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## The Impact of Highly Skilled and Talented Workers on the US Economy: Leveraging the Best and Brightest Minds for Economic Growth

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### Abstract

*The United States has long been a beacon of opportunity and innovation, attracting some of the brightest minds from around the world. The influx of highly skilled and talented workers has been crucial in driving economic growth, fostering innovation, and maintaining the nation's competitive edge globally. This paper examines the profound impact of these individuals on the U.S. economy, particularly within the technology sector, and explores their contributions across STEM (Science, Technology, Engineering, and Mathematics) fields, finance, legal, and healthcare sectors, which have fueled economic development and technological advancement. However, this Research Note also identifies several challenges that could hinder the productivity and impact of these workers. Key issues include brain waste and skills mismatches, the displacement and replacement of native workers, brain drain and talent retention, access to education and economic inequality, as well as migration and international student policies, and security and social safety concerns. To ensure the continued economic productivity of these talented individuals, the researcher recommends several solutions. These include establishing programs to more efficiently recognize and validate foreign credentials, implementing reverse brain drain initiatives, and strengthening the monitoring and enforcement mechanisms of existing laws, such as the "Protect and Grow American Jobs Act."*

**Keywords:** *Highly Skilled Workers, Innovation, US Economy*

### I. Introduction

#### A. Background

In the highly competitive and interconnected global landscape of the 21st century, the importance of highly skilled workers in driving economic growth is vital. Countries that successfully leverage the expertise of these individuals often see significant gains in productivity, innovation, and sustained development.<sup>1</sup> Highly skilled workers, defined by their advanced education, specialized knowledge, and technical abilities, are crucial for creating and maintaining competitive advantages in key sectors such as technology, healthcare, finance, law, and scientific research.<sup>2</sup>

<sup>1</sup> Shulamit Kahn & Megan MacGarvie, *How Important Is U.S. Location for Research Science?*, 98 REV. ECON. STAT. 397, 402 (2016).

<sup>2</sup> Giovanni Peri, Kevin Shih & Chad Sparber, *STEM Workers, H-1B Visas and Productivity in U.S. Cities*, 33 J. LABOR ECON. 225, 233 (2015).

The United States (the U.S.), the third most populous country in the world with an aggregate population of over 346 million people,<sup>3</sup> exemplifies this principle, with its position as a global leader in Gross Domestic Product (GDP)<sup>4</sup> and steady economic growth largely attributed to its robust educational and technological infrastructure. As one of the most attractive destinations for both native talent and international intellectual migration, the U.S. has reaped substantial benefits from the contributions of highly skilled workers.<sup>5</sup>

During the economic boom of the 1980s and 1990s, the U.S. faced a growing demand for skilled labor, spurred by rapid market expansion<sup>6</sup> that outstripped the supply of college graduates.<sup>7</sup> To bridge this gap, the country increasingly relied on high-skilled immigrants, integrating them into the labor force. By 2012, foreign-born males constituted 17.1% of the workforce,<sup>8</sup> helping the U.S. to cultivate a more technologically advanced labor market, both by developing native talent and welcoming skilled professionals from abroad.<sup>9</sup>

Today, the U.S. population includes over 46 million foreign-born individuals, representing 13.8% of the total population. International migration provides these workers with access to high-quality education, enhancing their competitiveness in the market.<sup>10</sup> While some debates focus on the potential displacement of native workers due to high-skill immigration, the economic advantages brought by these skilled workers far outweigh these concerns. This research underscores that the combined contributions of highly skilled native workers and talented immigrants have been instrumental in sustaining the U.S. economy and will continue to be vital for its future growth.

### **B. Objectives of the Research**

Throughout this Research, the researcher aims to analyze the economic contributions of highly-skilled workers to the stability, GDP growth, and international competitiveness of the US economy. In doing so, the research will assess the current landscape of highly-skilled and talented workers in key sectors of the US economy; investigate the impact of highly-skilled workers on innovation, technological advancements, productivity, and efficiency within various industries and sectors; identify and evaluate the challenges and barriers faced by the highly-skilled workforce; examine the role of migration and international student policies in shaping the availability and distribution of highly-skilled workers in the US. The research will also provide recommendations for policymakers and industry leaders to support and enhance the development, retention, and utilization of highly-skilled workers.

