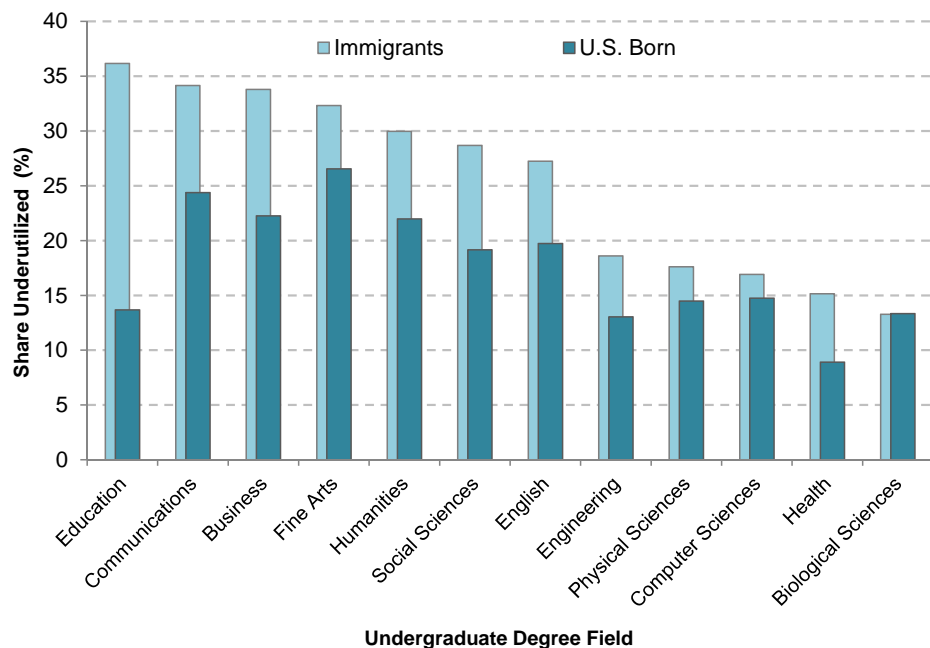
43 Joseph Altonji, Lisa Kahn, and Jamin Speer, "Trends in Earnings Differentials across College Majors and the Changing Task Composition of Jobs," *American Economic Review: Papers and Proceedings* 105, no. 5 (2014): 387-93.

44 The ACS does not provide information on the field of study or degree field at the highest educational level, only at the undergraduate level. However, analysis of ACS data on undergraduate field of study still represents a useful analytic approach because the majority of college-educated adults in the sample studied in this report have a bachelor's degree only. Results presented here are based on the degree majors with which they graduated at the bachelor's level for both BA and advanced degree holders.

45 Fogg and Harrington, *Mal-Employment Problems*.



Figure 6. Underemployment and Unemployment of College-Educated Adults in Labor Force, by Nativity and Undergraduate Degree Field (%), 2009-13



Notes: *Engineering* includes engineering and engineering technologies; social sciences include general social sciences, psychology, history, area studies, public affairs, and social work; *health* refers to medical and health sciences and services; *computer sciences* include general computer sciences, information sciences, mathematics and statistics, and communications technologies; *education* refers to education administration and teaching; *humanities* include liberal arts, philosophy, religious studies, linguistics, and foreign languages; *English* refers to English language, literature, and composition; *biological sciences* refer to biology and life sciences.

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

IV. What Are the Critical Determinants of Low-Skilled Employment among Immigrants?

While the prior section examined some of the individual sociodemographic and individual characteristics that play a significant role in skill underutilization more broadly, this next section seeks to answer the extent to which each of these characteristics is responsible for low-skilled employment. (Note: In contrast to the previous section, the estimates below do not include college-educated persons who were unemployed, only those in low-skilled jobs, a population numbering almost 1.5 million). To develop these estimates, the authors employ logistic regressions to test the relative—and independent—contribution⁴⁶ of English proficiency, race/ethnicity, degree level, age at arrival, and legal/citizenship status to the odds of low-skilled employment for immigrant workers.⁴⁷ Since the experiences of men and women in the labor market diverge, the analyses of low-skilled employment probabilities are carried out separately by gender (see full regression results in Appendix, Table A-3).

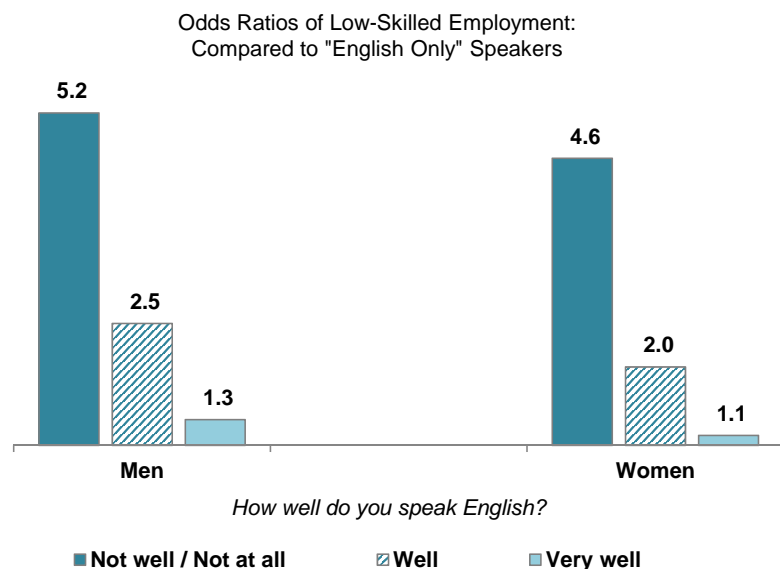
The most striking result from the logistic regression is the effect that limited English proficiency has on the risk of low-skilled employment (see Figure 7).

⁴⁶ Multivariate regressions permit examination of the independent effect of one variable at a time, assuming that groups are similar on other characteristics.

⁴⁷ Research shows that access to jobs for immigrants depends not only on the level of degree but also on language skills, age at arrival, and legal status. The report focuses here only on immigrants to permit examination of immigrant-specific characteristics. The sample was further restricted to employed persons only.



Figure 7. Impact of English Proficiency Levels on Net Probability of Low-Skilled Employment for Immigrants, 2009-13



Notes: To interpret the odds ratios of low-skilled employment (i.e., likelihood of working in low-skilled job of one group compared to the reference group), one needs to compare the coefficient to 1: The closer the odds ratios to 1, the smaller the group differences. To illustrate: An odds ratio of 1.3 means immigrants speaking English “very well” were 30 percent more likely to be in a low-skilled job than English-only speakers, after controlling for other factors. An odds ratio of 5.2 means 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.

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

Immigrant men and women with very low English proficiency (those who reported speaking English “not well” or “not at all”) were approximately five times more likely to be in low-skilled jobs than immigrants who speak English only, net of other factors in the model. Immigrants with medium levels of English proficiency (those who speak English “well”) were also disadvantaged: Their odds of low-skilled employment were twice as high as English-only speakers. This U.S. finding mirrors that of researchers in other OECD countries:⁴⁸ Proficiency in the host-country language is consistently found to be the single most important skill immigrants need to succeed in the labor market.

Place of education also exhibits a strong, independent effect. Even when controlling for language skills and other factors, this analysis finds that those who came to the United States after age 25 (the definition used in the report for “foreign-educated” immigrants), were much more likely to be employed in low-skilled jobs than those who arrived before age 12 (the closest proxy to the U.S. born) (see full regression results in Appendix, Table A-3).

With respect to U.S. citizenship/legal status, low-skilled employment tends to be much more common among the unauthorized and LPRs than among naturalized citizens and temporary visa holders. After controlling for other related factors, LPR men were 11 percent more likely to be in low-skilled jobs than those who were naturalized U.S. citizens. Notably, the citizenship premium was higher for women: LPRs were 43 percent more likely than naturalized U.S. citizens to be in low-skilled jobs, other key factors being equal.

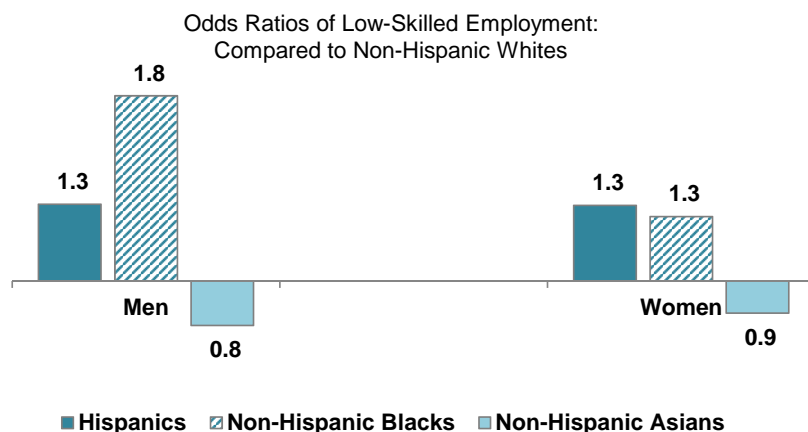
Earlier MPI work showed that college-educated immigrants from Africa and Latin America had higher levels of brain waste than those from Europe. The logistic regression analyses confirm the salience of race

48 OECD, “How Can Migrants’ Skills Be Put to Use?” *Migration Policy Debates*, OECD no. 3, December 2014, www.oecd.org/els/mig/migration-policy-debates-3.pdf; see also Bergson-Shilcock and Witte, *Steps to Success*.



and ethnicity (see Figure 8): All things being equal, Hispanic and Black immigrants were more likely to be in low-skilled jobs than their White counterparts, while Asians were less likely. For Black immigrants, the negative effect of race was much higher for men than for women.