## **II. Role of Highly-Skilled and Talented Workers in Key Sectors**

In today's rapidly evolving global landscape, economies are increasingly reliant on highly-skilled and talented workers to drive innovation, productivity, and growth. The United States, with its diverse and dynamic economy, exemplifies the critical role that highly-skilled labor plays in maintaining competitive advantage and fostering economic prosperity. This Part identifies the role of highly-skilled and talented workers - native and foreign-born - in key sectors of the US economy.

### **A. Entrepreneurship, Engineering and Technology Sector**

The U.S. entrepreneurial and technology sector is characterized by significant activity and demand, with both native and immigrant entrepreneurs making substantial contributions. Interestingly, immigrants have played an increasingly prominent role in this sector. A 2007 survey conducted by Duke University and the University of California-Berkeley revealed that over one-quarter of all newly founded engineering and technology firms in the U.S. between 1995 and 2005 had at least one foreign-born founder,<sup>11</sup> a figure that rose to over 52% in Silicon Valley during the same period.<sup>12</sup>

<sup>3</sup> See *United States Population*, *WORLD METER* <https://www.worldometers.info/world-population/us-population/> (last visited August 8, 2024).

<sup>4</sup> The U.S. GDP for 2023 is about \$27.36 trillion. See *Gross Domestic Product of the United States from 1990 to 2023*, STATISCA (July 5, 2024) <https://www.statista.com/statistics/188105/annual-gdp-of-the-united-states-since-1990/>.

<sup>5</sup> See I. Gryshova, B. Kofman & O. Petrenko, *Migration Cultures and their Outcomes for National Security*, 8 J. SEC. SUS. 521, 522 (2019).

<sup>6</sup> See L. F. Katz & David H. Autor, *Changes in the Wage Structure and Earnings Inequality* 3 HANDBOOK OF LABOR ECONS 1463, 1466 (1999); Claudia Goldin & Lawrence F. Katz, *The Race between Education and Technology*, 33 (2008).

<sup>7</sup> See Gordon H. Hanson & Chen Liu, *High-Skilled Immigration and the Comparative Advantage of Foreign-Born Workers across US Occupations* 6 NAT. BER. R. 7, 9 (2016).

<sup>8</sup> *Id.*

<sup>9</sup> Richard Freeman, *Does Globalization of the Scientific/ Engineering Workforce Threaten US Economic Leadership?*, NBER (Working Paper No. 11457, Cambridge, MA 2005).

<sup>10</sup> S. Veeramoothoo, *Social Justice and the Portrayal of Migrants in International Organization for Migration's World Migration Reports*, 52 J. TECH. WRIT. COMM. 57, 63 (2022). International migration into the US can be roughly split into five categories: family-related (through reunions and marriages); humanitarian (refugees from United Nations quotas or asylum seekers); permanent or temporary employment-related; student; and illegal. While the family-related, humanitarian, and illegal categories are often low in high-skill components, and the employment-related category have low and high skill components, the student category is often composed of high-skill immigrants.

<sup>11</sup> M. Feldstein, *Why is Growth Better in the United States than in other Industrial Countries?*, 39 J. P. MOD. 655, 655 (2017).

<sup>12</sup> D. Salvatore, *Overview of Technology, Productivity, Trade, Growth, and Jobs in the United States and the World*, 41 J. P. MOD. 435, 437 (2019).

Asians make up roughly 57% of Silicon Valley's tech workforce,<sup>13</sup> underscoring the region's reputation as a hub of high technology and innovation, home to industry giants like Google, Apple, and Facebook. Immigrant entrepreneurs who have achieved notable success in Silicon Valley often draw on their ethnic networks while integrating into mainstream technology and business circles.<sup>14</sup>

Notable examples of immigrant leaders in the U.S. technology sector include the late Susan Diane Wojcicki, an American-Polish former CEO of YouTube; Sergey Brin, a Russian immigrant who co-founded Google, revolutionizing search engines and digital advertising;<sup>15</sup> Satya Nadella, an Indian-born executive whose leadership as CEO of Microsoft saw the company's market value rise from \$300 billion to over \$1 trillion; and Elon Musk, a South African-born entrepreneur who co-founded PayPal, founded SpaceX, and serves as CEO of Tesla and owner of X (formerly Twitter). These individuals have led companies that not only created millions of jobs but also significantly advanced the technology sector, impacting both the U.S. and global economies.