Figure 8. Impact of Race/Ethnicity on Net Probability of Low-Skilled Employment for Immigrants, 2009-13



Notes: To interpret the odds ratios of low-skilled employment (i.e., likelihood of working in low-skilled job of one group compared to the reference group), one needs to compare the coefficient to 1: The closer the odds ratios to 1, the smaller the group differences. To illustrate: An odds ratio of 1.3 means Hispanic men and women were 30 percent more likely than non-Hispanic Whites to be in a low-skilled job, after controlling for other factors.

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

Finally, as expected, additional levels of education reduce low-skilled employment. Immigrants with Ph.D./professional degrees were 80 percent less likely to work in low-skilled jobs compared to BA-degree holders, with similar effects for men and women.

V. Forgone Earnings and Taxes Related to Low-Skilled Employment of Immigrant Workers

This section examines the economic impact of low-skilled employment⁴⁹ on immigrants by addressing two questions:

- 1) How much less do immigrants earn because of their low-skilled employment (i.e., the amount of forgone earnings) when compared to immigrants with similar human capital and other characteristics who are “adequately employed” (i.e., working in middle- or high-skilled jobs)?
- 2) How much less do immigrants in low-skilled jobs pay in federal, state, and local taxes (i.e., the amount of forgone taxes) as a result of their lower earnings?

Appendix A-3 describes in more detail the approach used to estimate the extent of forgone earnings related to immigrants’ low-skilled employment, and Appendix A-4 does the same for forgone taxes.

⁴⁹ The analysis does *not* estimate the costs of unemployment or nonparticipation in the labor market.



A. Extent of Forgone Earnings

In brief, to estimate the economic costs associated with low-skilled employment for immigrant workers, this analysis compares average annual earnings of highly skilled immigrants working in low-skilled jobs to those of the adequately employed.⁵⁰ 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 Appendix Table A-1). On average, women earned less than men; the earnings differences by employment type were also smaller among women (\$32,000-\$35,000).

What contributes to these gaps? Clearly, low-skilled jobs such as those performed by janitors or cashiers pay lower wages than high- and middle-skilled jobs such as medical doctors or computer programmers—regardless of qualifications. Low-skilled employment might also be less stable throughout the year, which would decrease total annual earnings. Similar jobs in different states and industries are likely to have different pay levels. In addition, the gaps described above may reflect not only the earnings one might expect for a given job-skill type, but also characteristics that allowed workers to obtain that job. It would be expected that immigrants in high- and middle-skilled jobs are able to secure them, and hence earn substantially more, because they have higher levels of human capital, possess stronger English skills, have greater access to professional networks acquired during longer U.S. residence, as well as other favorable characteristics compared to immigrants in low-skilled jobs.

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

To account for these factors, the report controls for a variety of different demographic characteristics when estimating the cost of low-skilled employment of immigrant college graduates. The estimates in this section take into account the state where the immigrant is located, as well as age, race, level of English proficiency, and citizenship status, among other traits.⁵¹ Controlling for these variables ensures that the forgone wage estimates produced are less likely to be skewed by outside factors—such as the tendency of underemployed immigrants to lack citizenship status. The resulting analysis shows what an underemployed immigrant would be likely to earn in a high-skilled position, given his or her underlying demographic and human-capital characteristics and location.

To fully understand the financial costs of brain waste, the authors modeled two different estimates:

Estimate of Total Earnings Losses Due to Immigrant Low-Skilled Employment. First, the report quantifies the total amount of earnings estimated forgone by the 1.5 million highly skilled immigrants currently employed in low-skilled jobs.^{52 53}

50 The estimates exclude immigrants who are unemployed because they had no earnings.

51 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.

52 The models controlled for immigrant workers' 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.

53 This is lower than the 1.9 million figure cited in earlier sections for the total number of immigrant college graduates who experienced brain waste because the *unemployed* population is excluded from this analysis. For the purpose of this analysis persons who reported earnings losses as well as the top 1 percent of earners were also excluded.



The main finding: College-educated immigrants who were employed lost \$39.4 billion in annual wages due to low-skilled employment.^{54 55} To put this figure in context, all immigrant-led households in Virginia collectively earned \$36.5 billion in income in 2014. In Washington State, they earned \$30.9 billion.⁵⁶

Estimate of Earnings Losses if Immigrants Had the Same Level of Low-Skilled Employment as U.S.-Born College Graduates. Analyses of labor market inequality often compare the outcomes of their study populations against a “privileged” group that is thought to have more favorable outcomes and experience less job discrimination. One would expect that immigrants would be more likely than natives to be in low-skilled work because U.S.-born college graduates are typically native English speakers, their U.S. degrees and work experiences are immediately recognized, and they are U.S. citizens. One would also expect that despite these favorable characteristics some U.S.-born college graduates would also work in low-skilled jobs.

Thus, for the second estimate, this report considers that a certain degree of low-skilled employment among college graduates may be *natural* or expected in the economy. To account for that, the authors estimate the amount of additional wages immigrants could earn if they were underemployed at the same level as their native-born peers.⁵⁷ This model essentially shows the amount of forgone earnings immigrants could *make up* if they made strides towards closing the underemployment gap that exists between immigrants and natives today.

Assuming similar underemployment levels for highly skilled immigrants and U.S.-born college graduates (i.e., 16 percent for men and 14 percent for women),⁵⁸ immigrant college graduates could have closed that gap considerably, earning \$28.5 billion more per year.

The difference in the above two estimates of forgone earnings—about \$10.8 billion (i.e., \$39.4 billion minus \$28.5 billion)—represents losses *above* what might be considered a natural or expected rate of underemployment and is, thus, uniquely borne by highly skilled immigrants. Notably, most of this difference derives from the losses experienced by *foreign-educated* immigrants (\$4.8 billion for men and \$4.6 billion for women as shown in Appendix Table A-1, line 11), highlighting the fact that place of education and foreign credential recognition play a powerful role in immigrant labor market outcomes.

B. Extent of Forgone Taxes

For the purposes of this analysis, the authors estimated the scale of brain waste costs actually experienced by immigrants and their families. To estimate federal, state, and local taxes that would have been paid if immigrants had earned the \$39.4 billion in lost wages, ITEP researchers drew on the results of their analysis of the tax systems in 50 states and the District of Columbia. Using its sophisticated

54 This amount represents the sum of line 9 in Appendix Table A-1. The estimate was calculated based on average annual earnings over the 2009-13 period. All earnings figures from this period were inflated to 2013 dollars.

55 While the recent National Academies of Science report found that skilled immigrants often have complementary skills to those of native workers, it did highlight possible competition in some narrow fields. See Blau and Mackie, *The Economic and Fiscal Consequences of Immigration*. This may mean that when new immigrants are hired for high-skilled/high-paying jobs (and thus improve their earnings), domestic skilled workers may be displaced from such jobs or their earnings might decline. 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.

56 New American Economy, “Reports: The Contributions of New Americans,” accessed November 3, 2016, www.renewoureconomy.org/reports/.

57 These were calculated for a slightly different population (i.e., employed, earned at least \$1 in the year prior to the survey year, and excluding the top 1 percent of earners) as the one shown in Table 1. Hence, there might be small differences in the rates of low-skilled employment shown here versus Table 1.

58 This amount represents the sum of line 10 in Appendix Table A-1.



simulation model,⁵⁹ ITEP estimated the effective tax rates (ETR) for individual households based on the household's income quintile. The ITEP model produces separate ETRs reflecting the federal tax rates and the state/local tax rate a given household would pay. These respective ETRs⁶⁰ were applied to the incomes of households *with* and *without* forgone earnings, permitting estimation of the additional amount of federal or state and local taxes that would be paid by households with underemployed highly skilled immigrants if they were not experiencing brain waste.

The results show that immigrant households would have paid an additional \$10.2 billion in taxes each year—\$7.2 billion in federal taxes and \$3 billion in state/local taxes. (A full description of the methods and estimates is provided in Appendix A-4.) To put this figure in perspective, the \$10.2 billion in forgone federal taxes associated with brain waste is larger than the budget of the city of Los Angeles.⁶¹

The results show that immigrant households would have paid an additional \$10.2 billion in taxes each year.

C. Why These Estimates Can Be Viewed As Conservative

While substantial, these estimates of losses can be seen as modest, or conservative, for two reasons. First, because the analysis includes only immigrants and the U.S. born who were employed and had earnings of at least \$1, the estimates do not include lost earnings to the unemployed or those out of the labor force. A total of 36 percent of immigrant women with foreign degrees and 22 percent of foreign-born women with U.S. degrees were out of the labor force during the 2009-13 period examined, as were 18 percent of foreign-educated immigrant men and 10 percent of U.S.-educated men who were foreign born, as shown in Table 1.

The results can also be viewed as modest because the estimates of forgone earnings were based on a restrictive definition of low-skilled employment that is limited to college-educated adults working in jobs that require substantially lower levels of formal qualifications (i.e., a high school diploma or less) than these university-educated workers hold. The report estimates that nearly 1.5 million highly skilled immigrants worked in these low-skill and generally low-wage jobs and can be considered *severely* underemployed.

However, there was an additional group of college-educated immigrants (almost 1.4 million) who worked in jobs that required more than a high school but less than a four-year university degree for which they were likely to be overemployed. Examples of these jobs include dental hygienists, bookkeepers, teacher assistants, electricians, paralegals, and real estate agents. The highly skilled immigrants working in these jobs might be considered *moderately* underemployed.

59 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. Such a model employs large-scale national and state-level data from tax returns; population surveys; economic, consumption, and tax property data; government and economic projections; and other sources. 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.

60 Note that when income rises, the effective overall tax rate changes somewhat in federal tax calculations and goes down for the state/local tax calculations, as described by ITEP in the *Who Pays?* report.

61 City of Los Angeles, "Budget Summary, FY 2016-17," accessed November 19, 2016, <http://cao.lacity.org/budget/summary/2016-17BudgetSummaryBooklet.pdf>.



If, as other researchers have done,⁶² college-educated immigrants who fell into this moderately underemployed group *were included* in the definition of brain waste used in this report, the estimates of economic losses attributed to low-skilled employment would have been higher.

VI. State Results: Brain Waste and Forgone Earnings and Taxes

States differ in the strength of their economies, local labor market conditions, and the demographic and educational makeup of their workforces. And as a result, this report finds significant variation in immigrant underemployment—and hence forgone taxes—across states. The focus here is on seven states: four that are 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).⁶³ Together these states accounted for 57 percent of the 7.6 million college-educated immigrants and 38 percent of the 37.9 million U.S.-born college graduates in the labor force (see Table 3).⁶⁴

Table 3. Number of College-Educated Immigrants by State and State Share of National Total, 2009-13

| | Immigrants | | U.S. Born | |
|-----------------------|------------------|-----------------|-------------------|-----------------|
| | Number | State Share (%) | Number | State Share (%) |
| United States | 7,618,000 | 100.0 | 37,935,700 | 100.0 |
| California | 1,806,100 | 23.7 | 3,895,900 | 10.3 |
| New York | 878,400 | 11.5 | 2,588,000 | 6.8 |
| Florida | 608,200 | 8.0 | 1,823,600 | 4.8 |
| Texas | 594,500 | 7.8 | 2,714,900 | 7.2 |
| Washington | 178,500 | 2.3 | 898,400 | 2.4 |
| Michigan | 144,500 | 1.9 | 1,143,700 | 3.0 |
| Ohio | 117,200 | 1.5 | 1,388,400 | 3.7 |
| Total 7 states | 4,327,400 | 56.8 | 14,452,900 | 38.1 |

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

A. State Variations in Skill Underutilization

The states can be largely grouped in three clusters in terms of how their college-educated immigrants fared compared to the national average with regard to skill underutilization (see Figure 9). (Note: this subsection focuses on a broader term of *skill underutilization*, i.e., it examines the levels of both low-skilled employment and unemployment among college graduates. The following subsection will examine forgone earnings and taxes associated with immigrant low-skilled employment only.)

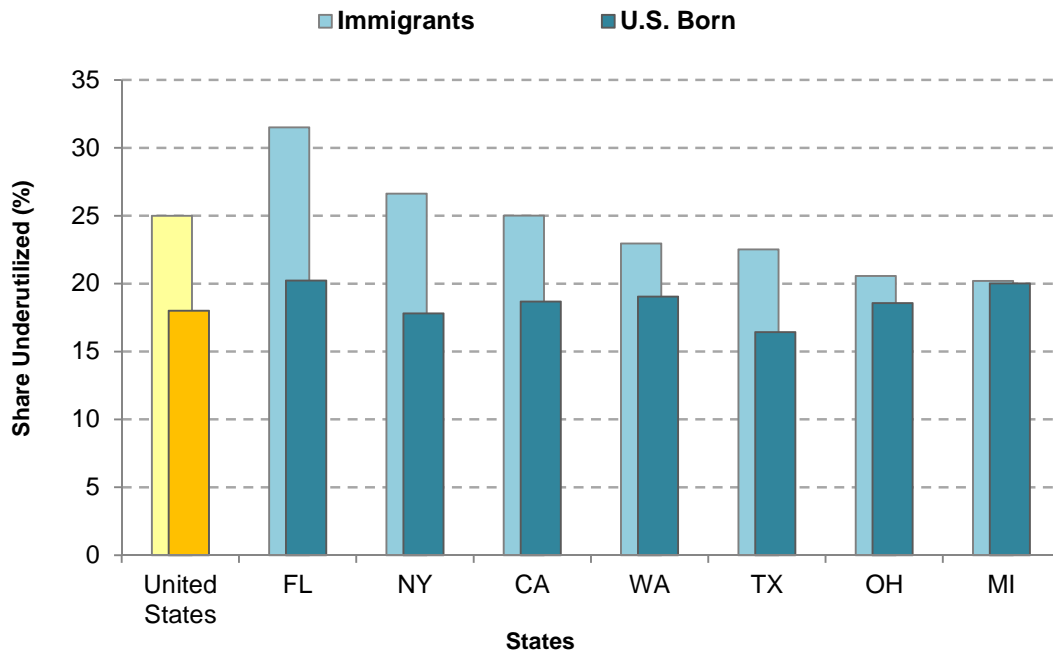
⁶² OECD and European Union, *Indicators of Immigrant Integration*.

⁶³ The study states varied in the share that immigrants represented of the state college-educated labor force: 32 percent in California, 25 percent in Florida and New York (each), about 17 percent in Texas and Washington, 11 percent in Michigan, and 8 percent in Ohio.

⁶⁴ See Appendix, Table A-4 for data on the state share of the total immigrant and U.S.-born populations, and the share unemployed by nativity in 15 states, including the study states. See individual fact sheets on the seven study states for detail on the composition and skill underutilization rates for college-educated foreign- and U.S.-born populations.



Figure 9. Underemployment and Unemployment of College-Educated Adults in Labor Force, by State and Nativity (%), 2009-13



Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

- **Highest immigrant skill underutilization experienced in Florida.** Immigrants in Florida had the highest levels of brain waste of the states studied (32 percent, compared to the 25 percent national average). These high rates may be partially explained by the fact that highly skilled immigrants in Florida were less likely to be proficient in English. Immigrant college graduates in Florida were nearly twice as likely as those nationwide to have very low English proficiency: 11 percent versus 6 percent. Florida immigrants were also somewhat less likely to hold advanced degrees and were more likely to be educated abroad. Florida stood out because it had a high share of college-educated Hispanics (48 percent versus 18 percent nationwide). Florida has also been a destination of most Cuban refugees to the United States, a population that has experienced comparatively high underutilization rates.⁶⁵ The share of Blacks among college-educated immigrants in Florida was higher (12 percent) than the country overall (8 percent). Nationwide, Hispanics and Blacks were significantly more likely to be either underemployed or unemployed than Whites or Asians, even when other factors were taken into account.
- **Brain waste levels in four states—New York, California, Washington, and Texas—were similar to the national rate.** Twenty-seven percent of college-educated immigrants in New York, 25 percent in California, and 23 percent in both Washington and Texas experienced brain waste, similar to the U.S. rate of 25 percent. The four states differed, though, in how immigrants fared compared to their U.S.-born counterparts, with the gap being widest in New York and narrowest in Washington State.
- **In Michigan and Ohio, two states with policies in place to aid high-skilled immigrant job placement, skill underutilization fell below the national average.** College-educated immigrants in Michigan (20 percent) and Ohio (21 percent) experienced lower skill underutilization than the national average. Further, their rates of brain waste were the same as those for the U.S. born. Even though immigrants in Michigan and Ohio were more likely to be educated abroad, they had

⁶⁵ Michael Fix, Kate Hooper, and Jie Zong, *Refugee Integration at the National and State Level in the United States: Is There a Lottery Effect?* (Washington, DC: MPI, forthcoming).



much stronger English skills (80 percent were fully English proficient), were more likely to be on temporary visas, and were more likely to hold advanced degrees than immigrants nationwide. In both states, Asians accounted for close to half of college-educated immigrants, followed by Whites (42 percent in Michigan and 35 percent in Ohio). There were also marked differences in educational attainment by nativity in both states: More than half (52-54 percent) of immigrants had advanced degrees versus 36 percent of U.S.-born college graduates. It should also be noted that policymakers in both states have also been leaders in efforts to help skilled immigrants integrate and find appropriate job placement.

B. Extent of Forgone Earnings and Taxes in the Study States

This section replicates the national-level estimates of forgone earnings and taxes for the study states. The focus, again, is on highly skilled immigrants who are adequately employed versus those in low-skilled jobs with similar human capital and other characteristics. Table 4 shows total losses due to low-skilled employment and the taxes associated with them by state. California, as might be expected due to the size of the affected population, accounted for \$9.4 billion in annual forgone earnings as a result of the low-skilled employment of immigrant college graduates—24 percent of total earnings lost nationally. Those forgone earnings would have generated \$700 million in state/local taxes—23 percent of taxes that would have been collected at the national level. The forgone earnings amounted to about \$5 billion in New York, \$3.6 billion in Florida, and \$2.5 billion in Texas (see Table 4). The seven study states accounted for 57 percent of the \$39.4 billion in forgone earnings and nearly 60 percent of the \$3 billion in lost state and local taxes.

Table 4. Forgone Earnings and Taxes by State, and State Share of Overall Totals, 2009-13

| | Total Forgone Earnings (\$billion) | | Total Forgone State/Local Taxes (\$million) | |
|-------------------------------|------------------------------------|-------------------------------|---|-------------------------------|
| | Estimate | State Share of U.S. Total (%) | Estimate | State Share of U.S. Total (%) |
| United States | 39.36 | 100.0 | 3,033.56 | 100.0 |
| California | 9.39 | 23.9 | 694.81 | 22.9 |
| Florida | 3.64 | 9.2 | 214.72 | 7.1 |
| Michigan | 0.51 | 1.3 | 48.56 | 1.6 |
| New York | 5.05 | 12.8 | 594.03 | 19.6 |
| Ohio | 0.51 | 1.3 | 52.97 | 1.7 |
| Texas | 2.50 | 6.4 | 167.45 | 5.5 |
| Washington | 0.83 | 2.1 | 74.86 | 2.5 |
| Total 7 states | 22.44 | 57.0 | 1,847.40 | 60.9 |
| Other 43 states and DC | 16.93 | 43.0 | 1,186.15 | 39.1 |

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook. Tax estimates are from Institute on Taxation and Economic Policy estimates based on the Institute's microsimulation model.