Beyond technology, the influence of immigrants on American business and culture is also evident across various industries. Many of the nation's most iconic brands, from Wall Street's Goldman Sachs to retail giant Kohl's and food conglomerate Kraft, were founded by immigrants. Notably, approximately 40% of Fortune 500 companies were established by first- or second-generation immigrants.<sup>16</sup> In Silicon Valley, immigrants head half of all engineering and technology startups.

### **B. Healthcare and Biotechnology**

The healthcare and biotechnology sectors contribute significantly to the U.S. economy each year. Like other professional fields, these sectors are led by highly skilled and talented individuals. One notable figure is Robert Jarvik, an American scientist, researcher, and entrepreneur, renowned for developing the Jarvik-7, the first permanently implantable artificial heart. This groundbreaking invention has been life-saving, with more than 350 patients reportedly using the Jarvik-7 heart between 1982 and 2024.<sup>17</sup> Jarvik's contributions have driven advancements in medical devices and life-saving technologies, making a lasting impact on healthcare.

Another influential leader in this sector is Ben Carson, whose work in neurosurgery, particularly the successful separation of conjoined twins fused at the brain, has been highly significant. In 2001, CNN and Time magazine recognized Carson as one of the nation's 20 foremost physicians and scientists, and the Library of Congress honored him as one of 89 "Living Legends" during its 200th anniversary. In 2008, Carson was awarded the Presidential Medal of Freedom, the foremost civilian honor in the United States.<sup>18</sup>

Immigrants also play a vital role in the U.S. healthcare workforce, with more than 18% of healthcare workers being foreign-born, including 26% of physicians, 16% of registered nurses, and 40% of home healthcare workers. These professionals help alleviate the ongoing workforce shortages that have long challenged the healthcare sector, a problem exacerbated by the COVID-19 pandemic.<sup>19</sup>

### **C. Finance and Legal Sectors**

Highly skilled individuals have also made significant contributions to the finance and legal sectors in the U.S. Andrew Carnegie, an immigrant, exemplifies this impact by founding Carnegie Steel Company, which fueled the expansion of the American steel industry and helped establish the U.S. as an industrial leader.<sup>20</sup> In contrast, Henry Kravis, a U.S. native, co-founded KKR, one of the world's largest private equity firms, which has greatly influenced corporate finance and restructuring globally.<sup>21</sup>

In the legal sector, immigrant professionals have played key roles in shaping U.S. legal frameworks and advocating for civil rights. For example, Nigerian-born sociologist and legal scholar Ebenezer Obadare has been pivotal in analyzing U.S. legal structures, particularly regarding African immigrants' integration and civil rights. His work has informed immigration policies.

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<sup>13</sup> Shawna Chen, *Tech's Troubled History with Asian Workers*, AXION (October 16, 2021)

<https://www.axios.com/2021/10/16/tech-asian-workers-racism-equity> (last visited July 27, 2024)..

<sup>14</sup> Annalee Saxenian, *Brain Circulation, How High Skill Immigration Makes Everyone Better Off*, BROOKINGS (December 1, 2002) <https://www.brookings.edu/articles/brain-circulation-how-high-skill-immigration-makes-everyone-better-off>.

<sup>15</sup> F. Mullan, *Google co-founder Sergey Brin*, 353 NEW ENG. J. MED. 965, 965 (2005).

<sup>16</sup> Partnership for a New American Economy, *The 'New American' Fortune 500* (June, 2011).

<https://www.newamericaneconomy.org/sites/all/themes/pnae/img/new-american-fortune-500-june-2011.pdf>. (last visited July 27, 2024).