VII. Conclusions

While the principal focus of U.S. labor policy has been on developing human capital, this focus has largely overlooked the underutilization of that capital among the nation's immigrant and native populations alike. The result can be seen as a missed opportunity—one with high costs that are borne not just by immigrants and their families but by federal, state, and local economies in forgone tax receipts and consumer spending.

What is the scope of that brain waste and the scale of those costs? The analyses here find that one in four college-educated immigrants—1.9 million people—were either unemployed or working in low-skilled jobs. Low-skilled employment among highly skilled immigrants comes with a price tag: \$39.4 billion in annual lost earnings. And if this amount of earnings had not been forgone, immigrant households would have paid an additional \$10.2 billion in taxes—\$7.2 billion at the federal level and \$3 billion in state/local taxes.

In some ways the time is particularly ripe to address brain waste in the United States. In the first place there has been a pronounced, steady shift in the composition of new immigrants arriving to the United States, with recent arrivals more likely to be highly educated. Almost half (46 percent) of immigrant adults who entered the United States between 2011 and 2014 were college graduates—a sharp shift upward from the 33 percent among those who arrived before the 2007-09 recession.⁶⁶ Most entered with education and professional experience obtained abroad. While this increased education of recent immigrants should be welcome news to those who advocate for more skilled immigration,⁶⁷ their economic outcomes, as documented here, are not assured. At the same time, although some pockets of the country still have high unemployment, the nation's economy has strengthened following the recession, creating more openings for skilled workers.⁶⁸ Altered immigration flows and a strengthening economy have also been accompanied by expanding—if still modest—efforts to reduce skill underutilization among skilled immigrants.

The time is particularly ripe to address brain waste in the United States.

At the city level, local governments in Cincinnati, Detroit, Pittsburgh, and St. Louis, among others, have recognized that high-skilled immigrants are an underutilized asset and have supported efforts to attract skilled immigrants, foreign students, and immigrant entrepreneurs. Because these cities view their skilled newcomers as an important element of local economic development, job creation, and neighborhood revitalization, they have also invested in their labor market integration. St. Louis Mosaic Project's Professional Connector Program has set up more than 170 immigrant and native professionals with volunteer professionals who are well-established in a given field in an effort to improve employment opportunities for those who are new to the city's job market.⁶⁹

Among states, Illinois, Massachusetts, Michigan, New York, and Pennsylvania have adopted immigrant integration-oriented executive orders or established an Office/Council for New Americans focused on a range of policies and initiatives that promote immigrant economic mobility and civic participation. Importantly, they have identified immigrant credential recognition and development as policy priorities.

66 Authors' analysis of U.S. Census Bureau data from the 2010 and 2014 ACS and 1990 and 2000 decennial census.

67 Matthew J. Slaughter, *The Increasing Cost To American Companies Of Hiring Skilled Immigrant Workers* (white paper, ACAlliance, Washington, DC, March 2016), http://acalliance.org/wp-content/uploads/2016/03/ACA_Cost_of_Skilled_Workers_White_Paper_FINAL.pdf.

68 "Since peaking at 10 percent in October 2009, the U.S. unemployment rate has fallen by half and is now lower than it was in the years leading up to the economic crisis." See Furman, "The Truth about American Unemployment," 127.

69 For more information, see St. Louis Mosaic Project, "About Us," accessed August 10, 2016.



Additionally, California, Florida, Nebraska, Nevada, and New York have eased licensing restrictions for some unauthorized immigrant professionals.⁷⁰ New York, for example, plans to allow unauthorized immigrants eligible for the Deferred Action for Childhood Arrivals (DACA) program to obtain licenses in medicine and teaching in an effort to alleviate shortages of qualified workers with cultural and linguistic skills.⁷¹ Lastly, both Ohio and Michigan have created programs that aim to help international students trained in the states' universities find appropriate employment after graduation.⁷²

Nationwide, a number of intermediary organizations already operate to assist immigrant professionals restart their careers in health care and other fields. Among the most prominent are the network of Welcome Back Centers that help immigrant health-care professionals find employment and Upwardly Global, which helps recently arrived college-educated immigrants improve their employability skills and links them to employers.⁷³

Nationwide, a number of intermediary organizations already operate to assist immigrant professionals restart their careers.

The White House Task Force on New Americans, launched in 2014, has been charged with helping immigrants and refugees achieve social, linguistic, economic, and civic integration by coordinating the efforts of federal agencies that work with immigrants.⁷⁴ Foreign-trained professionals have been a central focus of that work.

Reauthorization of the federal *Workforce Innovation and Opportunity Act* (WIOA) in 2014 may open new opportunities for state and local providers to offer language and training to immigrant professionals. Notably, the law declares for the first time that professionals with foreign-earned degrees and credentials are eligible for adult education and language services.⁷⁵ Thus WIOA-supported programs may begin to take into account more fully the unique career, cultural, and language needs of at least some of the 800,000 underemployed college-educated immigrants who are Limited English Proficient (LEP).

70 Carolyn Thompson, "New York Lifts Some Licensing Restrictions for Some Immigrants," Associated Press, May 17, 2016, <http://bigstory.ap.org/article/fd63da99690a4b1f8c3792b95b7c477b/ny-lifts-licensing-restrictions-some-immigrants>.

71 The Deferred Action for Childhood Arrivals (DACA) program, created in 2012, provides a two-year grant of relief from deportation and eligibility for work authorization to qualified unauthorized immigrants brought to the United States as children. For more, see USCIS, "Consideration of Deferred Action for Childhood Arrivals (DACA)," updated October 14, 2016, www.uscis.gov/humanitarian/consideration-deferred-action-childhood-arrivals-daca.

72 See Ohio Global Reach to Engage Academic Talent, "About Us," accessed November 1, 2016, <https://ohio-great.us/#/about-ohio>; Global Talent Retention Initiative of Michigan, "What We Do," accessed October 5, 2016, www.migtri.org/about-gtri.

73 Launched in 2001, the Welcome Back Initiative and its centers help internationally trained health-care professionals restart their careers in the United States by providing orientation, counseling, and job support services. See Welcome Back Initiative, "International Health Worker Assistance Center," accessed August 10, 2016, www.welcomebackinitiative.org/. Since 1999, Upwardly Global has helped skilled immigrants expand their access to professional networks and find employment that matches their qualifications. Upwardly Global also educates employers about the availability of college-educated immigrants and their skills. See Upwardly Global, "About Us," accessed August 10, 2016, www.upwardlyglobal.org/about-upglo. Through its *E Pluribus Unum* Prizes awards program, MPI has recognized both Upwardly Global (2010) and the Welcome Back Initiative (2011) as exceptional initiatives that promote immigrant integration.

74 White House, "White House Task Force on New Americans," accessed August 10, 2016, www.whitehouse.gov/issues/immigration/new-americans.

75 Eligibility for Title I services under the *Workforce Innovation and Opportunity Act* (WIOA) is limited to individuals who are authorized to work in the United States, while Title II does not restrict eligibility based on immigration status. See Margie McHugh and Madeleine Morawski, "Immigrants and WIOA Services: Comparison of Sociodemographic Characteristics of Native- and Foreign-Born Adults in the United States" (Fact sheet series, U.S. profile, MPI, Washington, DC), www.migrationpolicy.org/sites/default/files/publications/WIOAFactSheet-USProfile-FINAL.pdf; U.S. Department of Labor, "Training and Employment Notice 29-13: Job-Driven National Emergency Grants, from Eric M. Seleznow to State Workforce Agencies, State Workforce Administrators, State Workforce Liaisons, State and Local Workforce Board Chairs and Directors, State Labor Commissioners, and Federally Recognized Tribes," April 28, 2014, http://wdr.doleta.gov/directives/attach/TEN/TEN_29_13.pdf.



For solutions, the United States could look to experiments undertaken by Canada, Australia, and European Union (EU) Member States that have developed policies that address skills development.⁷⁶ Led by both public and private organizations, these models have sought to:

- Fill gaps in immigrant education, work experience, and professional language skills
- Provide information to help newcomers navigate the domestic labor market and professional regulations
- Simplify licensing qualifications requirements and accelerate employment for eligible applicants⁷⁷
- Offer partial licensing or conditional recognition to make pathways to licensed professions more flexible.⁷⁸

Finally, there is strong logic to helping highly skilled immigrants succeed: Improving their labor market outcomes represents a comparatively inexpensive investment as their educations were largely financed in their sending countries.

This research points to the need to create inclusive approaches that address the specific needs of college graduates who are unemployed or work in low-skilled jobs regardless of where they were born or acquired their qualifications.

While this study focused primarily on the skill underutilization of immigrants, it also found that brain waste affects a significant number of U.S.-born college graduates. Given the rising educational levels for U.S.-born and immigrant workers yet the persistent levels of skill underutilization among them, this research points to the need to create inclusive approaches that address the specific needs of college graduates who are unemployed or work in low-skilled jobs regardless of where they were born or acquired their qualifications.

76 Anke Schuster, Maria Vincenza Desiderio, and Giuliana Urso, eds., *Recognition of Qualifications and Competences of Migrants* (Geneva: International Organization for Migration, 2013), <https://publications.iom.int/books/recognition-qualifications-and-competences-migrants>; Sumption, *Tackling Brain Waste*; Hawthorne, *Recognizing Foreign Qualifications*; Demetrios G. Papademetriou, *Maximizing Human Capital in a Rapidly Evolving Economic Landscape* (Washington, DC: MPI, 2013), www.migrationpolicy.org/research/maximizing-human-capital-rapidly-evolving-economic-landscape.

77 Leslyanne Hawthorne, "The Impact of Skilled Migration on Foreign Qualification Recognition Reform in Australia," *Canadian Public Policy* 41, no. 1 (2015): 173-86, <http://dx.doi.org/10.3138/cpp.2015-027>.

78 Hawthorne, *Recognizing Foreign Qualifications*.



Appendices

Appendix A. Methodology

1. Grouping Occupations by Skill Level using the O*NET Occupational Database

O*NET is a comprehensive online database of occupational profiles that describes day-to-day work tasks and activities, tools and technologies, and qualifications and skills of the typical worker. The O*NET database is updated regularly from surveys of workers, occupational experts, and occupational analysts. Its development is supported by the U.S. Department of Labor Employment and Training Administration.

One dimension of the O*NET database is the “job zone”—i.e., the assignment of occupations into five job zones based on the education, related experience, and job training required. Based on comparison of the median annual earnings of occupations in different job zones, this analysis combines Zones 1 and 2 as “low-skilled” and Zones 4 and 5 as “high-skilled” occupations; occupations in Zone 3 are categorized as “middle-skilled.” The low-skilled occupations overwhelmingly pay less than family-sustaining wages while high-skilled occupations pay significantly more.⁷⁹ Earlier Migration Policy Institute (MPI) work found a strong correlation between employment in a middle-skilled job and the earning of family-sustaining incomes.⁸⁰

2. Assigning Legal Status Information

This report draws on innovative assignments of legal status to noncitizens using data from the U.S. Census Bureau American Community Survey (ACS); five years of data, for 2009-13, were pooled to increase the precision of the estimates. James Bachmeier at Temple University and Jennifer Van Hook at The Pennsylvania State University, with input from researchers at MPI, developed techniques to link the ACS data to the 2008 Survey of Income and Program Participation (SIPP), which collects information on self-reported immigration status in addition to many variables the ACS offers.

The ACS, a large-scale annual population survey of about 3 million households, includes detailed information about immigrants, including their U.S. citizenship status, place of birth, year of immigration to the United States, and other sociodemographic and economic characteristics. The ACS does not, however, record the immigration or visa status of noncitizens. The SIPP is a smaller nationally representative survey conducted by the Census Bureau. The researchers linked noncitizens in the ACS and SIPP by their sociodemographic characteristics. Using a statistical technique known as multiple imputation, the researchers assigned unauthorized status to immigrants in the ACS who had characteristics similar to the foreign born who did not report a legal immigration status in the SIPP.⁸¹

79 The Economic Policy Institute defines a family-sustaining wage as the amount of annual earnings necessary to sustain a household at 60 percent of median income. See Algernon Austin, “Getting Good Jobs to People of Color” (Briefing Paper No. 250, Economic Policy Institute, Washington, DC, November 2009), www.epi.org/publications/entry/getting_good_jobs_to_people_of_color/.

80 Capps and Fix, *Still an Hourglass?*

81 Jennifer Van Hook, James D. Bachmeier, Donna L. Coffman, and Ofer Harel, “Can We Spin Straw Into Gold? An Evaluation of Immigrant Legal Status Imputation Approaches,” *Demography* 52, no. 1 (2015): 329-54; MPI Data Hub, “Unauthorized Immigrant Population Profiles,” accessed February 12, 2016, www.migrationpolicy.org/programs/us-immigration-policy-program-data-hub/unauthorized-immigrant-population-profiles.



3. Estimating Forgone Earnings Due to Immigrant Low-Skilled Employment

This section describes the authors' approach to examining the economic impact of low-skilled employment on highly skilled immigrants by addressing two questions:

- 1) How much less do college-educated immigrants earn because of their low-skilled employment (i.e., the amount of forgone earnings)?
- 2) How much less do immigrants in low-skilled jobs pay in federal, state, and local taxes (i.e., the amount of forgone taxes) as a result of their lower earnings?

Table A-1 outlines the steps taken to estimate the average level of immigrants' forgone earnings, and then the aggregate level. The authors conducted the analysis separately by place of education and gender. Because the analysis is based on annual earnings, only college-educated immigrants who were employed and who reported earning at least \$1 in the year prior to the survey year were selected.

Step 1 presents the mean annual earnings of adequately employed workers (i.e., in high- and middle-skilled jobs) and those of underemployed workers (i.e., in low-skilled jobs) by place of education and gender. The analysis finds that the earnings of adequately employed immigrant men were the same (about \$96,000) regardless of place of education, while U.S.-educated immigrant women on average earned about \$5,000 more than foreign-educated women (see line 1). In contrast, the annual earnings of immigrant workers in low-skilled jobs were significantly lower, ranging from \$27,000 among foreign-educated women to \$47,000 among U.S.-educated immigrant men (see line 2). The gap in mean annual earnings between adequately employed and underemployed immigrants was higher among men—\$56,000 for the foreign educated and \$49,000 for the U.S. educated (line 3). In comparison, the earnings gap was in mid-\$30,000 range for women.



Table A-1. Decomposition of Earnings Differences by Place of Education and Gender: Immigrants in Adequate versus Low-Skilled Employment*

| Line | Steps | Foreign-Educated Men | Foreign-Educated Women | U.S.-Educated Men | U.S.-Educated Women |
|------|--|----------------------|------------------------|-------------------|---------------------|
| | Step 1 | | | | |
| 1 | Earnings of adequately employed workers (\$) | 96,000 | 62,000 | 96,000 | 67,000 |
| 2 | Earnings of workers in low-skilled jobs (\$) | 40,000 | 27,000 | 47,000 | 35,000 |
| | Step 2 | | | | |
| 3 | Earnings gap (\$) | 56,000 | 35,000 | 49,000 | 32,000 |
| 4 | Due to differences in workers' characteristics | 24,000 | 12,000 | 22,000 | 11,000 |
| 5 | Due to low-skilled employment | 33,000 | 23,000 | 27,000 | 21,000 |
| | Step 3 | | | | |
| 6 | Total employed workers | 2,153,000 | 1,593,000 | 1,773,000 | 1,660,000 |
| 7 | Share (%) in low-skilled jobs | 23 | 26 | 17 | 16 |
| 8 | Number in low-skilled jobs | 487,000 | 419,000 | 303,000 | 269,000 |
| | Step 4 Immigrants' forgone earnings due to low-skilled employment (\$billion) | | | | |
| 9 | Total forgone earnings | 15.9 | 9.7 | 8.2 | 5.5 |
| 10 | Forgone earnings at "expected" rate for U.S. born | 11.1 | 5.1 | 7.5 | 4.7 |
| 11 | Forgone earnings due to "immigrant" experiences | 4.8 | 4.6 | 0.6 | 0.8 |

*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.

Notes: The authors also excluded the top 1 percent of earners. All earnings figures from the 2009-13 period were inflated to 2013 dollars.

Source: Migration Policy Institute (MPI) analysis of 2009-13 American Community Survey (ACS) and 2008 Survey of Income and Program Participation (SIPP) data from the U.S. Census Bureau, with legal status assignments by James D. Bachmeier of Temple University and Jennifer Van Hook of The Pennsylvania State University, Population Research Institute.

Using Blinder-Oaxaca decomposition techniques,⁸² a well-established methodology for analyzing determinants of wage differences, the authors estimated the amount of earnings losses attributable to low-skilled employment, net of demographic, educational, linguistic, legal status, state of residence, and other factors.

Step 2 shows the decomposition results used to separate immigrants' earnings disadvantage into two components:

- 1) The "explained" component, or the portion of the earnings gap that can be explained by differences in workers' characteristics. Adequately employed workers may receive a greater earnings premium because they have higher educational attainment, stronger English skills, or are more

82 F. L. Jones and Jonathan Kelley, "Decomposing Differences between Groups," *Sociological Methods and Research* vol. 12, no. 3 (1984): 323-43; Francisco L. Rivera-Batiz, "Undocumented Workers in the Labor Market: An Analysis of the Earning of Legal and Illegal Mexican Immigrants in the United States," *Journal of Population Economics* vol. 12, no. 1 (1999): 91-116; Francine D. Blau and Lawrence Kahn, "The Gender Gap: Extent, Trends, and Explanations" (NBER Working Paper no. 21913, National Bureau of Economic Research, Cambridge, MA, 2016), www.nber.org/papers/w21913.



likely to be citizens than immigrants in low-skilled jobs. The models employed here account for the differences between adequately and underemployed immigrants with respect to degree level, age and 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.

and

- 2) The “unexplained” component, or the portion of the earnings gap that is due to the lower earnings returns to skills and characteristics experienced by underemployed immigrant workers, relative to those of their statistically similar counterparts who were adequately employed. The “unexplained” component is the residual left after controlling for the measured differences in human capital and other worker characteristics. One significant remaining difference between the two groups of workers is the type of job in which they are employed. In other words, two people would report very different earnings because one works as a chief financial officer (i.e., a high-skilled job) and the other as a janitor (i.e., a low-skilled job) even if they both have an MA degree from abroad and work in a bank. Therefore, the second component captures the earnings penalty due to low-skilled employment.⁸³

In the case of foreign-educated men, line 4 of Table A-1 shows that differences in education, English language proficiency, demographics, industry of employment, and other individual characteristics together account for 43 percent of the earnings gap between adequately employed and underemployed workers (that is \$24,000 out of \$56,000). However, as seen in line 5, an even larger portion, about \$33,000 (for foreign-educated immigrant men), cannot be explained by differences in worker characteristics, but can, rather, be attributed to the lower earnings returns to skills and characteristics of underemployed immigrant workers. Put differently, *foreign-educated immigrant males in low-skilled jobs earn on average \$33,000 less per year than their adequately employed counterparts even when the two groups have similar demographic, education, and other characteristics*. The respective values of forgone earnings due to low-skilled employment among immigrant workers were \$27,000 for U.S.-educated men, \$23,000 for foreign-educated women, and \$21,000 for U.S.-educated women.⁸⁴

Line 5 shows the differences in pay due to low-skilled employment for an average worker. To aggregate these amounts across the entire immigrant worker population, the authors then estimate the number of immigrants in low-skilled jobs.