<sup>17</sup> Robert Jarvik, *MD on the Jarvik-7*, JARVIK HEART, <https://www.jarvikheart.com/history/robert-jarvik-on-the-jarvik-7/#:~:text=Since%201982%2C%20more%20than%20350,it%20remains%20in%20use%20today> (last visited August 7, 2024).

<sup>18</sup> Kara Rogers, *Ben Carson*, BRITANNICA, (July 19, 2024) <https://www.britannica.com/biography/Ben-Carson> (last visited July 30, 2024).

<sup>19</sup> Andrew Moriarty, *Immigration Benefits All Americans and Strengthens the Economy*, FWD.US (March 14, 2024)

<https://www.fwd.us/news/americans-and-immigration/> (last visited July 30, 2024).

<sup>20</sup> D. Nasaw, *Andrew Carnegie*, 14 (2007).

<sup>21</sup> B. Burrough & J. Helyar, *Barbarians at the Gate: The Fall of RJR Nabisco*, 8 (2009).

#### **D. Educational Sector**

The U.S. educational sector has greatly benefited from talented immigrants, who contribute as educators, researchers, and administrators. By 2019, 17% of college-educated workers were immigrants,<sup>22</sup> with 29% in STEM fields and 52% of doctorate holders being foreign-born.<sup>23</sup>

Nigerian-born Dr. Philip Emeagwali, often called one of the fathers of the internet, exemplifies this impact. His work in computer science has influenced educational methodologies and research, particularly in computational sciences. Similarly, African scholars like Dr. Oye Ibidapo-Obe have shaped U.S. education through collaborative research and exchange programs, raising standards in STEM (science, technology, engineering and mathematics) fields.

#### **E. Scientific Research**

Albert Einstein, a German-born immigrant, revolutionized modern physics with his theory of relativity, which underpins advancements like GPS, nuclear energy, quantum mechanics, and space exploration.<sup>24</sup> On the other hand, Rosalind Franklin, a talented U.S. native, made significant contributions to genetics through her work on the DNA double helix structure, greatly influencing biotechnology and medicine.<sup>25</sup>

### **III. Impact and Economic Contributions of Highly-Skilled Workers on the US Economy**

High-skilled and talented workers – whether foreign-born or native-born, by their labor, activities and minds, contribute immensely to US' economic stability, GDP growth, and international competitiveness in more ways than one.

#### **A. The Native-Born and the Foreign-Born**

Highly skilled workers are essential to U.S. economic growth, particularly through their impact on GDP.<sup>26</sup> These professionals, with advanced degrees and specialized training in areas like technology, healthcare, finance, and scientific research, drive innovation and productivity, key contributors to GDP expansion.

Innovation, largely fueled by skilled workers, significantly boosts GDP. In 2020,<sup>27</sup> over 399,000 patents were issued by the U.S. Patent and Trademark Office, many resulting from the work of these professionals. The National Bureau of Economic Research (NBER) estimates that innovation accounts for about 30% of long-term U.S. GDP growth. This growth occurs as new technologies and processes developed by skilled workers lead to the creation of new industries and the expansion of existing ones<sup>28</sup>

Productivity gains are another critical factor, with sectors like information technology showing high productivity due to their reliance on skilled labor. The information technology sector, for example, grew at an annual rate of 6.7% from 2010 to 2019, compared to the overall U.S. GDP growth of 2.3%, underscoring the significant impact of highly-skilled labor on economic growth.

#### **A. The Immigrants**

The influx of highly skilled immigrants has been a significant driver of U.S. GDP growth, particularly through their contributions to STEM fields. Recent estimates suggest that half of the nation's productivity growth in recent decades can be attributed to increased employment in these areas, largely fueled by immigration.<sup>29</sup> GDP growth between 1990 and 2010. Although these immigrants represent 17% of the college-educated workforce, they are nearly twice as prevalent in STEM fields, highlighting their crucial role in driving innovation and productivity in key sectors.<sup>30</sup>

High-skilled immigrants are indispensable to American innovation, as evidenced by patenting trends.<sup>31</sup> An analysis of U.S. Patent and Trademark Office (USPTO) records by Kerr in 2007 found that while Anglo-Saxon and European names accounted for 91% of

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<sup>22</sup> William R. Kerr, *The Gift of Global Talent: Innovation Policy and the Economy* (HARVARD BUSINESS SCHOOL), 19 INNOV. POL. ECON. 7, 10 (2019).