Step 3, line 7 shows the share of immigrant workers in low-skilled jobs, including 23 percent of foreign-educated men, 26 percent of foreign-educated women, and 16-17 percent among their U.S.-educated immigrant counterparts.⁸⁵ Applying these shares to the total employed population (line 6) the authors estimate that about 487,000 foreign-educated men were in low-skilled jobs, followed by 419,000 foreign-educated immigrant women, 303,000 U.S.-educated immigrant men, and 269,000 U.S.-educated immigrant women (see line 8).

Step 4, line 9 aggregates immigrant forgone earnings across the affected populations by multiplying the population estimates (line 8) by the lost average earnings due to low-skilled employment (line 5), net of differences in workers’ profiles. In the case of foreign-educated immigrant men, the total amount lost due

⁸³ It must be noted that the unexplained component could also reflect the presence of differences in unmeasured characteristics of workers in the two groups. For instance, the models employed here cannot measure (due to data limitations) the real and perceived quality of workers’ degrees and degree fields, their detailed labor market and earnings history, access to professional development, and other career-related opportunities, among other factors that are likely to affect individual earnings. The authors also cannot measure the relevance of foreign-earned education and training, and the degree of their transferability to the U.S. labor market or the effect of labor market discrimination.

⁸⁴ Line 5 in Table A-1 may also include the effects of unmeasured productivity or compensating differences that could not be modeled.

⁸⁵ These were calculated for a slightly different population (i.e., employed, earned at least \$1 in the year prior to the survey year, and excluding the top 1 percent of earners) as the one shown in Table 1. Hence, there might be small differences in the rates of low-skilled employment shown here versus Table 1.



to underemployment after controlling for differences in human capital and other characteristics is \$15.9 billion. Repeating these calculations for the remaining three groups and adding the results across line 9 produces \$39.4 billion—the amount immigrants lose when they work in low-skilled jobs at current levels of low-skilled employment.

Taking into Account the Experiences of U.S.-Born College Graduates. As a final step, the authors considered an alternative estimate that takes into account the fact that even among U.S.-born college graduates not every worker is able to secure gainful employment. The MPI data show that 16 percent of college-educated U.S.-born men and 14 percent of U.S.-born women are in low-skilled jobs.⁸⁶ The fact that the shares of U.S.-born college graduates in low-skilled jobs are lower than those of immigrants is not surprising. After all, U.S.-born college graduates by and large should face fewer barriers to utilizing their degrees and skills to the fullest extent in the U.S. labor market.

Analyses of labor market inequality often compare the outcomes of their study populations against a “privileged” group that is thought to have more favorable outcomes and experience less job discrimination. Assuming that the underemployment rate for the “privileged” group represents a “natural” or “expected” level in the U.S. labor market—in other words, every worker would be exposed to some level of underemployment—then the amount of immigrant losses estimated above \$39.4 billion should be adjusted downward to account for this “expected” rate. Assuming that the low-skilled employment of U.S.-born workers (a privileged group) represents some “natural” level of underemployment in the United States, line 10 recalculates the immigrant forgone earnings “normalizing” immigrants’ underemployment rates against those of U.S.-born college graduates.

In the case of foreign-educated men the amount would be \$11.1 billion (i.e., 2,153,000 x 16 percent x 33,000). Repeating these calculations for the remaining three immigrant groups and adding the results across line 10 would generate \$28.5 billion—or the amount immigrants would lose due to underemployment had their rates of low-skilled employment been similar to those of the privileged group.

Finally, if immigrant workers are likely to lose the total of \$39.4 billion due to low-skilled employment (the sum of line 9), of which \$28.5 billion can be explained by the relative underemployment of the U.S.-born college graduates (the sum of line 10), the difference of \$10.8 billion (the sum of line 11) would represent the losses attributable solely to immigrant experiences.

4. Estimating Immigrants’ Forgone Taxes

This section outlines the steps taken to estimate how much less in federal, state, and local taxes immigrants in low-skilled jobs pay (i.e., the amount of forgone taxes):

- 1) The authors selected households with at least one college-educated immigrant employed in a low-skilled job and identified the number of such households. This was done within five household income groups referred as income quintiles.
- 2) The authors calculated the current household incomes of all immigrant earners in low-skilled jobs as well as their respective forgone earnings drawn on the analysis from the decomposition model. They then calculated the averages of the current household-level income and forgone earnings *across households* in each income quintile. (Note: the amount of forgone earnings in a given household will depend on the number and characteristics of earners—i.e., gender and place of education—in that household.)
- 3) To calculate the amount of forgone federal taxes associated with these earnings, Institute on Taxation and Economic Policy (ITEP) researchers applied the effective tax rates (ETR) to the incomes *without* forgone earnings and to the incomes *with* forgone earnings in each quintile. Respective ETRs from

86 Ibid.



the ITEP microsimulation models were used for each of the five income quintiles. The amount of federal taxes on *current income* is shown in column C of Table A-2 and the amount of federal taxes on *current income together with forgone earnings* is shown in column D. The last step is to take the difference between these amounts and multiply it by the number of households in the respective quintile (column B). Adding the results across the quintiles (see column E), the report finds that immigrant households would have paid an additional \$7.2 billion in federal taxes.

Table A-2. Estimating Forgone Federal Taxes of Immigrant Households due to Immigrant Low-Skilled Employment

| Income Quintiles | Number of Households | Federal Tax on Current Income | Federal Tax on Income with Forgone Earnings | Total Tax Change |
|----------------------------------|----------------------|-------------------------------|---|----------------------|
| (A) | (B) | (C) | (D) | (E)=(D-C)*(B) |
| First 20% (\$50,00 or under) | 507,340 | 5,300 | 8,000 | 1,380,236,400 |
| Second 20% (\$50,000-\$80,000) | 272,056 | 13,300 | 18,700 | 1,485,690,900 |
| Third 20% (\$80,000-\$112,000) | 184,351 | 20,500 | 27,600 | 1,309,415,700 |
| Fourth 20% (\$112,000-\$164,000) | 148,521 | 29,200 | 38,200 | 1,328,356,700 |
| Top 20% (\$164,00 or above) | 108,375 | 136,100 | 151,600 | 1,680,108,100 |
| Total | | | | 7,183,807,800 |

This approach was replicated with respective effective tax rates to calculate the amount of forgone state and local taxes at the national level. The result is that the value of forgone state/local taxes due to immigrant low-skilled employment would be an additional \$3 billion. The above steps were replicated for each of the study states to estimate the amount of forgone state and local taxes. The national and state-level results are shown in Table 3.



Appendix B. Additional Tables

Table A-3. Regression-Adjusted Effects (odds ratios) of Characteristics of College-Educated Immigrants on Their Net Probability of Low-Skilled Employment by Gender, 2009-13

| | Men | Women |
|--|----------|----------|
| Age at arrival (compared to those arrived before 13) | | |
| 13-17 | 0.94 * | 1.01 |
| 18-24 | 1.16 *** | 1.15 *** |
| 25 or after | 1.44 *** | 1.62 *** |
| Race and ethnicity (compared to non-Hispanic Whites) | | |
| Hispanics | 1.34 *** | 1.33 *** |
| Non-Hispanic Blacks | 1.81 *** | 1.28 *** |
| Non-Hispanic Asians | 0.80 *** | 0.86 *** |
| Education (compared to BA) | | |
| Master | 0.41 *** | 0.48 *** |
| PhD/Professional | 0.20 *** | 0.26 *** |
| English proficiency (compared to 'English only') | | |
| Very well | 1.33 *** | 1.13 *** |
| Well | 2.55 *** | 2.00 *** |
| Not well / Not at all | 5.22 *** | 4.64 *** |
| Legal/citizenship status (compared to naturalized citizens) | | |
| Unauthorized | 1.58 *** | 1.67 *** |
| Legal temporary | 0.23 *** | 0.61 *** |
| Legal permanent resident | 1.11 *** | 1.43 *** |

Notes: Dependent variable: Probability of low-skilled employment. This table shows the results for the most salient factors. Additionally, each model included controls for age and age squared, marital status, current enrollment in school, parental status, state of residence, and year of the sample. The full model results are available upon request. All logistic regression coefficients are statistically significant at least at the 0.1 p-value level, except the ones with no *. Statistical significance: *** 0.01 level, ** 0.05 level, * 0.1 level.

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.

How to interpret the odds ratios

The odds ratios capture the likelihood of low-skilled employment of one group of workers compared to the reference group. To interpret the odds ratios, one needs to compare the coefficient to 1: The closer the odds ratios to 1, the smaller the group differences. Consider two examples from the above table:

The odds ratio estimate of 1.62 for women who arrived after age 25 shown means that their likelihood of low-skilled employment is 62 percent higher than the likelihood of women who immigrated to the United States before age 13 (the reference group)

The odds ratio of 0.80 for Asian men means that their odds of low-skilled employment are 20 percent lower than those for White men (the reference group).