<sup>23</sup> *Id.*

<sup>24</sup> W. Isaacson, *Einstein: His Life and Universe*, 5-6 (2007).

<sup>25</sup> B. Maddox, *Rosalind Franklin: The Dark Lady of DNA*, 3-5 (2003).

<sup>26</sup> GDP refers to the market value of all goods and services produced within a country. See *supra* at note 4.

<sup>27</sup> Michel Beine, Frédéric Docquier & Hillel Rapoport, *Measuring International Skilled Migration: A New Database Controlling for Age of Entry*, 21 WORLD B. ECON. REV. 249, 253 (2007).

<sup>28</sup> Sari Kerr & Others, *Global Talent Flows*, 30 J. ECON. PERS. 83, 88 (2016).

<sup>29</sup> Chad Jones, *Sources of U.S. Economic Growth in a World of Ideas*, 92 AME. ECON. REV. 220, 229 (2002).

<sup>30</sup> See Gordon H. Hanson & Chen Liu, *High-Skilled Immigration and the Comparative Advantage of Foreign-Born Workers across U.S. Occupation in High-Skilled Migration to the United States and Its Economic Consequences* (Gordon H. Hanson, William R. Kerr & Sarah Turner eds., 2018).

<sup>31</sup> Kerr, *supra* note 22

U.S.-based patents in 1975, this figure had declined to 72% by 2015.<sup>32</sup> The decline was largely due to an increase in patents from Chinese and Indian inventors.<sup>33</sup> Furthermore, data from the World Intellectual Property Organization (WIPO) shows that 18% of U.S.-based inventors in the 2000s were foreign-born. In fact, approximately one in four patented technologies involved an immigrant inventor or co-inventor.

The international competitiveness of the U.S. can also be seen through the number of prestigious awards won over time. The U.S. has dominated Nobel Prizes in Chemistry, Medicine, Physics, and Economic Sciences since 1901, winning 330 awards, with 33% (107) of these won by immigrants.<sup>34</sup>

Beyond innovation and technology, highly skilled immigrants play a vital role in filling skill gaps in the U.S. labor market, thereby enhancing productivity and competitiveness. They are also more likely to start new businesses, creating jobs and driving economic dynamism. According to the National Foundation for American Policy, immigrants have founded over half of the U.S. startup companies valued at \$1 billion or more, making them significant job creators for both native-born and immigrant workers.

In 2023, highly skilled immigrants accounted for 17% of the U.S. GDP, contributing \$3.3 trillion. This contribution is expected to grow, with estimates predicting a \$7 trillion increase in GDP over the next decade. Additionally, skilled immigrants currently contribute nearly \$525 billion annually in federal, state, and local taxes, a figure projected to rise to \$1 trillion over the next ten years, providing a crucial boost to U.S. government revenue.<sup>35</sup>

#### IV. Challenges and Concerns

The following are challenges and concerns mitigating against highly-skilled foreign-born workers migrating to the US, native-workers remaining productive, and barring the US economy from reaping the benefits that would associate therein.

##### A. Brain Waste and Skills Mismatches

Despite the high demand for skilled workers, an estimated 2 million college-educated immigrants were either underemployed or unemployed in the U.S. labor market in 2016.<sup>36</sup> This “brain waste” not only discourages skilled foreign-born individuals from migrating to the U.S. but also results in significant economic losses, including billions of dollars<sup>37</sup> in foregone earnings and tax revenues, ultimately impacting GDP.<sup>38</sup> The issue is particularly acute in states like Florida, Texas, Washington, Michigan, and Ohio,<sup>39</sup> and is more common among immigrants who lack English proficiency or obtained their degrees outside the U.S.<sup>40</sup>

##### B. Displacement and Replacement of Native Workers

There is ongoing concern that foreign-born highly skilled workers might displace native-born employees, a topic that has sparked numerous debates.<sup>41</sup> Despite the implementation of the ‘Protect and Grow American Jobs Act,’<sup>42</sup> which prohibits the replacement of American workers with H1-B visa holders, this fear persists. The perception that immigrants could take jobs from native workers remains strong, leading to anxiety among highly-skilled immigrants about their job security.<sup>43</sup>

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<sup>32</sup> William R. Kerr, *The Gift of Global Talent: How Migration Shapes Business, Economy & Society*, 18-19 (2019a). Since the USPTO did not collect data on the immigration status of the inventors, Kerr developed an ethnic naming convention to arrive at this data.

<sup>33</sup> *Id.* at 20.

<sup>34</sup> *Id.* This number has since increased to 340 in the last awards (being in 2023).

<sup>35</sup> Moriarty, *supra* note 19.

<sup>36</sup> Jeanne Batalova, Michael Fix & James D. Bachmeier, *Untapped Talent: Report in Brief the Costs of Brain Waste Among Highly Skilled Immigrants in the United States*, NEW AME. ECON. MIG. POL. INST. (December 2016)

<https://www.migrationpolicy.org/research/untapped-talent-costs-brain-waste-among-highly-skilled-immigrants-united-states> (last visited July 28, 2024).

<sup>37</sup> *Id.* The 2016 Report shows that over \$39.4B is lost in annual wages by brain waste. Highly skilled immigrants with STEM educational backgrounds represent almost 470,000 of the brain-waste immigrants with in-demand skills—a group that could be especially beneficial to employers if better utilized. These numbers can only increase.

<sup>38</sup> *Supra.*

<sup>39</sup> *Supra.*

<sup>40</sup> Francine D. Blau & Christopher Mackie, *The Economic and Fiscal Consequences of Immigration*. WASHINGTON, DC: NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE, (2016) [www.nap.edu/catalog/23550/the-economic-and-fiscal-consequences-of-immigration](http://www.nap.edu/catalog/23550/the-economic-and-fiscal-consequences-of-immigration) (last visited July 29, 2024).

<sup>41</sup> Robert J. Gordon, *The Rise and Fall of American Growth*, 16 (2016).

<sup>42</sup> U.S. Congress. *Protect and Grow American Jobs Act*, H.R. 170, 115th Cong. (2017-2018), CONGRESS.GOV, <https://www.congress.gov/bill/115th-congress/house-bill/170> (last visited July 27, 2024).

<sup>43</sup> Levi Sumagaysay, *Asian-American Business Leaders rally Against Wave of Hatred: We Don't Deserve to Live in Fear in our Own Country* (April 7, 2021), <https://www.marketwatch.com/story/asian-american-tech-leaders-rally-against-wave-of-hatred-we-dont-deserve-to-live-in-fear-in-our-own-country-11617740339>.

### C. Brain Drain and Talent Retention Concerns

When a country experiences the migration of its top professionals and intellectuals, it risks losing valuable expertise and long-term competitiveness.<sup>44</sup> This “brain drain” can create significant challenges for businesses trying to replace the lost skills and knowledge,<sup>45</sup> often leading to wider technological and scientific development gaps.<sup>46</sup> Developing countries, in particular, may then be left with the sole option of hiring exorbitant foreign skilled-workforce to compensate for these losses.<sup>47</sup> Such concerns have prompted the implementation of anti-emigration policies, which can ultimately stifle economic growth in both the countries losing talent and those receiving it.<sup>48</sup>

### D. Access to Education and Economic Inequality

Perceptions of economic inequality can arise among immigrants when there is a lack of or unequal access to education, training, and inclusiveness.<sup>49</sup> This can influence whether they choose to immigrate and can determine their productivity once in the country, potentially hindering the development of a skilled workforce, and consequently their impact on the U.S. economy. To address this, policies promoting equal access to education, training, and inclusiveness in STEM fields — regardless of race or nationality — should be strengthened to eliminate these perceptions.<sup>50</sup>

### E. Migration and International Students Policies

U.S. migration and student policies significantly impact the influx of highly-skilled workers. Strict visa conditions, such as those associated with H-1B visas, can deter talented professionals from entering the country.<sup>51</sup> Also, restrictions on high-quality students can hinder academic innovation by limiting access to top talent.<sup>52</sup>

### F. Security and Social Safety Concerns

Uncontrolled emigration can foster unhealthy competition, potentially leading to social issues such as crime, violence, fraud, and corruption in the destination country.<sup>53</sup> These problems can arise from various backgrounds and may be exacerbated by brain waste.