Table A-4. State Share of the Total Immigrant and U.S.-Born College-Educated Populations, and Share Who Were Underemployed or Unemployed, by State (%), 2009-13

| State | State Share (%) of U.S.-Level Estimates | | Share Underutilized (%) by State | |
|------------------------|--|-------------------|-------------------------------------|-------------|
| | Immigrants | U.S. Born | Immigrants | U.S. Born |
| | 7,618,100 | 37,935,700 | 25.2 | 18.4 |
| California | 23.7 | 10.3 | 25.0 | 18.7 |
| New York | 11.5 | 6.8 | 26.6 | 17.8 |
| Florida | 8.0 | 4.8 | 31.5 | 20.2 |
| Texas | 7.8 | 7.2 | 22.5 | 16.4 |
| New Jersey | 6.4 | 3.2 | 24.9 | 18.1 |
| Illinois | 4.7 | 4.7 | 27.2 | 19.1 |
| Maryland* | 3.4 | 2.7 | 21.8 | 14.2 |
| Virginia | 3.3 | 3.2 | 24.0 | 14.2 |
| Massachusetts | 3.3 | 3.1 | 22.1 | 18.0 |
| Georgia | 2.5 | 3.1 | 25.9 | 19.2 |
| Pennsylvania | 2.4 | 4.4 | 22.6 | 18.6 |
| Washington | 2.3 | 2.4 | 23.0 | 19.0 |
| Michigan | 1.9 | 3.0 | 20.2 | 20.0 |
| North Carolina | 1.6 | 3.1 | 24.1 | 19.3 |
| Ohio | 1.5 | 3.7 | 20.6 | 18.6 |
| Total 15 states | 84.4 | 65.7 | - | - |

*Includes the District of Columbia.

Note: States are sorted by their share of the U.S. immigrant population.

Source: MPI analysis of 2009-13 ACS and 2008 SIPP data from the U.S. Census Bureau, with legal status assignments by Bachmeier and Van Hook.



Works Cited

- Akresh, Illana. 2008. Occupational Trajectories of Legal U.S. Immigrants: Downgrading and Recovery. *Population and Development Review* 34 (3): 435-56.
- Altonji, Joseph, Lisa Kahn, and Jamin Speer. 2014. Trends in Earnings Differentials across College Majors and the Changing Task Composition of Jobs. *American Economic Review: Papers and Proceedings* 104 (5): 387-93.
- Austin, Algernon. 2009. Getting Good Jobs to People of Color. Briefing Paper No. 250, Economic Policy Institute, Washington, DC, November 2009. www.epi.org/publications/entry/getting_good_jobs_to_people_of_color/.
- Batalova, Jeanne. 2010. H-1B Temporary Skilled Worker Program. *Migration Information Source*, October 7, 2010. www.migrationpolicy.org/article/h-1b-temporary-skilled-worker-program.
- Batalova, Jeanne and Michael Fix. 2015. *Through an Immigrant Lens: PIAAC Assessment of the Competencies of Adults in the United States*. Washington, DC: Migration Policy Institute. www.migrationpolicy.org/research/through-immigrant-lens-piaac-assessment-competencies-adults-united-states.
- Batalova, Jeanne and Michael Fix with Peter Creticos. 2008. *Uneven Progress: The Employment Pathways of Skilled Immigrants in the United States*. Washington, DC: Migration Policy Institute. www.migrationpolicy.org/research/uneven-progress-employment-pathways-skilled-immigrants-united-states.
- Bergson-Shilcock, Amanda and James Witte. 2015. *Steps to Success: Integrating Immigrant Professionals in the U.S.* New York: World Education Services. <http://knowledge.wes.org/Report-Steps-to-Success-Integrating-Immigrant-Professionals-in-the-US.html>.
- Bertelsmann Stiftung and Migration Policy Institute (MPI), eds. 2009. *Talent, Competitiveness, and Migration*. Gütersloh, Germany and Washington, DC: Verlag Bertelsmann Stiftung and MPI. www.migrationpolicy.org/research/talent-competitiveness-and-migration-0.
- Blau, Francine D. and Lawrence Kahn. 2016. The Gender Gap: Extent, Trends, and Explanations. NBER Working Paper no. 21913, National Bureau of Economic Research, Cambridge, MA. www.nber.org/papers/w21913.
- Blau, Francine D. and Christopher Mackie, eds. 2016. *The Economic and Fiscal Consequences of Immigration*. Washington, DC: The National Academies Press. www.nap.edu/catalog/23550/the-economic-and-fiscal-consequences-of-immigration.
- Bonfati Sara and Theodora Xenogiani. 2014. Migrants' Skills: Use, Mismatch and Labour Market Outcomes—A First Exploration of the Survey of Adult Skills (PIAAC). In *Matching Economic Migration with Labour Market Needs*, eds. Organization for Economic Cooperation and Development (OECD) and European Commission. Paris: OECD Publishing.
- Capps, Randy and Michael Fix. 2010. *Still an Hourglass? Immigrant Workers in Middle-Skilled Jobs*. Washington, DC: MPI. www.migrationpolicy.org/research/immigrant-workers-middle-skilled-jobs-0.
- City of Los Angeles. N.d. Budget Summary, FY 2016-17. Accessed November 19, 2016. <http://cao.lacity.org/budget/summary/2016-17BudgetSummaryBooklet.pdf>.
- Clarke, Andrew and Mikal Skuterud. 2014. Immigrant Skill Selection and Utilization: A Comparative Analysis of Australia, Canada, and the United States. Working Paper no. 1404, University of Waterloo, Waterloo, Canada, Department of Economics, Revised July 2014.



- Desiderio, Maria Vincenza. 2016. *Blue Card Redux: European Commission Plan to Recast Work Permit for Highly Skilled Holds Question Marks*. MPI commentary, June 2016. www.migrationpolicy.org/news/blue-card-redux-european-commission-plan-recast-work-permit-highly-skilled-holds-question-marks.
- Fix, Michael, Kate Hooper, and Jie Zong. Forthcoming. *Refugee Integration and the National and State Level in the United States: Is There a Lottery Effect?* Washington, DC: MPI.
- Fogg, Neeta P. and Paul E. Harrington. 2012. *Mal-Employment Problems among College-Educated Immigrants in the United States*. Philadelphia: Drexel University. http://lincs.ed.gov/publications/pdf/4_Mal-employment-paper.pdf.
- _____. 2013. *Labor Market Underutilization Problems among College-Educated Immigrants in the United States*. Philadelphia: Center for Labor Markets and Policy, Drexel University. http://lincs.ed.gov/publications/pdf/Immigrant_Unemployment_Problems_Report.pdf.
- Friedberg, Rachel. 2000. You Can't Take It with You? Immigrant Assimilation and the Portability of Human Capital. *Journal of Labor Economics* 18 (2): 221-46.
- Furman, Jason. 2016. The Truth about American Unemployment. *Foreign Affairs*, July/August: 127-38.
- Global Talent Retention Initiative of Michigan. N.d. What We Do. Accessed October 5, 2016. www.migtri.org/about-gtri.
- Guerrero, Laura and Mitchell Rothstein. 2012. Antecedents of Underemployment: Job Search of Skilled Immigrants in Canada. *Applied Psychology: An International Review* 61 (2): 323-46.
- Haley, Ryan and Sarinda Taengnoi. 2011. The Skill Transferability of High-Skilled U.S. Immigrants. *Applied Economics Letters* 18 (7): 633-36.
- Hawthorne, Lesleyanne. 2013. *Recognizing Foreign Qualifications: Emerging Global Trends*. Washington, DC: MPI. www.migrationpolicy.org/research/recognizing-foreign-qualifications-emerging-global-trends.
- _____. 2015. The Impact of Skilled Migration on Foreign Qualification Recognition Reform in Australia. *Canadian Public Policy* 41 (1): 173-86. <http://dx.doi.org/10.3138/cpp.2015-027>.
- Hershbein, Brad and Melissa S. Kearney. 2014. *Major Decisions: What Graduates Earn Over Their Lifetimes*. Washington, DC: Brookings Institution, The Hamilton Project. www.hamiltonproject.org/papers/major_decisions_what_graduates_earn_over_their_lifetimes/.
- Institute on Taxation and Economic Policy (ITEP). 2015. *Who Pays? A Distributional Analysis of the Tax Systems in All Fifty States*. Washington, DC: ITEP. www.itepnet.org/whopays.htm.
- International Labor Organization (ILO). 2015. *The Contribution of Labour Mobility to Economic Growth*. Joint paper for G20 Labour and Employment Ministers' Meeting. Ankara, Turkey: ILO, OECD, and World Bank. www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_398078.pdf.
- Jones, F.L. and Jonathan Kelley. 1984. Decomposing Differences between Groups. *Sociological Methods and Research* 12 (3): 323-43.
- Lewin-Epstein, Noah, Moshe Semyonov, and Irena Kogan. 2003. Institutional Structure and Immigrant Integration: A Comparative Study of Immigrants' Labor Market Attainment in Canada and Israel. *International Migration Review* 37 (2): 389-420.