## V. Conclusion

### A. Summary of Key Findings

In comparison to other studies, the research finds that highly-skilled workers are crucial for sustaining the US economic growth, particularly in sectors like technology, healthcare, finance, legal, and scientific research. It identifies those sectors with a high concentration of skilled labor, such as information technology and healthcare, exhibit notably higher productivity levels.

The research Note also highlights the substantial contributions of foreign-born workers to U.S. economic growth and innovation, in STEM fields and beyond. Immigrants represent a significant portion of the U.S. workforce in these critical areas. The economic impact of high-skilled immigration is influenced by market conditions and policies, notably visa regulations that govern the entry and stay of skilled workers.

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<sup>44</sup> F. Rizvi, *Rethinking “Brain Drain” in the Era of Globalisation*, 25 ASIA PAC. J. EDU. 175, 180 (2005).

<sup>45</sup> Olena Oliinyk, *Migration of Highly Skilled Workers: Modelling the Relationships with Business Sustainability*, 1 SUS. SOC. DEVT. 1, 8 (2023).

<sup>46</sup> Bhawana Bhardwaj & Dipanker Sharma, *Migration of Skilled Professionals Across the Border: Brain Drain or Brain Gain?*, 41 EURO. MGT. J. 1021, 1022 (2023).

<sup>47</sup> M. B. Forcier, S. Simoens & A. Giuffrida, *Impact, Regulation and Health Policy Implications of Physician Migration in OECD Countries*, 2 HUMAN RES. H. 1, 5 (2004).

<sup>48</sup> The fear can be seen as inadequate, especially when the immigrant constantly connects with his home country or country of birth, serving as conduit linking businesses in the US with those in the country.

<sup>49</sup> S. Chaudhuri & S. Yabuuchi, *Economic Liberalization and Wage Inequality in the Presence of Labor Market Imperfection*, 16 INTL. REV. ECONS. FIN. 592, 596 (2007).

<sup>50</sup> Amanda Bergson-Shilcock & James Witte, *Steps to Success: Integrating Immigrant Professionals in the U.S.* WORLD EDU. SER. IMPR. (2015), [www.imprintproject.org/stepstosuccess/](http://www.imprintproject.org/stepstosuccess/) (last visited August 1, 2024).

<sup>51</sup> N. Doherty, *Understanding the Self-Initiated Expatriate: A Review and Directions for Future Research*, 15 INTL. J. MGT. REVS. 447, 451 (2013). <https://doi.org/10.1111/ijmr.12005>.

<sup>52</sup> Jennifer Hunt, *Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions by Entry Visa*, 29 J. LAB. ECONS. 417, 418 (2011); Dominick Salvatore, *Trump Economics: Overview of effects on the United States and the World*, 40 J. POL. MOD. 480, 482 (2018).

<sup>53</sup> OECD, *The Brain drain and Negative social Effects: When is Home Country Hurt?*, OECD LIBRARY (March 21, 2008), [https://www.oecd-ilibrary.org/development/policy-coherence-for-development-2007/the-brain-drain-and-negative-social-effects-when-is-the-home-country-hurt\\_9789264026100-6-en](https://www.oecd-ilibrary.org/development/policy-coherence-for-development-2007/the-brain-drain-and-negative-social-effects-when-is-the-home-country-hurt_9789264026100-6-en). (last visited August 5, 2024); K. Basu, *The Rise of Trump and an Agenda for Regulatory Reform*, 40 J. POL. MOD. 546, 546 (2018).

The research also reveals several challenges associated with high-skilled immigration and native born-workforce, which include brain waste, brain drain, displacement of native workers, and issues related to security, educational access, and migration policies. Addressing these challenges is essential for maximizing the benefits of high-skilled immigration for both the U.S. and the countries of origin.