- Mattoo, Aaditya, Ileana Cristina Neagu, and Çağlar Özden. 2008. Brain Waste? Educated Immigrants in the U.S. Labor Market. *Journal of Development Economics* 87 (2): 255-69.
- McHugh, Margie and Madeleine Morawski. 2015. Immigrants and WIOA Services: Comparison of Sociodemographic Characteristics of Native- and Foreign-Born Adults in the United States. Fact sheet series, U.S. profile, MPI, Washington, DC. www.migrationpolicy.org/sites/default/files/publications/WIOAFactSheet-USProfile-FINAL.pdf.
- Mendoza, Dovelyn Rannveig. 2015. *Shortage amid Surplus: Emigration and Human Capital Development in the Philippines*. Bangkok and Washington, DC: International Organization for Migration and MPI. <http://migrationpolicy.org/research/shortage-amid-surplus-emigration-and-human-capital-development-philippines>.
- Miller, Claire Cain. 2014. A College Major Matters Even More in a Recession. *New York Times*, June 20, 2014. www.nytimes.com/2014/06/21/upshot/a-college-major-matters-even-more-in-a-recession.html?_r=3.
- New American Economy. N.d. Reports: The Contributions of New Americans. Accessed November 3, 2016. www.renewoureconomy.org/reports/
- Organization for Economic Cooperation and Development (OECD). 2015. *International Migration Outlook 2015*. Paris: OECD Publishing.
- _____. 2015. *Education at a Glance 2015: OECD Indicators*. Paris: OECD Publishing. http://download.ei-ie.org/Docs/WebDepot/EaG2015_EN.pdf.
- OECD and European Union, eds. 2014. *Matching Economic Migration with Labour Market Needs in Europe*. Paris: OECD Publishing. <http://ec.europa.eu/social/BlobServlet?docId=12628&langId=en>.
- _____. 2015. *Indicators of Immigrant Integration 2015: Settling In*. Paris, OECD Publishing. www.oecd.org/publications/indicators-of-immigrant-integration-2015-settling-in-9789264234024-en.htm.
- Ohio Global Reach to Engage Academic Talent. N.d. About Us. Accessed November 1, 2016. <https://ohio-great.us/#/about-ohio>.
- Papademetriou, Demetrios G. 2013. *Maximizing Human Capital in a Rapidly Evolving Economic Landscape*. Washington, DC: MPI www.migrationpolicy.org/research/maximizing-human-capital-rapidly-evolving-economic-landscape.
- _____. 2014. *Migration's Local Dividends: How Cities and Regions Can Make the Most of Immigration*. Washington, DC: MPI. <http://migrationpolicy.org/research/migrations-local-dividends-how-cities-and-regions-can-make-most-immigration-transatlantic>.
- Reitz, Jeffrey G. 2001. Immigrant Skill Utilization in the Canadian Labour Market: Implications of Human Capital Research. *Journal of International Migration and Integration* 2 (3): 347-78.
- Reitz, Jeffrey G., Josh Curtis, and Jennifer Elrick. 2014. Immigrant Skill Underutilization: Trends and Policy Issues. *Journal of International Migration and Integration* 15 (1): 1-26.
- Rivera-Batiz, Francisco L. 1999. Undocumented Workers in the Labor Market: An Analysis of the Earning of Legal and Illegal Mexican Immigrants in the United States. *Journal of Population Economics* 12 (1): 91-116.
- Schuster, Anke, Maria Vincenza Desiderio, and Giuliana Urso, eds. 2013. *Recognition of Qualifications and Competences of Migrants*. Geneva: International Organization for Migration. <https://publications.iom.int/books/recognition-qualifications-and-competences-migrants>.



- Slaughter, Matthew J. 2016. *The Increasing Cost to American Companies of Hiring Skilled Immigrant Workers*. White paper, ACalliance, Washington, DC, March 2016. http://acalliance.org/wp-content/uploads/2016/03/ACA_Cost_of_Skilled_Workers_White_Paper_FINAL.pdf.
- St. Louis Mosaic Project. N.d. About Us. Accessed August 10, 2016.
- Sumption, Madeleine. 2013. *Tackling Brain Waste: Strategies to Improve the Recognition of Immigrants' Foreign Qualifications*. Washington, DC: MPI. www.migrationpolicy.org/research/tackling-brain-waste-strategies-improve-recognition-immigrants-foreign-qualifications.
- Sumption, Madeleine and Sarah Flamm. 2012. *The Economic Value of Citizenship for Immigrants in the United States*. Washington, DC: MPI. www.migrationpolicy.org/research/economic-value-citizenship.
- Thompson, Carolyn. 2016. New York Lifts Some Licensing Restrictions for Some Immigrants. Associated Press, May 17, 2016. <http://bigstory.ap.org/article/fd63da99690a4b1f8c3792b95b7c477b/ny-lifts-licensing-restrictions-some-immigrants>.
- Upwardly Global. N.d. About Us. Accessed August 10, 2016. www.upwardlyglobal.org/about-upglo.
- U.S. Citizenship and Immigration Services (USCIS). 2015. *Characteristics of H-1B Specialty Occupation Workers*. Washington, DC: USCIS. www.uscis.gov/sites/default/files/USCIS/Resources/Reports%20and%20Studies/H-1B/h-1B-characteristics-report-14.pdf.
- . 2016. Consideration of Deferred Action for Childhood Arrivals (DACA). Updated October 14, 2016. www.uscis.gov/humanitarian/consideration-deferred-action-childhood-arrivals-daca.
- U.S. Department of Labor. 2014. Training and Employment Notice 29-13: Job-Driven National Emergency Grants, from Eric M. Seleznow to State Workforce Agencies, State Workforce Administrators, State Workforce Liaisons, State and Local Workforce Board Chairs and Directors, State Labor Commissioners, and Federally Recognized Tribes. Washington, DC: U.S. Department of Labor, April 28, 2014. http://wdr.doleta.gov/directives/attach/TEN/TEN_29_13.pdf.
- Van Hook, Jennifer, James D. Bachmeier, Donna L. Coffman, and Ofer Harel. 2015. Can We Spin Straw Into Gold? An Evaluation of Immigrant Legal Status Imputation Approaches. *Demography* 52 (1): 329-54.
- Waters, Mary C. and Marisa Gerstein Pineau, eds. 2015. *The Integration of Immigrants into American Society*. Washington, DC: The National Academies Press. www.nap.edu/catalog/21746/the-integration-of-immigrants-into-american-society.
- Welcome Back Initiative. N.d. International Health Worker Assistance Center. Accessed August 10, 2016. www.welcomebackinitiative.org/.
- White House. N.d. White House Task Force on New Americans. Accessed August 10, 2016. www.whitehouse.gov/issues/immigration/new-americans.



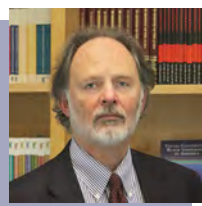
About the Authors



Jeanne Batalova is a Senior Policy Analyst at the Migration Policy Institute (MPI) and Manager of the MPI Data Hub, a one-stop, online resource that provides instant access to the latest facts, stats, and maps covering U.S. and global data on immigration and immigrant integration. She is also a Nonresident Fellow with MPI Europe.

Her areas of expertise include the impacts of immigrants on society and labor markets; social and economic mobility of first- and second-generation youth and young adults; and the policies and practices regulating immigration and integration of highly skilled workers and foreign students in the United States and other countries.

Dr. Batalova earned her PhD in sociology, with a specialization in demography, from the University of California-Irvine; an MBA from Roosevelt University; and bachelor of the arts in economics from the Academy of Economic Studies, Chisinau, Moldova.



Michael Fix is President of MPI, a position he assumed in 2014 after serving as CEO and Director of Studies. He joined MPI in 2005, and was previously Senior Vice President and Co-Director of MPI's National Center on Immigrant Integration Policy.

Mr. Fix's research focus is on immigrant integration and the education of immigrant children in the United States and Europe, as well as citizenship policy, immigrant children and families, the effect of welfare reform on immigrants, and the impact of immigrants on the U.S. labor force.

Prior to joining MPI, Mr. Fix was Director of Immigration Studies at the Urban Institute in Washington, DC, where his focus was on immigration and integration policy, race and the measurement of discrimination, and federalism.

Mr. Fix serves on the board of MPI Europe and is a Policy Fellow with IZA in Bonn, Germany. He served as a member of the National Research Council's Committee on the Integration of Immigrants into U.S. Society, which examined what is known about the integration of immigrants in the United States and published the findings in a September 2015 report.

Previously, he served on the National Academy of Sciences' Committee on the Redesign of U.S. Naturalization Tests and on the Committee on the Health and Adjustment of Immigrant Children. He also served as a member of the Advisory Panel to the Foundation for Child Development's Young Scholars Program. In 2005 he was appointed to the State of Illinois' New Americans Advisory Council, and in 2009 to the State of Maryland's Council for New Americans.

Mr. Fix received a JD from the University of Virginia and a bachelor of the arts degree from Princeton University. He did additional graduate work at the London School of Economics.



James D. Bachmeier is an Assistant Professor in the Department of Sociology at Temple University. His research is focused on patterns of immigrant incorporation in the United States, illegal migration, and the measurement of immigrant legal status. He is an MPI Nonresident Fellow.

Dr. Bachmeier's research has been published in leading social science journals, including *Social Forces*, *Demography*, *International Migration Review*, and *Social Science Research*. Along with Frank D. Bean and Susan K. Brown, he is also the author of *Parents Without Papers: The Progress and Pitfalls of Mexican American Integration* (Russell Sage Foundation, 2015). He is a member of the American Sociological Association and the Population Association of America.

Prior to joining the Sociology Department at Temple in 2013, Dr. Bachmeier was a postdoctoral researcher in the Population Research Institute at The Pennsylvania State University. He received his Ph.D. in sociology in 2010 from the University of California, Irvine.



The Migration Policy Institute is a nonprofit, nonpartisan think tank dedicated to the study of the movement of people worldwide. MPI provides analysis, development, and evaluation of migration and refugee policies at the local, national, and international levels. It aims to meet the rising demand for pragmatic and thoughtful responses to the challenges and opportunities that large-scale migration, whether voluntary or forced, presents to communities and institutions in an increasingly integrated world.

www.migrationpolicy.org



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.

www.renewoureconomy.org



World Education Services

World Education Services (WES) is a nonprofit organization dedicated to helping immigrants in the United States and Canada achieve their academic and professional goals through the recognition of their education and training earned abroad. Its Global Talent Bridge program conducts outreach and provides training, tools, and resources designed to ensure the successful integration of immigrant professionals.

WES also hosts IMPRINT, a national coalition of nonprofit organizations that identifies and promotes best practices, and advocates for policies that facilitate the integration of immigrant professionals into the U.S. economy.

wes.org/globaltalentbridge