### ***B. Recommendations for Policymakers and Industry Leaders***

Given their significant impact on the U.S. economy, both highly-skilled immigrants and talented native-born individuals must remain integral to American society. Policymakers and industry leaders should ensure that immigrants and natives can compete on a level playing field. To achieve this, the challenges identified in this research need to be addressed directly through effective immigration policies. The following recommendations are proposed for consideration:

To address brain waste and skills mismatches, it is essential to establish programs that more efficiently recognize and validate foreign credentials. Partnerships between U.S. educational institutions, employers, and licensing bodies should streamline the credential recognition process. Additionally, specialized job placement services should be created to align highly-skilled immigrants with positions that match their qualifications, focusing on industries with high demand. Expanding funding and access to English language training tailored for highly-skilled immigrants will further support their integration into the U.S. workforce.

To mitigate the displacement of native workers and address their concerns, investments in retraining and upskilling programs for native workers in high-demand sectors are crucial. This approach ensures that native workers remain competitive in a changing job market. Furthermore, tax incentives or grants for companies that create jobs for both native and immigrant workers, particularly in high-growth industries like technology and healthcare, should be implemented. Strengthening monitoring and enforcement of laws such as the "Protect and Grow American Jobs Act" will help prevent unfair displacement of native workers.

To counter brain drain and enhance talent retention, bilateral agreements with developing countries should be established to facilitate knowledge and skills exchange. These agreements might include temporary work visas, return migration incentives, and collaborative research opportunities.

To improve educational access and reduce inequality, continued investment in expanding STEM education for underrepresented groups is vital, both domestically and through international scholarships. Grants and financial aid for continuing education programs, particularly for immigrants seeking to update their skills or gain additional qualifications, should also be increased.

Reforming the visa application process to make it faster and more transparent for highly-skilled workers is essential. Expanding the H-1B visa program and creating new visa categories for emerging sectors, along with offering clearer pathways to permanent residency and post-graduation work visas for international students, will support talent retention in critical industries.

Finally, to address security and social issues, community-based programs supporting the social integration of skilled immigrants, such as mentorship, cultural exchange, and legal assistance, should be developed. These initiatives can reduce social isolation and the risk of involvement in criminal activities. Implementing these policy recommendations will be crucial for the economy and society in the coming decades.<sup>54</sup>

### ***C. Final Thoughts on the Future of the Highly-Skilled Workforce in the US***

The future of the highly-skilled workforce in the U.S. will depend on adaptability, innovation, and inclusivity. As technology advances and global competition grows, it is crucial to support talent through effective education, immigration policies, and ongoing skill development. Businesses should focus on diversity, collaboration, and continuous learning to stay competitive. Embracing these strategies will help ensure sustained economic growth and reinforce the U.S.'s leadership in the global economy.

Highly-skilled immigrants play a significant role in strengthening the U.S. economy and enhancing its prosperity. They contribute to job creation, wage increases, reduced inflation, and heightened productivity and innovation. Immigrants impact nearly every sector, particularly in critical fields such as healthcare, agriculture, construction, and emerging technologies like semiconductors and artificial intelligence. Their increased creation or increased spending on goods and services boosts GDP, leading to the creation of new businesses and additional jobs.<sup>55</sup>

In specific occupational fields, immigrants and natives may compete, such as foreign-born doctors vying with native doctors. However, immigrants can also create demand for services that benefit other native professionals, such as healthcare support staff. Shifting the perspective of native workers to view immigrants as collaborators rather than competitors will be beneficial for the economy.<sup>56</sup>

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<sup>54</sup> Kerr, *supra* note 22 at 10; Robert. J. Gordon & Hassan Sayed, *Prospects for a Revival in U. S. Productivity Growth*, 41 J. POL. MOD. 444, 449 (2019).

<sup>55</sup> Moriarty, *supra* note 19.

<sup>56</sup> J. E. Stiglitz, *Trump and Globalization*, 40 J. POL. MOD. 515, 520 (2018).

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